

# Index

*Note:* Page numbers followed by c indicate charts; those followed by f indicate figures; those followed by t indicate tables.

## A

- Abacavir, 1018t, 1059
- Abatacept, 1073t
- ABCDEF bundle, 567c
- ABCDEs of moles, 1856–1857c
- Abciximab, 661, 735, 1058
- Abdomen
  - acute, 1297–1305
  - auscultation, 1215–1216
  - percussion and palpation, 1215–1216
- Abdominal aortic aneurysm
  - assessment and diagnostic findings, 840
  - atherosclerosis and, 840
  - clinical manifestations, 840
  - endovascular and surgical management, 840–841f
  - nursing management, 840–841
  - in older patients, 840
  - pathophysiology, 840
  - pharmacologic therapy, 840
- Abdominal compartment syndrome (ACS), 282, 1873
- Abdominal distention, 671
- Abdominal examination, 671–672, 1215–1216
  - abdominal x-ray, 1421
  - CT scan, 1220
  - ultrasonography, 1217–1218
- Abdominal injuries, 2232

- Abdominoperineal resection for carcinoma, 1329f
- Abduction, 41, 449, 1102f, 1130, 1130, 1179, 1185, 1199–1200
- A-beta ( $\beta$ ) fibers, 201
- Abiraterone acetate, 1756
- Ablation, 697, 701–702
  - radiofrequency, 314, 683
- Abnormal heart sounds, 669–670
- Abnormal uterine bleeding, 1658
- Abnormal wound healing, 1888
- ABO incompatibility, 902
- Abortion
  - definition, 1664
  - habitual or recurrent, 1664
  - induced
    - medical management, 1665–1666
    - nursing management, 1666
    - types, 1665c
  - medical management, 1664
  - nursing management, 1665
  - spontaneous, 1664
- ABO system, 899
- Above-knee amputation (AKA), 856, 1195
- Abrasion, 399, 573, 670, 861, 1168, 1175, 1819, 1835, 1844, 1851, 1920, 1924–1925, 1998, 2056, 2082, 2191c, 2193–2194, 2211
- Absolute neutrophil count (ANC), 355, 929, 953
- Absorption, 179, 1209
- Abstinence, 1660
- Acalculous cholecystitis, 1418, 1421
- Acantholysis, 1846
- Acarbose, 1505t
- Acceptance, stages of grief, 384
- Accessory muscles, 477–479
- Accidents, 1153
- Acculturation, 93
- Acebutolol, 698t, 873t
- Acetabular fractures, 1183
- Acetaminophen, 2209t
  - gerontologic considerations, 217
  - IV, 208
  - side effects, 208

- Acetazolamide, [1373](#)
- Acetylcholinesterase inhibitor test, [2101](#)
- Achalasia, [1253–1253f](#)
- Achilles reflex, [1982–1983](#)
- Achilles tendon, [1157](#)
- Achilles tendon, rupture of, [1157](#)
- Achlorhydria, [1272](#), [1278](#)
- Acid–base balance, regulation of, [1539](#)
- Acid–base disturbances, [258–259](#)
  - blood gas analysis, [264](#)
- Acidosis
  - metabolic, [259–261](#), [1570](#)
  - respiratory, [262–263](#)
- *Acinetobacter* sp., [533](#), [1316](#), [2154](#)
- Acini, [1446](#)
- Acne treatment, [1787](#)
- Acne vulgaris, [1832–1834](#)
  - assessment and diagnostic findings, [1832](#)
  - clinical manifestations, [1832](#)
  - medical management
    - antibiotic agents, [1833](#)
    - estrogen therapy, [1834](#)
    - nutrition and hygiene therapy, [1832–1833](#)
    - pharmacologic treatments, [1833](#)
    - phototherapy, [1834](#)
    - prevention of scarring, [1834](#)
    - salicylic acid preparations, [1833](#)
  - nursing management, [1834](#)
  - pathophysiology, [1832](#)
  - surgical management, [1834](#)
- Acoustic neuromas, [1957–1958](#), [2114](#)
- Acquired (adaptive) immunity, [989](#)
- Acquired bleeding disorders
  - heparin-induced thrombocytopenia (HIT), [939–840](#)
  - liver disease, [939](#)
  - vitamin K deficiency, [939](#)
- Acquired immune deficiency syndrome (AIDS), [80](#), [534](#), [1007](#)
  - epidemiology, [1008–1009](#)
  - gerontologic considerations, [1009](#)
- Acrocyanosis, [844](#)

- Acromegaly, 1450
- Acrosyndromes, 844
- Actinic cheilitis, 1230t
- Active transport, 228
- Activities of daily living (ADLs), 37, 143, 174
  - assessment of, 37
  - nursing process, 37–40
- Acute abdomen
  - appendicitis, 1298–1300
  - diverticular disease, 1300–1302
  - intestinal obstruction, 1302–1305
  - peritonitis, 1297–1298
- Acute alcohol intoxication, 2205–2210
- Acute bacterial rhinosinusitis (ABRS), 499
  - assessment and diagnostic findings, 499
  - clinical manifestations, 499
  - complications, 500
  - medical management, 500
  - nursing management, 500–501
  - symptoms of, 499
- Acute compartment syndrome, 1162–1164, 1169
  - assessment and diagnostic findings, 1162–1163
  - medical management, 1163–1164
  - nursing management, 1164
- Acute coronary syndrome (ACS), 726, 737
  - assessment and diagnostic findings, 738c
    - ECG changes, 738–739
    - echocardiogram, 739
    - laboratory tests, 739–740
    - patient history, 738
  - cardiac rehabilitation, 741
  - clinical manifestations, 738
  - medical management
    - emergent percutaneous coronary intervention, 740
    - inpatient management, 740–741
    - thrombolytic therapy, 740–741c
  - nursing process, 742–745
  - pathophysiology, 737–738
- Acute generalized exanthematous pustulosis (AGEP), 1058
- Acute hemolytic reaction, 902

- Acute/intermediate phase of burn, 1876
- Acute intermittent peritoneal dialysis, 1587–1588
- Acute kidney injury (AKI), 1564
  - assessment and diagnostic findings, 1567
  - categories, 1565
  - causes, 1566c
  - classifications of, 1565
    - RIFLE, 1565t
  - clinical manifestations, 1566
  - COVID-19 and, 1564–1565
  - medical management
    - nutritional therapy, 1569
    - pharmacologic therapy, 1568–1569
  - nursing management, 1569–1570
  - in older adults, 1568
  - pathophysiology, 1565
  - phases, 1565–1566
  - prevention, 1567–1567c
- Acute liver failure (ALF), 1392–1393
- Acute lung injury (ALI), 279, 282, 1876
- Acute lymphocytic leukemia (ALL)
  - clinical manifestations, 956–957
  - medical management, 957
  - nursing management, 957
  - nursing process, 959–962
- Acute mastitis, 1711c
- Acute myeloid leukemia (AML), 951–955
  - assessment and diagnostic findings, 953
  - clinical manifestations, 953
  - complications of, 954–955
  - medical management, 953–954
  - nursing management, 955
- Acute myocardial infarction
  - assessment and diagnostic findings, 738c
  - treatment guidelines, 740c
- Acute nephritic syndrome, 1558–1558f
- Acute otitis media (AOM), 1948–1949
- Acute pain, 198
- Acute pancreatitis
  - affecting older adults, 1429

- assessment and diagnostic findings, 1430
- clinical manifestations, 1430
- intensive care, 1431
- medical management, 1431
  - placement of biliary drains, 1431
  - surgery, 1431
- mortality rate, 1430c
- nursing management, 1432–1433
- pain management, 1431
- pathophysiology, 1429–1430
- plan of nursing care, 1434c–1436c
- postacute management, 1431–1432
- respiratory care, 1431
- Acute pharyngitis
  - assessment and diagnostic findings, 503–504
  - clinical manifestations, 503
  - medical management, 504
  - nursing management, 504
  - nutritional therapy, 504
  - pathophysiology, 503
  - signs and symptoms, 503
- Acute pyelonephritis, 1610
- Acute radiation syndrome (ARS), 2238–2239, 2239t
- Acute respiratory distress syndrome (ARDS), 262, 279, 279, 466, 466, 483, 542, 542, 571–573, 571f, 571t, 1876
  - among patients with COVID-19, 573–574
  - assessment and diagnostic findings, 572
  - clinical manifestations, 571–572
  - medical management
    - nutritional support, 572
    - PEEP support, 572
    - pharmacologic treatment, 572
  - nursing management, 572–573
    - analgesia, 573
    - ventilator considerations, 572–573
  - pathophysiology, 571–571f
  - risk factors, 571c
- Acute respiratory failure, 528f, 530–531, 556–571
  - clinical manifestations, 556
  - early signs, 556

- medical management, 556
- nursing management
  - endotracheal intubation, 556–557
  - mechanical ventilation, 559–571
  - tracheotomy, 557–559
- pathophysiology, 556
- Acute rhinosinusitis, 499–501
- Acute SDH, 2059
- Acute strains, 1153
- Acute tracheobronchitis
  - clinical manifestations, 531
  - fungal infections, 530
  - medical management, 531
    - antibiotics, 531
    - antihistamines, 531
    - cool vapor therapy, 531
    - suctioning and bronchoscopy, 531
  - nursing management, 531
  - pathophysiology, 530–531
  - sputum culture, 530
  - viral infections, 530
- Acute urticaria, 1059
- Acute vaso-occlusive crisis, 920
- Acute viral rhinosinusitis (AVRS)
  - assessment and diagnostic findings, 499
  - clinical manifestations, 499
  - complications, 500
  - medical management, 500
  - nursing management, 500–501
  - pathogens associated with, 499
  - pathophysiology, 499
  - symptoms of, 499
- ADA Amendments Act of 2008, 150
- Adaptation, 98
- Adaptive devices, 36
- Addisonian crisis, 1477–1478, 1481
- Addison's disease
  - assessment and diagnostic findings, 1477
  - clinical manifestations, 1477
  - medical management, 1477

- nursing management, 1477–1479
- Adduction, 41c, 408, 1102f, 1130, 1130
- A-delta fibers, 199, 201
- Adenoiditis, 505–506
- Adenoids, 463–464
- Adenomatous polyposis gene (*APC*), 1325
- Adenomyosis, 1694
- Adenosine, 575, 677–678, 697, 703–704
- Adenosine diphosphate receptor antagonists (P2Y<sub>12</sub>), for angina, 735
- Adenosine triphosphate (ATP), 106, 254, 274, 274, 1100, 1100–1101, 2033
- Adherence, 57–58
  - definition, 57
  - factors affecting, 57–58
- Adiposopathy, 1344
- Adjunct medications for heart failure, 803
- Adjuvant analgesic agents, 208
- Adjuvant chemotherapy, 515, 1731–1732, 1732t
- Adjuvant hormonal therapy, 1733, 1733–1734, 1734t
- Adnexa, 1643
- Adnexal palpation, 1652
- Adolescents
  - health promotion programs for, 66
  - nutritional assessment, 86
- Adrenal cortex, 1474
- Adrenalectomy, 1476, 1480–1481, 1483
- Adrenal enzyme inhibitors, 1480
- Adrenal functions, 231
- Adrenal glands, 1474
- Adrenaline, 1047, 1074, 1474
- Adrenal medulla, 1474
- Adrenergic agents, for allergic rhinitis, 1050–1051
- Adrenocortical insufficiency. *See* Addison's disease
- Adrenocorticotrophic hormone (ACTH), 100–101, 103, 105, 257, 1001, 1449–1451, 1474, 1477, 1479–1480, 2016, 2114
- Adrenogenital syndrome, 1474
- Adult children of African immigrants, cultural beliefs, perceptions, and practices of, 93c
- Adult-onset genetic conditions, testing and screening of, 127–128, 128t–129t



- nursing role in, 130
- Adult (or Child) Protective Services, 186, 2212
- Adults, health promotion programs for, 66–68, 67t
- Adult-type progressive TB, 547
- Adult voiding dysfunction, 1611–1620
- Advanced cardiovascular life support, 814
- Advanced care planning, 375–376
- Advance directives, 90–191, 278, 278
- Advanced practice registered nurses (APRNs), 34
- Adventitia, 817–818
- Adventitious sounds, 482–483t
- Adverse drug effects, 1540
- Advisory Committee on Immunization Practices (ACIP), 275, 1389, 1681–1682, 1752
- *Aerobacter aerogenes*, 456
- Aerosol delivery devices, 615t
- Aerosol masks, 614
- Aerosols, 1820
- Affordable Care Act (ACA), 132, 132, 150, 150, 151, 160, 160, 372, 372, 1641
- Aflatoxin, 1405
- Afrezza, 1500t
- African Americans, hypertension in, 866, 877c
- After-death care, 381
- After-death rituals, 382–383, 385
- Afterload, 656
- Age/aging
  - alcohol and drug misuse, 181
  - burn injury, 1867
  - cognitive aspects of, 178–179
  - coping patterns, 176
  - delirium and, 182
  - demographics of, 167
  - depression and, 181
  - with disability, 190
  - ethical and legal issues affecting, 190–191
  - gastrointestinal system and, 172–173
  - genitourinary system and, 172
  - health care costs of, 189–190
  - hospice and palliative care, 190

- integumentary system and, [171–172](#)
- living arrangements, [176–178](#)
- musculoskeletal system and, [174](#)
- nervous system and, [174–175](#)
- nutritional health, [173](#)
- pharmacologic aspects of, [179–180](#)
- physical aspects of, [168–176](#)
- psychosocial aspects of, [176–178](#)
- reproductive system and, [172](#)
- respiratory system and, [171](#), [471t](#)
- sensory system and, [175–176](#)
- sleep, [173–174](#)
- theories of, [168](#)
- Ageism, [176](#)
- Agency for Healthcare Research and Quality (AHRQ), [603](#)
- Age-related changes
  - altered pharmacokinetics, [179](#), [180t](#)
  - cardiovascular changes, [169](#)
  - cellular and extracellular changes, [168](#)
  - gastric changes, [172–173](#)
  - hearing loss, [175](#)
  - mobility, [174](#)
  - neurologic, [174–175](#)
  - renal function, [172](#)
  - respiratory efficiency, [171](#)
  - risk of malnutrition, [173](#)
  - senses of taste and smell, [172–173](#), [176](#)
  - sexual activity, [172](#)
  - skin changes, [171–172](#)
  - sleep quality, [173](#)
  - vision, [175](#)
- Age-related macular degeneration, [175](#), [1902](#), [1922–1923](#)
- Agglutination, [992](#)
- Agitation, reduction of, [185](#)
- Agnosia, [1982–1982t](#), [2033](#)
- Agonist–antagonist opioids, [209](#)
- Agonists, [209](#)
- Agranulocytes, [888f](#), [889](#)
- AIDS-related anorexia, [1025](#)
- AIDS-related lymphomas, [1023](#)

- Airborne bacteria, [422](#), [1588](#)
- Airborne precautions, [2151–2152c](#)
- Air embolism, [267](#)
- Air pressure variances, [466](#)
- Air trapping, [616](#), [627](#)
- Airway clearance, [619–625](#)
- Airway edema, [633](#)
- Airway management, [420](#), [430](#), [507](#), [565](#), [2037](#)
- Airway obstruction, [2187–2189](#)
  - assessment and diagnostic findings, [2187](#)
  - clinical manifestations, [2187](#)
  - management, [2187–2189](#)
    - cricothyroidotomy, [2189](#)
    - endotracheal intubation, [2188](#)
    - establishing an airway, [2187–2189](#)
    - maintaining ventilation, [2189](#)
  - pathophysiology, [2187](#)
  - signs and symptoms of, [2187](#)
- Airway pressure release ventilation (APRV), [562](#)
- Airway resistance, [466–466c](#)
- Akathisia, [2129](#)
- Akinetic mutism, [1993](#)
- Alanine aminotransferase (ALT), [279](#), [1347](#), [1369](#)
- Alarm fatigue, [563–564](#), [675–677](#), [695](#)
- Alaryngeal communication, [517](#)
- Alberta Stroke Program Evaluation of Computed Tomography (ASPECT) score, [2036](#)
- Albuterol, [247](#), [297](#), [617t](#), [634](#), [635t–636t](#)
- Alcohol abuse, [403](#)
- Alcohol consumption, diabetes and, [1496](#)
- Alcoholic cirrhosis, [1368](#), [1393](#)
- Alcoholics Anonymous, [1241](#), [1384](#), [1404](#), [1433](#)
- Alcohol withdrawal syndrome, [2210](#)
- Aldosterone, [230–231](#)
- Aldosterone antagonists, [800](#)
- Aldrete score, [442–443f](#)
- Aldrete score form, [438](#), [442–443f](#)
- Alefacept, for psoriasis, [1844](#)
- Alemtuzumab, [959](#)
- Alfentanil, [426t](#)

- Alfuzosin, for BPH, [1754](#)
- Alginates, [1816–1817t](#)
  - calcium, [1818](#)
- Algorithm, use of, [9](#)
- Aliskiren, for hypertension, [874t](#)
- Alkaline phosphatase (ALP), [1111](#), [1137](#), [1369](#), [1372](#), [1377](#), [1395](#), [1405–1406](#), [1791](#)
- Alkalizing agents, [261](#)
- Alkalosis, [243](#)
  - metabolic, [244–245](#), [257–259](#), [261–262](#), [261–262](#)
  - respiratory, [255](#), [263](#)
- Alkylating agents, [321t](#)
- Alkylating agents, for multiple myeloma, [978t](#)
- Alleles, [120](#), [123f](#)
- Allergen desensitization, [1047](#)
- Allergen immunotherapy (AIT), [1052–1053](#)
- Allergens, [1039](#), [1069](#)
- Allergic disorders, [1045](#)
  - allergic rhinitis, [1048–1054](#)
  - anaphylaxis, [1046–1047](#)
  - angioneurotic edema, [1059](#)
  - assessment form, [1042–1044c](#)
  - atopic dermatitis, [1057](#)
  - atopic diseases, [1045](#)
  - cold urticaria, [1060–1061](#)
  - contact dermatitis, [1056–1057](#)
  - diagnostic evaluation, [1044](#)
    - complete blood count with differential, [1044](#)
    - eosinophil count, [1044](#)
    - provocative testing, [1045](#)
    - serum-specific IgE test, [1045](#)
    - skin testing, [1044–1045](#), [1045f](#)
    - total serum IgE levels, [1044](#)
  - drug hypersensitivity, [1057–1059](#)
  - food allergy, [1061–1062](#)
  - hereditary angioedema, [1060](#)
  - latex allergy, [1062–1064](#)
  - nonatopic disorders, [1045](#)
  - urticaria, [1059–1060](#)
- Allergic reactions, during a transfusion, [903](#)

- Allergic rhinitis, 1048–1056
  - assessment and diagnostic findings, 1049
  - clinical manifestations, 1049
  - home care checklist, 1055c–1056c
  - medical management, 1049–1052
    - avoidance therapy, 1049
    - immunotherapy, 1052–1054, 1053c
    - pharmacologic therapy, 1049–1052, 1051t–1052t
  - nursing process
    - assessment, 1054
    - diagnosis, 1054
    - evaluation, 1055–1056
    - nursing interventions, 1054–1055
    - planning and goals, 1054
  - pathophysiology, 1049
- Allergy, 998, 998, 1039, 1039
  - asthma and, 633
  - latex, 402, 405, 431, 431, 433, 643, 1062–1064
  - to local anesthetics, 217
- Alloantibodies, 926
- Allodynia, 202
- Allogeneic HSCT (AlloHSCT), 326, 326–327, 955, 957, 959, 963, 968, 977
- Allogeneic vaccines, 331
- Allograft, 779, 1147, 1156, 1164, 1164–1165
- Allopurinol, 954, 1058, 1058–1059, 1090, 1622, 1848
- Alogliptin, 1505t
- Alopecia, 318, 349, 978t, 1083, 1390, 1702, 1732–1733, 1800, 1811, 1811–1812
  - definition, 318, 327, 336
  - nursing interventions, 342c
  - nursing management, 349
- Alosetron, 1295
- Alpha-adrenergic agonists, 1050
- Alpha-adrenergic blockers
  - for BPH, 1754
  - for pheochromocytoma, 1476
- Alpha<sub>1</sub>-antitrypsin deficiency, 603, 605, 607
- Alpha cells, 1417, 1490, 1513
- Alpha-fetoprotein (AFP), 928, 1217

- in primary liver cancer, [1405](#)
- Alpha-glucosidase inhibitors, [1505t](#)
- Alpha-interferon, in hepatitis B, [1389](#)
- Alphanate, [896](#)
- Alprostadil, [1749t](#), [1750](#)
- Alteplase (Activase, t-PA), [740](#)
  - for venous thromboembolism, [849t](#)
- Altered drug responses in older adults, [180t](#)
- Altered level of consciousness (LOC)
  - assessment and diagnostic findings, [1994](#)
  - clinical manifestations, [1994](#)
  - definition, [1993](#)
  - description, [1994](#)
  - management, [1994](#)
  - nursing process, [1994–1999](#), [1996t](#)
  - pathophysiology, [1993–1994](#)
- Altered pharmacokinetics, [179](#)
- Altered skin integrity, [318](#)
- Altretamine, [321t](#)
- Aluminum carbonate, [1473](#)
- Alveoli, [465](#)
- Alzheimer's disease (AD), [182–186](#)
  - assessment and diagnostic findings, [184](#)
  - balanced activity and rest, promotion of, [185–186](#)
  - clinical manifestations, [183–184](#)
  - cognitive function, improving, [184](#)
  - communication in, improvement of, [185](#)
  - community care, [186](#)
  - death rate, [182](#)
  - early-onset, [182](#)
  - emotional support, [185](#)
  - familial, [182–183](#)
  - medical management, [184](#)
  - nursing management, [184–186](#)
  - nutrition, promotion of, [185](#)
  - pathogenesis of, [183](#)
  - physical safety in, promotion of, [185](#)
  - prevalence of, [182](#)
  - self-care activities in, promotion of, [185](#)
  - socialization and intimacy needs, [185](#)

- transitional care, 186
- Ambulation, 43–44
- Ambulatory blood pressure measurement (ABPM), 869
- Ambulatory electrocardiography, 675–676
- Ambulatory surgeries, 397, 400, 410–411
- Amenorrhea, 1657–1658
- American Academy of Family Physicians (AAFP), 876
- American Cancer Society (ACS), 303, 369, 1241, 1709
- American College of Cardiology and American Heart Association (ACC/AHA)
  - for ACE inhibitor, 802
  - classification of heart failure, 799t, 804
  - classification system for hypertension, 866–866t
  - dosage of diuretic, 800
- American College of Medical Genetics and Genomics, 132
- American College of Obstetricians and Gynecologists (ACOG), 133
- American College of Physicians (ACP), 876
- American Geriatric Society (AGS), 218
- American Joint Replacement Registry (AJRR), 1125
- American Lung Association, 474
- American Psychological Association (APA), 211
- American Society for Pain Management Nursing (ASPMN), 378
- American Society for Parenteral and Enteral Nutrition (ASPEN), 1246
- American Society of Anesthesiologists (ASA), 407
  - Physical Classification System, 420
- American Society of Clinical Oncology (ASCO), 320
- Americans With Disabilities Act of 1990 (ADA), 142, 146, 148
- Amine hormones, 1447
- Aminoglycosides, 328
- Amlodipine, 844
- Ammonia conversion, 1366
- Amoxicillin, 1269t
- Amphotericin B, 328
- Amputation, 1193–1195
  - above-knee amputation (AKA), 1195
  - complications, 1195
  - home care checklist, 1201c
  - level of, 1195
  - medical management, 1195–1196
  - nursing process, 1196–1202

- rehabilitation, [1196](#)
- Amsler grid testing, [1902](#)
- Amylase, [1210](#)
- Amyloid precursor protein, [183](#)
- Amyotrophic lateral sclerosis, [2131–2132](#)
- Anabolic steroids, [2209t](#)
- Anal fissure, [1334–1335](#)
- Anal fistula, [1334](#)
- Analgesic anticonvulsant therapy, [217](#)
- Analgesic medications
  - co-analgesic agents, [216–218](#)
  - dual-mechanism, [214](#)
  - nonopioid, [208–209](#)
  - opioid antispasmodic agents, [209–216](#)
- Anaphylactic shock, [296](#), [1046](#)
  - medical management, [296–297](#)
- Anaphylactoid reaction, [1046](#)
- Anaphylaxis, [431](#), [1041](#), [1046–1047](#)
  - clinical manifestations, [1046](#)
  - common causes of, [1046c](#)
  - defining characteristics, [296](#)
  - local or systemic reactions, [1046](#)
  - medical management, [1047](#)
  - nonallergenic, [1046](#)
  - nursing management, [1047](#)
  - pathophysiology, [1046](#)
  - penicillin for, [1046](#)
  - prevention, [1047](#)
  - signs and symptoms of, [296](#)
  - venom immunotherapy for, [1047](#)
- Anatomic stage group, [312](#)
- Ancestry of patients and families, genetic assessment, [132](#)
- Androgen deprivation therapy, [1760](#)
- Androgenic alopecia, [1811–1812](#)
- Androgens, [1474](#)
- Anemia, [802](#), [1570](#)
  - aplastic, [916–917](#)
  - assessment and diagnostic findings, [911](#)
  - causes, [910–911](#), [911c](#)
  - classification of, [910t](#)



- clinical manifestations, 911
- glucose-6-phosphate dehydrogenase (G-6-PD) deficiency, 926
- hemolytic, 919
- immune hemolytic, 926–927
- of inflammation, 916
- iron deficiency, 914–916
- medical management, 911–912
  - gerontologic considerations, 911–912
- megaloblastic, 917–919
- nursing process, 912–914
  - assessment, 912
  - diagnosis, 912–913
  - evaluation, 913–914
  - nursing interventions, 913
  - planning and goals, 913
- pathophysiology, 910–911
- in renal disease, 916
- severity of, 911
- sickle cell, 919–925
- symptoms, 911
- thalassemias, 925–926
- Anesthesia, 424
  - administration of, 426–428
  - approaches, 397
  - awareness, 430–431
  - complications associated with
    - anaphylactic reaction, 431
    - hyperthermia, 432
    - hypothermia, 431–432
    - hypoxia, 431
    - nausea and vomiting, 431
  - epidural, 428–429
  - for eye, 1908
  - inhaled anesthetic agents, 425–426, 425t
  - local, 430
  - multimodal, 428
  - peripheral nerve blocks (PNBs), 429
  - regional, 428
  - regional and local anesthetic agents, 429t
  - spinal, 429

- Anesthesiologist, [420](#)
- Aneuploidy, [124](#)
- Aneurysms, [825](#), [838–841](#)
  - abdominal aortic, [840–841](#)
  - artery, [841](#)
  - etiologic classification of, [839c](#)
  - thoracic aortic, [839](#)
- Angina pectoris
  - clinical manifestations, [733](#)
  - gerontologic considerations, [733](#)
  - home care, [737c](#)
  - intractable or refractory angina, [733c](#)
  - medical management
    - antiplatelet medications, [735](#)
    - beta-adrenergic blocking agents, [734](#)
    - calcium channel blockers, [734–735](#)
    - drugs, [733–734t](#)
    - nitroglycerin, [733](#)
    - oxygen therapy, [735](#)
  - nursing process, [735–737](#)
  - pathophysiology, [732–733](#)
  - silent ischemia, [733c](#)
  - stable angina, [733c](#)
  - unstable angina, [733c](#)
  - variant angina, [733c](#)
- Angioedema, [1046](#), [1059](#)
  - bradykinin-mediated, [1059–1060](#)
  - hereditary, [1060](#)
  - mast cell-mediated, [1059](#)
  - regions involved in, [1059](#)
- Angiography, [825–826](#), [1902–1903](#)
- Angiomas, [1852](#)
- Angioneurotic edema, [1059](#)
- Angiotensin-converting enzyme (ACE) inhibitors, [472](#), [801](#), [1060](#), [2036](#)
  - for hypertension, [871–872t](#)
- Angiotensin receptor blockers (ARBs), [801](#)
  - for hypertension, [871–872t](#)
- Angiotensin receptor-neprilysin inhibitors (ARNIs), [802](#)
- Animal and human bites, [2200](#)

- Ankle-brachial index (ABI), 823
  - avoiding errors in, 824c
  - range of pressure and ischemic manifestations, 824c
- Ankylosing spondylitis, 1088
- Annuloplasty, 772
- Anorectal abscess, 1334
- Anorexia, 350, 1178
  - at end-of-life, 380–380t
- Anoscopy, 1224
- Antagonists, 210
- Anterior cord syndrome, 2071c
- Anterior cruciate ligament (ACL), 1156
- Anterior pituitary gland, 1449–1450
- Anthrax, 2232–2234
- Antibacterial sulfonamides, 1058
- Antibody, 990, 992
- Anticentromere antibody (ACA), 1085
- Anticholinergics, 634
- Anticipatory grief, 384
- Anti-citrullinated peptide antibody (ACPA), 1079, 1085
- Anticoagulants, 802
  - for VTE, 847–849t
- Antidepressant co-analgesic medications, 217
- Antidepressant therapy, for HIV infections, 1025
- Antidiarrheal therapy, 1025
- Antidiuretic hormone (ADH), 230, 232, 237, 241, 275, 1450, 1452, 1538
- Anti-embolism stockings, 1186
- Antigen, 990
- Antigen–antibody binding, 992–993
- Antigenic determinant, 992
- Antigen-presenting cells (APCs), 308
- Antigen recognition, 991–992
- Antigens
  - complete protein, 1039
  - functions of, 1039
  - low-molecular-weight substances, 1039
- Antihistamine, 1040
  - for allergic rhinitis, 1051t
- Antihistamines, 903

- for allergic rhinitis, 1049–1050
- for anaphylactic reactions, 1047
- for atopic dermatitis, 1057
- Anti-infective medications, 1908–1909
- Antimicrobial dressings, 1818
- Antinuclear antibody (ANA), 1084
- Antiphospholipid antibody syndrome, 946
- Antiretroviral therapy (ART), 1007, 1010–1011, 1014, 1016–1018c
  - agents, 1018t–1020t
  - drug resistance, 1020–1021
- Antithrombin deficiency, 945
- Antithrombotic drugs, 700–701
- Antithymocyte globulin (ATG), 963
- Antithyroid medications (thionamides), 1463–1464
- Anxiety, 441, 1177, 1268
  - at end-of-life, 380–381
  - in patients with HF, 807
- Aortic dissection
  - assessment and diagnostic findings, 842
  - clinical manifestations, 842
  - medical management, 842
  - nursing management, 842
  - pathophysiology, 841–842
- Aortic regurgitation, 769
- Aortic valve autografts, 774
- Aortic valve stenosis, 769–770
- Aortoiliac disease, 838
- Aphasia, 2033
- Apheresis, 895–896t
- Aphthous stomatitis, 1230t
- Aplastic anemia, 916–917
  - assessment and diagnostic findings, 916
  - clinical manifestations, 916
  - medical management, 916–917
  - nursing management, 917
  - pathophysiology, 916
- Apoptosis, 304, 990
- Appendicitis, 1298–1300
  - assessment and diagnostic findings, 1299
  - clinical manifestations, 1299

- complications, 1299
- gerontologic considerations, 1299
- medical management, 1299–1300
- nursing management, 1300
- pathophysiology, 1299
- Applied ethics, 25
- Appraisal, 100
- Apraxia, 2033
- Area Agencies on Aging (AAAs), 189
- Aromatase inhibitors, 1733
- Aromatic antiepileptic drugs, 1058
- Arrhythmias, 440–441, 691
  - adjunct modalities and management, 712–723
  - atrial, 697–704
  - conduction abnormalities, 708–710
  - junctional, 704–705
  - medications, 698t
  - nursing process, 710–712
  - sinus node, 696–697
  - ventricular, 705–708
- Arterial blood gas (ABG) studies, 487
- Arterial disorders
  - aneurysms, 838–841
  - aortic dissection, 841–842
  - aortoiliac disease, 838
  - arterial embolism and arterial thrombosis, 842–844
  - arteriosclerosis and atherosclerosis, 826–833
  - peripheral artery disease, 833–837
  - Raynaud phenomenon, 844
  - upper extremity arterial occlusive disease, 837–838
- Arterial embolism, 842–844
- Arterial pulses
  - amplitude, 666–667
  - contour, 667
  - palpation of, 667
  - rate, 666
  - rhythm, 666
- Arterial thrombosis, 842–844
- Arterial ulcers, 855
- Arteries, 817–818, 1970

- Arterioles, [817–818](#)
- Arteriosclerosis, [826–833](#)
- Arteriovenous fistula (AVF), [1579](#)
- Arteriovenous graft, [1579–1580](#)
- Arteriovenous malformations, [2049](#)
- Arthritis, [1067](#)
  - psoriatic, [1088–1089](#)
  - reactive, [1088](#)
  - rheumatoid
    - assessment and diagnostic findings, [1079](#)
    - clinical manifestations, [1078–1079](#)
    - medical management, [1079–1081](#)
    - nursing management, [1081–1082](#)
    - pathophysiology, [1078](#)
  - septic, [1145](#)
- Arthrocentesis, [1111](#)
- Arthrography, [1110](#)
  - of rotator cuff tears, [1154](#)
- Arthroplasty, [1124](#)
  - total hip, [1126–1129c](#), [1130–1133](#)
  - total knee, [1134](#)
- Arthropod-borne viruses, [2093](#)
- Arthroscopy, [1110–1111](#)
- Artificial larynx, [517](#)
- Arytenoid cartilages, [464](#)
- Ascites
  - assessment and diagnostic findings, [1373](#)
  - clinical manifestations, [1373](#)
  - medical management, [1373–1374](#)
    - bed rest, [1373](#)
    - nutritional therapy, [1373](#)
    - paracentesis, [1374](#)
    - pharmacologic therapy, [1373](#)
    - transjugular intrahepatic portosystemic shunt (TIPS), [1374](#)
  - nursing management, [1374–1375](#)
  - pathophysiology, [1372–1372f](#)
- ASCVD Risk Estimator Plus, [870](#)
- Ashkenazi Jewish descent, [133](#)
- *Aspergillus*, [328](#)
- Aspiration, [1244](#)

- fecal contamination and, 545
- pathophysiology, 545
- prevention, 545–546, 546c
  - compensating for absent reflexes, 545–546
  - delayed emptying of stomach, 546
  - feeding tube placement, 546
  - prolonged ET intubation or tracheostomy, management of, 546
- risk factors, 545c
- Aspiration pneumonia, 534, 545
- Aspirin, 406, 735, 1217
- Assessment
  - of abdomen, 671–672
  - of allergy, 1042–1044c
  - breast, 1709–1717
  - of cardiovascular system
    - diseases, 665t
    - health history, 657–664
    - physical assessment, 664–672
  - chest pain, 659t–660t
  - chronic obstructive pulmonary disease (COPD), 607c
  - comprehensive pain, 203–206
  - cultural, 91–94, 92c
  - dermatologic disorders, 1802–1812
  - of ear, 1936–1943
  - of endocrine system, 1446–1449
  - of eye, 1897–1903
  - family history, 134
  - of female reproductive system, 1641–1652
  - findings in common respiratory disorders, 484t
  - focused, 84
  - health history, 470–474
  - health of people with disability, 81c
  - hematologic diagnosis, 891–892
  - of liver, 1365–1370
  - of lungs, 671
  - of male reproductive system, 1744–1747
  - mental status, 178c
  - of nervous system, 1977–1984
  - of neutropenic fever in cancer patients, 356t
  - nutritional, 85–91, 86t, 87c, 89t

- pain, 84
- person's genetic and genomic health status, 134–136
- preferred language for assessing goals of care, 375c
- preoperative, 402
- pretransfusion, 900
- psychosocial, 136–136c
- psychosocial factors related to respiratory function and disease, 474c
- of skin and extremities, 664–665
- of stress, 104c
- symptoms at end-of-life, 376–377
- in teaching–learning process, 61
- Assisted living facilities, 177–178
- Assisted reproductive technologies, 1667–1668
- Assistive technology, 36
  - ambulating with, 44–45
  - nursing actions involved in using, 47t
- Association for Professionals in Infection Control and Epidemiology (APIC), 422
- Association of Rehabilitation Nursing (ARN), 36
- Asthma, 485t, 632
  - action plan, 640f
  - acute exacerbations of, 633
  - allergy and, 633
  - assessment, 633–634
  - clinical manifestations, 633
  - complications, 634
  - continuing/transitional care, 641–642
  - deaths from, 632
  - diagnostic findings, 633–634
  - exacerbations, management of, 639
  - home care checklist, 641c
  - immunoglobulin E (IgE), 633, 639
  - long-term medications for treatment, 635t–638t
  - medical management, 634
    - long-acting control medications, 639
    - pharmacologic treatment, 634
    - quick-relief medications, 634–635t
  - morbidity and mortality in, 633
  - nursing management, 641–642
  - pathophysiology, 632f, 633



- peak flow monitoring, 639–641, 641c
- prevention, 634
- promoting home/community-based/transitional care, 641
- quick-relief medications for treatment, 634–639, 635t
- smoking and, 633
- stepwise approach for managing, 632f
- Atelectasis, 466, 1178
  - acute, 527
  - assessment and diagnostic findings, 529
  - causes, 528
  - chronic, 527, 529
  - clinical manifestations, 529
  - consequences of, 528–529
  - goal of treatment, 530
  - management, 530
    - ICOUGH<sup>SM</sup> program, 530c
    - SVN treatments with bronchodilator, 530
  - obstructive, 528
  - pathophysiology, 528–529, 528f
  - in patients with chronic airway obstruction, 528
  - prevention, 529–530, 530c
    - incentive spirometry, 529c
- Atheromas, 726
- Atherosclerosis, 826–833
- Atrial natriuretic hormone (ANH), 101
- Atonic muscle, 1101
- Atopic dermatitis, 1057
- Atopic diseases, 1045
- Atopic march, 1057
- Atopy, 1039
- Atrial fibrillation, 699–702
  - abnormal impulse formation, 699
  - assessment and diagnostic findings, 700
  - cardiac rhythm therapies, 702
  - characteristics, 700
  - classification system, 699c
  - electrical cardioversion for, 701–702
  - left atrial appendage occlusion, 702–703
  - medical management
    - antithrombotic drugs, 700–701

- for cardioversion, 701
- for controlling heart rate, 701
- patterns, 699
- Wolff-Parkinson-White (WPW) syndrome, 703
- Atrial flutter
  - characteristics, 703
  - medical management, 703–704
  - signs and symptoms, 703
- Atrial natriuretic peptide (ANP), 232
- Atrioventricular (AV) node, 653
- Atrioventricular nodal reentry tachycardia, 704–705
- Atrioventricular valves, 653
- Atrophic vaginitis, 1678t
- Atrophy, 105, 1101
- Atypical hyperplasia, 1719
- Audiometry, 1941–1942
- Auditory brain stem response (ABR) audiometry, 1942
- Auditory changes, age-related, 175
- Augmentation mammoplasty, 1739
- Aural rehabilitation, 1958–1961
- Auricle, 1936
- Auscultation, 85, 1215–1216
- Auscultation procedure, 670
- Autografts, 774–775, 1164, 1882–1883
- Autoimmune disorders, 998
- Autoimmunity, 1068–1069
- Autologous blood donation, 898
- Autologous HSCT (AuHSCT), 977
- Autolytic débridement, 1817
- Autonomic nervous system, 1973
- Autonomic neuropathies, 1524–1524
- Autosomal dominant inheritance, 121–122, 122t
- Autosomal recessive inheritance, 122t, 123
- Autosomes, 119
- Avascular necrosis, 1124
- Avascular necrosis of bone (AVN), 1165
- Avoidance therapy, 1049
- Avulsion, 1158f
- Axon, 1967
- Azathioprine, 1308

- Azotemia, [1559](#)

## B

- Babinski reflex, [1966](#), [1984](#)
- Bacille Calmette–Guérin (BCG), [329](#), [1627](#)
- *Bacillus anthracis*, [2146](#)
- Baclofen, [2042](#), [2097](#)
- Bacteremia, [291](#), [536](#), [786](#), [1021](#), [1394](#), [1591](#), [2154](#), [2167](#)
  - definition of, [2154](#)
- Bacteria
  - carcinogenesis and, [304–305](#)
  - gram-negative, [336](#)
  - gram-positive, [336](#)
- Bacterial infection, biologic spectrum, [2149f](#)
- Bacterial peritonitis, cirrhosis and, [1394](#)
- Bacterial vaginosis, [1678–1679](#), [1678t](#), [1685](#)
  - clinical manifestations, [1679](#)
  - medical management, [1679](#)
  - risk factors, [1678](#)
- Bacteriuria, [1534](#), [1543t](#), [1548](#), [1599](#), [1604](#), [1606–1610](#)
- Bad breath. *See* Halitosis
- BAERs. *See* Brainstem auditory evoked responses
- BAHA. *See* Bone-anchored hearing aid
- BAL (bioartificial liver), [1393](#)
- Balanced suspension traction, [1174](#), [1174f](#)
- Ball-and-socket joints, [1100](#)
- Balloon sign test, [1107f](#)
- Balloon tamponade, for variceal bleeding, [1377–1379](#)
- Balloon valvuloplasty, [771](#), [771f](#), [772](#), [773](#), [775](#)
- Ballottement technique, [1107](#), [1107f](#)
- Bandages. *See also* Dressings
  - drainage-soaked, [446](#)
  - sterile gauze, [452](#)
- Band cells, [889](#)
- Bargaining, stages of grief, [384](#)
- Bariatric surgery, [914](#), [917](#), [1136](#), [1354](#)
  - and bile reflux, [1358](#)
  - bowel/gastric outlet obstruction after, [1359](#)
  - and dietary guidelines, [1358c](#)
  - dumping syndrome and, [1358–1359](#)

- and dysphagia, [1359](#)
- hemorrhage after, [1358](#)
- nursing process, [1355–1360](#)
  - anastomotic leaks and, [1357](#)
  - anxiety reduction, [1357](#)
  - assessment, [1355](#)
  - body image changes, [1357–1358](#)
  - bowel habits maintenance, [1358](#)
  - complications management, [1358–1359](#)
  - continuing and transitional care, [1360](#)
  - diagnosis, [1355](#)
  - dietary restrictions, [1355](#)
  - evaluation, [1360](#)
  - fluid volume balance, [1357](#)
  - infection prevention, [1355](#)
  - nursing interventions, [1355–1360](#)
  - nutritional status, [1357](#)
  - pain relief, [1355](#)
  - patient education, [1358](#)
  - planning and goals, [1355](#)
  - selection criteria for, [1354](#), [1354c](#)
  - type of procedures, [1354–1355](#), [1356f](#)
  - and venous thromboembolism, [1358](#)
- Baroreceptors, [232](#), [655](#)
- Barrel chest, [477](#), [606](#)
- Barrett esophagus (BE), [1257](#)
  - assessment and diagnostic findings, [1257](#)
  - clinical manifestations, [1257](#)
  - GERD and, [1257](#)
  - management, [1257](#)
- Barthel Index, [37](#), [2047](#)
- Bartholin cyst, [1676](#), [1691](#)
- Bartholin glands, [1641](#), [1677](#), [1698](#)
- Basal cell carcinoma (BCC), [1852–1855](#), [1853f](#)
- Basal ganglia, [1969](#), [1977](#), [2095–2096](#)
- Basal insulin, [1498](#), [1500](#)
- Basal metabolic rate, [107](#), [297](#), [749](#), [1451](#), [1453](#), [1474](#)
- Baseline body temperature, for older adults, [188](#)
- Basophils, [890](#), [989](#), [1039](#)
- Battery-powered pulse generator, [2125–2126](#)

- B cells. *See* B lymphocytes
- BCG Live, [1627](#)
- BE. *See* Barrett esophagus
- Beau lines, [1809](#)
- Beclomethasone, [1483t](#)
- Beclomethasone dipropionate, [617t](#), [635t](#)
- Bed rest
  - in ascites, [1373](#)
  - hepatitis A and, [1386–1387](#)
- Behavioral therapy, for urinary incontinence, [1613](#)
- Belatacept, [1598t](#)
- Belimumab, for systemic lupus erythematosus, [1084](#)
- Bell palsy, [2107t](#), [2108](#)
- Below-knee amputation (BKA), [1195](#)
- Benazepril, for hypertension, [872t](#)
- Beneficence, [25c](#)
- Benign bone tumors, [1145–1146](#)
- Benign, definition of, [303](#), [304](#)
- Benign paroxysmal positional vertigo, [1954–1957](#)
- Benign proliferative breast disease, [1708](#), [1719](#)
  - atypical hyperplasia, [1719](#)
  - lobular carcinoma in situ, [1719](#)
- Benign prostatic hyperplasia (BPH), [1540](#), [1541t](#), [1753–1755](#). *See also* Prostate surgery
  - assessment and diagnostic findings, [1754](#)
  - clinical manifestations, [1754](#)
  - medical management, [1754–1755](#)
  - minimally invasive therapy, [1755](#)
  - pathophysiology, [1753–1754](#)
  - pharmacologic treatment, [1754](#)
  - surgical resection of prostate gland, [1755](#)
- Benign skin tumors
  - actinic keratoses, [1851–1852](#)
  - angiomas, [1852](#)
  - cysts, [1851](#)
  - dermatofibroma, [1852](#)
  - keloids, [1852](#)
  - moles, [1852](#)
  - seborrheic keratoses, [1851–1852](#)
  - Von Recklinghausen disease, [1852](#)

- warts, [1852](#)
- Benson relaxation response, [65](#), [111](#), [112](#), [112c](#)
- Benzodiazepines, [214](#), [281](#), [1381](#), [1382](#), [1733](#), [1884](#), [2017](#)
  - for alcohol withdrawal syndrome, [2210](#)
- Benzphetamine, for obesity, [1350t](#)
- Bereavement
  - definition of, [384](#), [385](#)
  - loss and, [385](#)
- Beta-adrenergic blockers, [2095](#)
- Beta<sub>2</sub>-agonists, [616](#)
  - long-acting, [616](#)
  - short-acting, [616](#)
- Beta-blockers
  - for heart failure, [799t](#), [800](#)
  - for hypertension, [880](#)
  - for hyperthyroidism, [1464t](#), [1465](#)
  - for pheochromocytoma, [1476](#)
  - for variceal bleeding, [1377](#)
- Beta cells, [1447](#)
- Beta-human chorionic gonadotropin (beta-hCG), [1771](#)
- Betamethasone, [1483t](#)
- Beta-2 microglobulin, [975](#)
- Betaxolol, for hypertension, [873t](#)
- Bethanechol
  - for GERD, [1258t](#)
  - for neurogenic bladder, [1617](#)
- Bicarbonate deficit, [1556t](#)
- Bicarbonate excess, [1556t](#)
- Biceps reflex, [1982](#)
- Bilateral pelvic lymphadenectomy, for cervical cancer, [1696c](#)
- Bile, [1365](#), [1417](#)
  - formation, [1366](#)
- Bile acid sequestrants, [731t](#)
- Bile reflux
  - bariatric surgery and, [1359](#)
  - gastric surgery and, [1281](#)
- Bilevel positive airway pressure (BiPAP), [511](#)
- Biliary cirrhosis, [1399](#). *See also* Cirrhosis
- Biliary colic, gallstone and, [1420](#)
- Biliary disorders, [1416–1443](#)

- Biliopancreatic diversion with duodenal switch, 1354
- Bilirubin, 1366, 1417
  - excretion of, 1366
- Billroth I procedure, 1274t, 1278–1279
- Billroth II procedure, 1275t, 1278–1279
- Bimanual palpation, 1651
- Binocular vision, 1896, 1917, 1924
- Bioavailability, 1367
- Biochemical assessment, 88
- Biochemical mediators, 281, 290, 329
- Biofeedback, 111, 1289, 1292
- Biologic response modifier (BRM). *See also* Immunomodulators
  - monoclonal antibodies, 330–331
  - nonspecific, 329–330
- Biologic therapies
  - for inflammatory bowel disease, 1305
  - for psoriasis, 1821
- Biomarkers, cardiac, 672
- Bioprostheses, 774
- Biopsy
  - bone, 1111
  - liver, 1369
  - lung, 492
  - skin, 1813
  - types of
    - core needle aspiration, 313
    - excisional, 313
    - fine-needle aspiration, 313
    - incisional, 313
    - needle, 313
    - sentinel lymph node, 313
- Biot's respiration patterns, 477, 479t
- Birds, reservoir for virus, 2174
- Bisacodyl, 1290t
- Bismuth subsalicylate, for gastritis, 1269t
- Bisoprolol
  - for heart failure, 800t
  - for hypertension, 873t
- Bisphosphonates, in Paget disease, 1141
- Bites

- animal, [2200](#)
- mosquito, [2200–2202](#)
- spiders, [2202](#)
- tick, [2202](#)
- Black widow spider bites, [2202](#)
- Bladder cancer, [1626–1627](#)
  - assessment and diagnostic findings, [1626–1627](#)
  - clinical manifestations, [1626](#)
  - pharmacologic therapy, [1627](#)
  - radiation therapy, [1627](#)
  - risk factors, [1626c](#)
  - surgical management, [1627](#)
- Bladder compliance, [1540](#)
- Bladder distention, [454](#), [671–672](#)
- Bladder emptying, [1540](#)
- Bladder retraining, [1614c](#)
- Bladder training, [1998](#), [2084](#)
- Bladder trauma, [1625–1626](#)
- Bladder ultrasonography, [1545](#), [1549](#)
- Blast cells, [889](#), [950](#)
- Blast injury, explosive devices, types of, [2057](#)
- Bleeding, after liver transplantation, [1409–1410](#)
- Bleeding disorders, [930](#)
  - clinical manifestations, [931](#), [931f](#)
  - medical management, [931](#)
  - nursing management, [931–932](#)
  - risk factors, [931c](#)
- Bleomycin, [321t](#), [324](#)
- Blindness, [1896](#), [1907](#)
  - definition, [1896](#)
- Blistering diseases, [1846–1847](#)
  - bullous pemphigoid, [1846](#)
  - care of patient with, [1847–1848](#)
  - dermatitis herpetiformis, [1847](#)
  - pemphigus vulgaris, [1846](#)
  - Stevens-Johnson syndrome, [1848–1851](#)
  - toxic epidermal necrolysis, [1848–1851](#)
- Blood, [885–890](#)
  - cells, [887–890](#)
    - erythrocytes (red blood cells), [887](#)



- leukocytes (white blood cells), 889–890
- platelets (thrombocytes), 890
- exposure to, 432
- function of, 889–890
- plasma and plasma proteins, 890
- Blood-brain barrier (BBR), 332, 424, 1050, 1393, 1971, 2012, 2089–2091, 2093, 2095, 2117
- Blood donation, 897–898
  - autologous donation, 898
  - blood processing after, 899
  - complications of, 899
  - directed donations, 898
  - hemodilution, 898–899
  - intraoperative blood salvage, 898
  - standard donation, 898
- Blood flow, 820
- Blood gas
  - analysis, 264
  - assessment of, 265c
  - measurements, 607
- Blood glucose monitoring, 1480
- Blood pressure, 865
  - autoregulation of, 1539
  - intra-arterial monitoring, 684, 686–687
  - measurement of, 870
  - postural changes, 664
  - systemic arterial, 665
- Blood transfusion. *See* Transfusion
- Blood urea nitrogen (BUN)
  - hypovolemia and, 233
  - laboratory testing, 230
  - reference range, 673t
- Blunt trauma, 1625, 2193
  - assessment, 590
  - diagnostic findings, 590
  - medical management, 590
  - pathophysiology, 589–590
- B lymphocytes, 885, 889, 930, 958, 992
  - role of, 1039
- BMI. *See* Body mass index

- BNP. *See* Brain natriuretic peptide
- Body fluids
  - amount of, 225–226
  - composition of, 225–226
  - exposure to, 423–424
  - gains and losses, routes of, 228–229, 228t
  - regulation of, 226–227
  - status of, evaluation of, 229–230
- Body mass index (BMI), 65, 71, 81, 86–88, 158, 177, 319, 400, 518, 696, 730, 1080, 1089, 1134, 1311, 1345, 1347t
  - calculation of, 86t
  - definition of, 71
  - nutritional assessment and, 85–86
- Body temperature, maintenance of, 762
- Boerhaave syndrome, 1255, 1256
- Bolus feedings, 1245, 1247, 1885
- Bone-anchored hearing aid (BAHA), 1960
- Bone densitometry, 1110
- Bone integrity, assessment of, 1106–1107
- Bone marrow, 885–891, 894, 895f
  - aspiration and biopsy, 894–895, 895f
  - failure, 916
- Bone mineral density (BMD), 130, 934, 1085
- Bones, 1104
  - blood supply, 1124
  - cells, 1098
  - flat, 1098
  - formation, 1098
  - healing, 1099
  - irregular, 1097
  - long, 1097, 1097f
  - maintenance, 1098–1099
  - periosteum, 1098
  - resorption, 1098
  - short, 1097
- Bone scan, 1110
  - and blood studies, 1114c
- Bone tumors, 1145–1148, 1148c
  - assessment and diagnostic findings, 1146–1147
  - benign, 1145–1146

- clinical manifestations, 1146
- malignant, 1146
- medical management, 1147
- metastatic, 1146
- nursing management, 1147–1148
- pathophysiology, 1146
- Borderline tumors, 1701
- Bortezomib, 977
- Botulinum toxin injections
  - in achalasia, 1254
  - in anal fissures, 1334–1335
- Bowel function, promotion of, 454
- Bowel habits, change in, 1214
- Bowel preparation, preoperative, 398
- Bowel training programs, 1292
- Bowman capsule, 1536
- Boxer's fracture, 1181
- BPH. *See* Benign prostatic hyperplasia
- Braces, 1123, 1167–1168
  - home care checklist, 1170c
  - immobilized lower extremity, 1171
  - immobilized upper extremity, 1170–1171
  - nursing management of patient, 1171
- Brachial plexus block, 429
- Brachioradialis reflex, 1983
- Brachytherapy, 1676, 1697, 1700, 1731
  - for breast cancer, 1731
  - for cervical cancer, 1697
  - definition of, 301
  - delivery of, 317
  - high-dose radiation, 317
  - interstitial implants, 317
  - low-dose radiation, 317
  - for prostate cancer, 1756, 1760
  - for vaginal cancers, 1700
- Bracketing, 12
- Bradykinesia, 2112, 2123
- Bradykinin, 633, 1038
- Bradypnea patterns, 479t
- Brain

- abscesses, [2091–2092](#)
- anatomy of, [1994](#), [2033](#)
- arterial blood supply, [1970](#)
- circulation, [1970–1971](#)
- protection of, [1969](#)
- Brain death
  - definition of, [1977](#)
  - description, [1977](#)
- Brain Injury Association of America, [2066](#)
- Brain natriuretic peptide (BNP), [232](#), [572](#), [921](#)
- Brain stem, [1957](#)
- Brainstem auditory evoked responses (BAERs), [1990](#)
- Brain tumors, [2113c](#)
  - classification of, [2113c](#)
  - sites, [2115f](#)
- Branch retinal vein occlusion (BRVO), [1922](#)
- Bravo pH monitoring system, [1225](#)
- *BRCA1* and *BRCA2*, [1700](#), [1708](#)
- Breakthrough pain (BTP), [198](#)
- Breast, [1709](#)
  - anatomy of, [1709](#), [1710f](#)
  - assessment, [1709–1712](#)
    - health history, [1709](#)
    - physical assessment, [1709–1712](#)
  - diagnostic evaluation, [1712](#)
    - breast self-examination, [1712–1713](#), [1714c](#)
    - contrast mammography, [1713](#)
    - magnetic resonance imaging, [1715](#)
    - mammography, [1713](#), [1715f](#)
    - ultrasonography, [1713–1715](#)
  - female breast examination, [1709–1712](#)
    - abnormal breast findings on inspection, [1710](#), [1711c](#)
    - inspection, [1710](#)
    - palpation, [1710–1712](#)
  - lymphatic drainage of, [1722f](#)
  - male breast examination, [1712–1713](#)
  - obesity on, effect of, [1712](#)
  - percutaneous biopsy, [1715](#), [1715t](#)
    - core needle biopsy, [1716](#)
    - fine-needle aspiration, [1716](#)

- MRI-guided core biopsy, 1716
- stereotactic core biopsy, 1716
- ultrasound-guided core biopsy, 1716
- prosthesis, 1737
- reconstruction, 1735–1736
  - latissimus dorsi flap, 1736f
  - nipple–areola reconstruction, 1737
  - with tissue expander, 1735, 1736f
  - TRAM flap, 1736, 1736f
- surgical biopsy, 1716
  - excisional biopsy, 1716
  - incisional biopsy, 1716
  - nursing management, 1718
  - wire needle localization, 1716
- tail of Spence, 1709, 1710f
- Tanner stages of development, 1709
- Breast cancer, 122, 125, 129t, 1719
  - adjuvant chemotherapy for, 1731–1732
    - chemotherapy regimens, 1732
    - dose-dense chemotherapy, 1732
    - hematopoietic growth factors, self-administration of, 1733c
    - indications for, 1732t
    - nursing management, 1732, 1732t
    - side effects of, 1732
  - assessment and diagnostic findings, 1722
  - clinical manifestations, 1722
  - ductal carcinoma in situ, 1719
  - genetic testing, implications of, 1737
  - hormonal therapy for, 1733–1734
  - incidence of, 1719
  - invasive cancer, 1720
    - infiltrating ductal carcinoma, 1720
    - infiltrating lobular carcinoma, 1720
    - inflammatory carcinoma, 1720
    - medullary carcinoma, 1720
    - mucinous carcinoma, 1720
    - Paget disease, 1720
    - tubular ductal carcinoma, 1720
  - in men, 1739
  - nursing process, 1723–1725

- assessment, 1725
- body image, positive, 1726
- diagnosis, 1725
- evaluation, 1730
- hematoma formation and, 1727–1728
- infection and, 1728
- lymphedema and, 1726–1727
- pain management, 1725–1726
- patient preparation, 1725
- planning and goals, 1725
- positive adjustment and coping, 1726
- postoperative nursing interventions, 1726–1730
- postoperative sensations and, 1726
- preoperative nursing interventions, 1725
- sexual function, improving, 1728
- in older women, 1738
- patient education
  - drainage management at home, 1728c
  - exercise after breast surgery, 1729c
  - home care checklist, 1728c
- pregnancy and, 1727–1738
- prevention strategies, 1721
  - chemoprevention, 1721
  - long-term surveillance, 1721
  - prophylactic mastectomy, 1722
- prognosis, 1722–1723, 1723c
- protective factors, 1720
- quality of life and survivorship, 1738
- radiation therapy for, 1730–1731
  - breast-conservation treatment and, 1731c
  - nursing management, 1731
  - side effects of, 1731
- reconstructive surgery after mastectomy, 1737
- recurrent and metastatic, treatment of, 1735
- risk factors for, 1720, 1721t
- staging, 1722
- surgical management, 1723, 1723t
  - breast conservation treatment, 1723
  - modified radical mastectomy, 1723
  - sentinel lymph node biopsy, 1723

- total mastectomy, 1723
- targeted therapies for, 1734
- women with disability and, 1738–1739
- Breast conservation treatment, 1723
- Breast disorders, 1709
  - benign proliferative breast disease, 1719
    - atypical hyperplasia, 1719
    - lobular carcinoma in situ, 1719
  - breast masses, 1718t
  - breast pain, 1718
  - cancer of breast, 1719–1739 (*See also* Breast cancer)
  - cystosarcoma phyllodes, 1719
  - cysts, 1718
  - fat necrosis, 1719
  - fibroadenomas, 1718t, 1719
  - fissure, 1717
  - intraductal papilloma, 1719
  - lactational abscess, 1717–1718
  - mastitis, 1717
  - nipple discharge, 1717
  - superficial thrombophlebitis of breast, 1719
- Breast reconstruction surgery. *See* Mammoplasty
- Breast self-examination (BSE), 1712–1713, 1714c
- Breathing
  - airway patency and, 1872
  - assessment of, 470–483
  - ataxic, 479t
  - deep, 418
  - diaphragmatic, 409c
  - exercises, 645
  - patterns, 477
  - retraining, 616
- Breath sounds, 482, 482t
- Breath tests, 1217
- Brentuximab vedotin, 974
- Bristol Stool Form Scale (BSFS), 1294f
- Bromocriptine, 1667c
- Bronchi, anatomy, 472
- Bronchiectasis, 631
  - assessment/diagnostic findings, 631

- clinical manifestations, 631
- cystic fibrosis (CF), 603
- medical management, 631
- nursing management, 643
- pathophysiology, 631
- Bronchioles, anatomy, 465
- Bronchitis, 484t
- Bronchoconstriction, 565, 1872
- Bronchodilators, 607, 614
- Bronchophony, 462, 482
- Bronchoplastic resection, 581c
- Bronchopulmonary infections, 621c, 629
- Bronchoscopic lung volume reduction therapies, 618
- Bronchoscopy
  - complications of, 491
  - definition of, 462
  - endoscopic, 490, 490f
  - nursing interventions, 490
  - procedure, 490–491
- Bronchospasm, airway clearance, 614
- Brown recluse spider bites, 2202
- Brudzinski sign, 2089
- Bruit, 820
- Brush biopsy, 1552
- Brushing, teeth, 1232
- BRVO. *See* Branch retinal vein occlusion
- BSE. *See* Breast self-examination
- BSFS. *See* Bristol Stool Form Scale
- B-type natriuretic peptide (BNP), 795
- Buck's extension traction, 1174–1175, 1174f
- Budd–Chiari syndrome, 1380
- Budesonide, 500t, 617t, 635t, 637t
- Bulbar paralysis, 2105, 2107t
- Bullae, 1815, 1835, 1846, 2200
- Bullectomy, 618
- Bullous impetigo, 1835
- Bullous pemphigoid, 1846–1847
- Bumetanide (Bumex), for hypertension, 873t
- BUN. *See* Blood urea nitrogen
- Bundle of His, 691, 692f



- Bundles, of care, 9
- Bupivacaine, 207, 217, 429t
- Bupropion, 181, 608
- Buried bumper syndrome, 1251
- Burn care, 1873t
- Burn centers, 1868c
- Burns
  - acute/intermediate phase, 1876
  - age, 1867
  - complications, 1888t
  - depth of, 1867–1868
  - electrical, 1870c
  - extent of, 1868–1869
  - first-degree, 1867–1868
  - fourth-degree, 1868, 1868f
  - home care checklist, 1891c
  - incidence, 1865–1866
  - infection prevention, 1876
  - management of, 1865–1892
  - memories of pain after, 1884
  - ocular, 1908
  - outpatient care, 1891
  - overview, 1865–1873
  - pain management, 1883–1884
  - pathophysiology, 1869–1873
  - prevention of, 1866–1867, 1866c
  - rehabilitation, 1887
  - second-degree, 1867–1868
  - severity, 1867–1869
  - shock and, 1870
  - supporting patient and family processes, 1886
  - survival and recovery, outlook for, 1867
  - third-degree, 1868, 1868f
  - topical antibacterial therapy for, 1880
  - wound cleaning, 1880
  - wound dressing, 1880–1881
- Bursa, 1100
- Bursitis, 1113, 1117
- Busulfan, 321t, 324
- Butane honey oil (BHO), 2205

## C

- CAGE (Cutting down, Annoyance by criticism, Guilty feeling, and Eye-openers), [80](#)
- Calcitonin, [1453](#)
- Calcium alginates, [1818](#)
- Calcium channel blockers, [734–735](#), [844](#)
  - for hypertension, [871–872t](#)
- Calcium channel blocking anticonvulsants, [201](#)
- Calcium imbalances, [247–251](#), [248t](#)
  - hypercalcemia, [250–251](#)
  - hypocalcemia, [248–250](#)
- Calcium level
  - calculating corrected serum, [249c](#)
  - in kidney disease, [1570–1571](#)
  - normal adult total serum, [247–248](#)
  - normal ionized, [248](#)
- Calcium stones, [1622](#)
- Calculous cholecystitis, [1418](#)
- Calicivirus, [2165](#)
- Call for Action—Nurses Lead and Transform Palliative Care, [369](#)
- Callus, [1120](#)
- Caloric distribution
  - carbohydrates, [1494](#)
  - fats, [1494](#)
  - fiber, [1494](#)
  - protein, [1494](#)
- Caloric requirements, in diabetes, [1494](#)
- Campylobacter infections, [2165](#)
- Canavan disease, [133](#)
- Cancellous bone, [1097](#)
- Cancer
  - alopecia and, [318](#), [349](#)
  - assessment of neutropenic fever in patients, [356t](#)
  - bacteria and, [304](#)
  - benign (noncancerous) and malignant (cancerous) cells, [303–303t](#)
  - biopsy methods
    - excisional, [313](#)
    - fine-needle aspiration (FNA), [313](#)
    - incisional, [313](#)
    - needle, [313](#)

- sentinel lymph node biopsy (SLNB), 313
- of bladder, 1626–1627
- body image, improvement of, 354
- breast, 354c, 1720–1739
  - clinical manifestations, 1722
  - diagnosis, 1722
  - genetic testing, 1737
  - male, 1740
  - nursing management, 1723–1725, 1731–1733, 1735
  - pregnancy and, 1737–1738
  - prevention strategies, 1721–1722
  - prognosis, 1722–1723, 1723c
  - radiation therapy, 1730–1731
  - staging, 1722
  - surgery, 1723, 1725–1730
  - systemic treatments, 1731–1735
  - types, 1719–1720
- care in oncologic emergencies, 360–363, 360t–362t
- care trajectory, 302f
- of cervix
  - assessment and diagnostic findings, 1696
  - clinical manifestations, 1695–1696
  - medical management, 1696–1697
- chemotherapy, 319–326
- chimeric antigen receptor (CAR) T-cell therapy, 332
- complementary approaches to, 335
- complications in
  - infection, 355–357
  - septic shock, 357
  - thrombocytopenia, 357
- COVID-19 considerations, 335–336, 2227
- degree of anaplasia, 303–304
- diagnostic evaluation, 309–312, 310t–311t
- DNA viruses and, 304
- epidemiology of, 302–303
- of esophagus
  - assessment and diagnostic findings, 1261
  - clinical manifestations, 1260–1261
  - medical management, 1261
  - nursing management, 1261–1263

- pathophysiology, 1260
- of fallopian tubes, 1700
- fatigue in, 352–352c
- gastric, 1277–1283
  - assessment and diagnostic findings, 1278
  - chemotherapy, 1279
  - clinical manifestations, 1278
  - complications in, 1279
  - gerontologic considerations, 1280
  - home care checklist, 1282
  - medical management, 1278–1280
  - nursing process, 1280–1283
  - pathophysiology, 1278
  - prognosis for patients with, 1278
  - radiation therapy, 1279–1280
  - risk factors, 1278
  - surgical management, 1278–1279
  - targeted therapies, 1279
  - uncertainty and care needs in, 1282c
- genetic mutations, 303
- genetics concepts and oncologic disorders, 305c
- grief, assistance during, 354–355
- health disparities, 303
- hematopoietic stem cell transplantation for, 326–329
  - allogenic, 326–327
  - autologous, 328
  - care after treatment, 329
  - nursing management, 328–329
- immune system and, 307–308
- immunotherapy, 329–332, 996
- incidence and death rates, 303
- integrative health care, 335
- of larynx, 514
  - assessment and diagnostic findings, 515
  - classification, 515
  - clinical manifestations, 515
  - goals of treatment, 515
  - medical management, 515–517
  - prognosis, 515
  - radiation therapy, 517

- risk factors, 514c
- speech therapy, 517
- surgical management, 515–517
- of liver
  - liver metastases, 1405–1407
  - primary liver tumors, 1404–1405
- lung
  - assessment and diagnostic findings, 579–580
  - chemotherapy, 587
  - classification and staging, 577–578
  - clinical manifestations, 579
  - complications, 587–588
  - immunotherapy, 587
  - medical management, 580
  - nursing management, 580–585, 588
  - palliative care, 587
  - pathophysiology, 577
  - radiation therapy, 585
  - risk factors, 578–579
  - surgical management, 580
- nursing care of patients, 337c–350c
- nutrition and physical activity for prevention of, 309c
- nutrition management, 350–351
- of oral cavity and pharynx
  - assessment and diagnostic findings, 1236
  - clinical manifestations, 1235
  - HPV vaccine, 1236
  - medical management, 1236
  - nursing management, 1236
  - pathophysiology, 1235
- of ovary, 1700–1702
  - assessment and diagnostic findings, 1701
  - clinical manifestations, 1701
  - epidemiology, 1700–1701
  - medical management, 1701–1702
  - nursing management, 1702
  - pathophysiology, 1701
  - pharmacologic therapy, 1701–1702
  - stages, 1701c
- pain in, 351–352, 352t

- of pancreas, 1438–1440
  - assessment and diagnostic findings, 1439
  - clinical manifestations, 1439
  - medical management, 1439–1440
  - nursing management, 1440
- pathophysiology of, 303–308
- of penis, 1775–1776
- preparing patients for self-care, 357–358c
- prevalence in older adults, 358–359, 359t
- primary prevention, 308
- of prostate
  - clinical manifestations, 1755
  - diagnosis, 1755–1756
  - medical management, 1756–1769
- psychosocial distress management, 355
- radiation therapy, 315–319
  - brachytherapy, 317–318
  - dosage, 316–317
  - external, 317
  - GammaKnife™, 317
  - high-dose radiation (HDR), 317–318
  - image-guided (IGRT), 317
  - intensity-modulated (IMRT), 317
  - internal, 317–318
  - ionizing, 316
  - low-dose radiation (LDR), 317–318
  - nursing management, 318–319
  - protecting caregivers, 319
  - proton therapy, 317
  - systemic, 318
  - systemic side effects, 318
  - toxicity associated with, 318
- renal, 1562–1564
- risk evaluation, 308
- role of genetics in, 308
- secondary prevention, 308
- sexuality-based issues, 354
- skin, 1853c
- skin lesions in, 350
- suppressor T lymphocytes, overexpression of, 308

- surgical management, 312–315
  - mastectomy, 314
  - nursing management, 315
  - palliative, 314–315, 315t
  - prophylactic or risk reduction, 314
  - reconstructive, 315
  - salvage, 313–314
- survivorship, 359–360, 359t
- targeted therapies, 332–335
- tertiary prevention, 309
- testicular, 1771–1774
- thyroid, 1467–1470
- tissue integrity, maintaining, 336–350
  - by tissue of origin, 306t
- TNM classification system, 312c
- tumor-associated antigens (TAAs) and, 308
- tumor staging and grading, 309–312
- of uterus (endometrium), 1697–1698
- of vagina, 1700
- of vulva, 1698–1700
  - clinical manifestations, 1698
  - home, community-based, and transitional care, 1699–1700
  - medical management, 1698
  - nursing management, 1698–1700
  - postoperative care, 1698–1699
- Cancer-related anorexia-cachexia syndrome (CACS), 350–351
- *Candida auris*, 2155
- *Candida* (yeast) infection, 328
- Candidiasis, 1022, 1230t, 1678t
  - clinical manifestations, 1677–1678
  - medical management, 1678
- Cannabidiol (CBD), 80
- Cannulated screw fixation, 1185f
- Capillaries, 819
- Capillary filtration and reabsorption, 820
- Capsule colonoscopy, 1223
- Carbon dioxide transport, 470
- Carbonic acid deficit, 263
- Carbonic acid excess, 262–263
- Carbon monoxide poisoning, 2203–2204

- Carboplatin, [1701](#)
- Carboxyhemoglobin, [1872](#)
- Carbuncles, [1836](#)
- Carcinogenesis
  - chemical agents, [305–306](#)
  - etiology, [304–307](#)
  - genetics/familial factors and, [306–307](#)
  - hormonal agents, [307](#)
  - life style factors, [307](#)
  - molecular process, [304](#)
    - during progression, [304](#)
    - during promotion, [304](#)
  - physical factors, [304–305](#)
- Carcinogens, [304](#)
- Cardiac action potential, [654](#)
- Cardiac arrest, [1047](#)
  - clinical manifestations, [813](#)
- Cardiac autonomic nervous systems (CANS), [699](#)
- Cardiac biomarker analysis, [672](#)
- Cardiac catheterization, [681–683](#)
  - left heart, [681–682](#)
  - nursing responsibilities, [682–683](#)
  - right heart, [681](#)
  - self-management, [683c](#)
- Cardiac conduction system, [653](#)
- Cardiac cycle, [655](#)
- Cardiac electrophysiology, [653–655](#)
- Cardiac hemodynamics, [655–656](#)
- Cardiac implantable electronic devices, [676](#)
- Cardiac muscle cells, [777](#)
- Cardiac output, [275](#), [759–760](#)
  - heart rate, effect of, [655](#)
  - stroke volume, effect of, [655–656](#)
- Cardiac rehabilitation, [741](#)
- Cardiac resynchronization therapy (CRT), [778](#), [804](#)
- Cardiac rhythm therapies, [702](#)
- Cardiac sphincter, [1252](#)
- Cardiac stress testing, [677–678](#)
- Cardiac surgery, [751t–752t](#)
  - care of patient after, [755–758](#)



- home care checklist, 763c
- intraoperative management, 753
- nursing care, 755c–758c
- patient assessment, 754, 759
- postoperative care, 753–763
  - adequate gas exchange, ensuring, 760
  - cardiac output, ensuring, 760
  - fluid and electrolyte balance, promotion, 760
  - monitoring of complications, 759–760
  - pain control, 761
  - risk of delirium, 760–761c
  - self-care management, 762–763
  - tissue perfusion, maintenance, 761–762
- Cardiac tamponade, 597, 811–812
- Cardiogenic shock, 811
  - antiarrhythmic medications for, 289
  - assessment and diagnostic findings, 288
  - clinical manifestations, 287
  - diuretics for, 289
  - dobutamine therapy, 288
  - dopamine therapy, 289
  - fluid administration in, 288, 290
  - hemodynamic monitoring in, 288, 290
  - intra-aortic balloon counterpulsation in, maintaining, 289f, 290
  - IV nitroglycerin therapy, 289
  - mechanical assistive devices in, 289
  - medical management, 288
  - nursing management, 289–290
  - oxygenation in, 288
  - pain control, 288
  - pathophysiology, 287–287f
  - safety and comfort in, 290
  - vasoactive agents for, 289
  - vasoactive medication therapy, 288
- Cardiomyopathy
  - arrhythmogenic right ventricular cardiomyopathy/dysplasia, 778
  - assessment and diagnostic findings, 778
  - congestive heart failure, 777f
  - dilated, 776
  - home care checklist, 784

- hypertrophic, 776–777
- medical management, 778
- nursing process, 782–784
- pathophysiology, 775–778
- restrictive, 777–778
- surgical management, 778–782
  - heart transplantation, 779–780, 779f
  - left ventricular outflow tract surgery, 779
  - total artificial hearts, 782
- unclassified, 778
- ventricular assist devices, 780–781
- Cardiopulmonary bypass (CPB) system, 289, 749–750, 762
- Cardiopulmonary resuscitation (CPR), 297, 813, 1047
  - follow-up monitoring and care, 815
  - medications used, 814t
- Cardiovascular alterations, in burn injury, 1870–1871
- Cardiovascular disorders, 661c
- Cardiovascular effects of shock, 279
- Cardiovascular status, in surgical intervention, 404–405
- Cardiovascular system
  - assessment
    - health history, 657–664
    - physical, 664–672
  - diagnostic studies of conditions
    - cardiac catheterization, 681–683
    - cardiac stress testing, 677–678
    - chest x-ray, 674
    - CT scanning, 679
    - echocardiography, 680–681
    - electrocardiography, 674–677
    - electrophysiology study (EPS), 683
    - fluoroscopy, 674
    - hemodynamic monitoring, 683–688
    - laboratory tests, 672–674
    - MRA, 679–680
    - radionuclide imaging, 678–679
- Cardioversion, 712–713, 713c
  - electrical, 713–714
- Carpal tunnel syndrome, 1118
- Carriers, 123

- testing, [127t](#)
- Cartilage, [1097](#)
- Cartilaginous rings, [464](#)
- Cascade screening, [126](#), [130](#)
- Case management, [35](#)
- Case managers, [35](#), [53](#)
- Casts, [1166](#)
  - fiberglass, [1166–1167](#)
  - hip spica, [1166](#)
  - long arm, [1166](#)
  - long leg, [1166](#)
  - plaster, [1167](#)
  - short arm, [1166](#)
  - short leg, [1166](#)
  - shoulder spica, [1166](#)
  - walking, [1166](#)
- Cataracts
  - assessment and diagnostic findings, [1915](#)
  - clinical manifestations, [1915](#)
  - medical management, [1915–1917](#)
  - nursing management, [1917–1918](#)
  - pathophysiology, [1914](#)
  - risk factors, [1915c](#)
- Catechexia
  - at end-of-life, [380–380t](#)
- Catecholamines, [100](#)
- Catheter ablation therapy, [702](#)
- Catheter-associated urinary tract infections (CAUTI), [414](#), [1605–1606](#), [1618](#)
- Catheterization, [1617](#)
- Ceiling effect, [211](#)
- Celiac disease
  - assessment and diagnostic findings, [1296](#)
  - clinical manifestations, [1296](#)
  - medical management, [1297](#)
  - nursing management, [1297](#)
  - pathophysiology, [1295–1296](#)
- Cell cycle, [316f](#), [319](#)
- Cell cycle–specific agents, [319](#)
- Cell division, [120](#)

- Cellular adaptation, [105–106](#)
- Cellular effects of shock, [274–275f](#)
- Cellular healing, [109](#)
- Cellular immune response, [993](#)
- Cellular injury, [106–108](#)
- Cellular response to injury, [108–109](#)
- Cellulitis
  - clinical manifestations, [861](#)
  - medical management, [861](#)
  - nursing management, [861–862](#)
  - pathophysiology, [861](#)
- Centers for Disease Control and Prevention (CDC), [79](#), [159](#)
- Centers for Medicare and Medicaid Services (CMS), [399](#)
- Center to Advance Palliative Care (CAPC), [371](#)
- Central retinal artery occlusion, [1922](#)
- Central cord syndrome, [2071c](#)
- Central cyanosis, [529](#)
- Central line–associated bloodstream infections (CLABSI), [283–284c](#), [414](#), [1315](#), [2155](#)
- Central retinal vein occlusions (CRVOs), [1921–1922](#)
- Central sensitization, [202](#)
- Central venous access devices (CVADs), [1314](#)
- Central venous pressure (CVP), [278](#), [283](#)
- Cerebellum, [1969](#)
- Cerebral angiography, [1987–1988](#)
- Cerebral circulation, [1970](#)
- Cerebral hypoxia, [2049](#)
- Cerebral metastases, [2118](#)
- Cerebrospinal fluid (CSF), [1970](#), [2004](#)
- Cerebrum, [1968–1969](#)
- Certified registered nurse anesthetist (CRNA), [399](#), [417](#), [420](#), [430](#), [438–439](#)
- Certolizumab, [1308](#)
- Cerumen impaction, [1946–1947](#)
- Cervical biopsy, [1653](#)
- Cervical cap, [1662](#)
- Cervical palpation, [1651](#)
- Cervicitis, [1678t](#)
- Cetirizine, [500](#)
- Chancre, [1230t](#)

- Cheilitis, [1834](#)
- Chelation therapy, [964–965](#)
- Chemical agents, [107](#)
- Chemical burns, [2204](#)
  - of esophagus, [1256–1257](#)
- Chemical mediators, [1040](#)
  - bradykinin, [1041](#)
  - eosinophil chemotactic factor of anaphylaxis, [1041](#)
  - histamine, [1040–1040t](#)
  - of hypersensitivity, [1040t](#)
  - leukotrienes, [1041](#)
  - platelet-activating factor, [1041](#)
  - prostaglandins, [1041](#)
  - serotonin, [1041](#)
- Chemical weapons, [2234–2237](#)
- Chemoradiation (CRT), [1236](#)
- Chemoreceptors, [275](#)
- Chemotherapy, [319–326](#), [2117](#)
  - administration of
    - dosage, [320](#)
    - extravasation range, [320](#)
    - hypersensitivity reactions (HSRs), [320–322](#)
  - for AIDS-related peripheral or systemic lymphoma, [1025](#)
  - antineoplastic agents, [321t](#)
  - for bladder cancer, [1627](#)
  - for breast cancer, [1731–1732](#), [1732t](#)
  - chemotherapeutic agents, [319–320](#)
  - cognitive changes, management of, [326](#)
  - fatigue, management of, [326](#)
  - gastric cancer, [1279](#)
  - for KS, [1025](#)
  - liver cancer, [1405–1406](#)
  - for lung cancer, [587](#)
  - for multiple myeloma, [978t](#)
  - nursing management, [325–326](#)
  - for ovarian cancer, [1701](#)
  - protecting caregivers, [326](#)
  - safety of healthcare providers, [327c](#)
  - toxicity associated with
    - cardiopulmonary system, [323–324](#)

- cognitive impairment, 324
- fatigue, 324
- gastrointestinal system, 322–323
- hematopoietic system, 323
- neurologic system, 324
- renal system, 323
- reproductive system, 324
- Chenodeoxycholic acid (chenodiol or CDCA), 1422
- Chest
  - auscultation, 483
  - configuration, 477
  - pain, 473, 477, 658
    - assessment, 659t–660t
  - percussion, 626
  - trauma
    - blunt trauma, 589–592
    - cardiac tamponade, 597
    - penetrating trauma, 592–593
    - pneumothorax, 593–597
    - subcutaneous emphysema, 597–598
  - tumors
    - lung cancer (bronchogenic carcinoma), 577–588
    - tumors of mediastinum, 588–589
  - vibration, 627
  - x-rays, 488, 674
- Chest drainage system, 595–597, 596f
  - comparison, 595t
  - dry suction water-seal systems, 597
  - dry suction with a one-way mechanical valve, 597
  - water seal system, 596
- Chest physiotherapy (CPT), 529, 543, 552, 588, 624, 631, 2103
- Chief complaint, 75
- Childhood illnesses, 75
- Chimeric antigen receptor (CAR) T-cell therapy, 332
- Chlamydia, 1684
- Chlamydia pneumoniae, 920
- *Chlamydia trachomatis*, 2169
- Chlorhexidine, 1172
- Chloride channel activator, 1290t
- Chloride imbalance, 257t

- hyperchloremia, 258
- hypochloremia, 257–258
- Cholecystectomy, 1422
- Cholecystitis, 1418
- Cholecystokinin (CCK), 1345, 1417
- Cholecystostomy
  - laparoscopic, 1424–1425
  - percutaneous, 1425–1426
  - small-incision, 1425
  - surgical, 1425
- Choledochostomy, 1425
- Cholelithiasis, 1418–1426
  - assessment and diagnostic findings, 1420–1420t
    - abdominal x-ray, 1421
    - cholescintigraphy, 1421
    - endoscopic retrograde cholangiopancreatography (ERCP), 1421–1422
    - oral cholecystography, 1421
    - percutaneous transhepatic cholangiography (PTC), 1422
    - radionuclide imaging, 1421
    - ultrasonography, 1421
  - clinical manifestations
    - jaundice, 1420
    - pain and biliary colic, 1420
    - urine and stool color, changes in, 1420
    - vitamin deficiency, 1420
  - medical management, 1422
    - dissolving gallstones, 1423
    - extracorporeal shock wave lithotripsy (ESWL), 1424
    - intracorporeal lithotripsy, 1423–1424
    - nutritional and supportive therapy, 1422
    - pharmacologic therapy, 1422–1423
    - stone removal by instrumentation, 1423
  - pathophysiology
    - cholesterol stones, 1419
    - pigment stones, 1419
  - risk factors, 1419c
  - surgical intervention
    - cholecystectomy, 1425
    - choledochostomy, 1425

- gerontologic considerations, 1426
- laparoscopic cholecystectomy, 1424–1425
- nursing process, 1426–1428
- percutaneous cholecystostomy, 1425–1426
- preoperative measures, 1424
- small-incision cholecystectomy, 1425
- Cholescintigraphy, 1421
- Cholesterol, 672
- Chordae tendineae, 766
- Chromosomal differences, 124
- Chromosomes, 119
- Chronic bronchitis, 484t, 603–604
- Chronic diseases, 155
  - causes of, 157–159
  - course of, 160
  - deaths, 157–158
  - definition, 155, 157
  - effect on quality of life, 155–156
  - facts about multiple chronic conditions (MCC), 156c
  - health care costs, 155, 160
  - health disparities and, 156–157
  - major behaviors as causes of, 158
  - management of, 157
  - misconceptions about, 158t
  - nonmodifiable factors, 158
  - patient education to prevent, 159
  - prevalence of, 157–159
  - prevention of, 159
  - progression of, 160
  - psychological and emotional reactions of patients, 157
  - risk factors, 159
  - therapeutic regimens, 160
- Chronic gastric ulcers, 1271
- Chronic gastritis, 1267
- Chronic glomerulonephritis, 1560–1561
- Chronic illness
  - collaborative process management of, 160
  - continuing and transitional care, 162–163
  - day-to-day management of, 160
  - definition, 155



- development of, [160](#)
- ethical issues, [160](#)
- family life and, [160](#)
- implications of managing, [161](#)
- lifestyle factors causing, [158](#)
- living with uncertainty, [161](#)
- nursing care of patients with, [162–163](#)
- psychological and social issues, [159](#)
- self-management of, [160](#)
- Chronic invasive fungal sinusitis, [501](#)
- Chronic kidney disease (CKD), [1555–1556](#)
  - assessment and diagnostic findings, [1557](#)
  - clinical manifestations, [1557](#)
  - medical management, [1557](#)
  - in older adults, [1557](#)
  - pathophysiology, [1556](#)
  - stages of, [1556–1557](#), [1557c](#)
- Chronic lymphocytic leukemia (CLL)
  - clinical manifestations, [958](#)
  - medical management, [959](#)
  - nursing management, [959](#)
  - pathophysiology, [958](#)
  - veterans considerations, [957](#)
- Chronic multisymptom illness (CMI), [161](#)
- Chronic myeloid leukemia (CML)
  - clinical manifestations, [955](#)
  - medical management, [955–956](#)
  - nursing management, [956](#)
  - risk factors associated with lower adherence to oral therapy for, [956t](#)
- Chronic obstructive pulmonary disease (COPD), [262](#), [474](#), [484t](#), [534](#), [796](#), [964](#), [999](#)
  - age difference, [605](#)
  - airflow limitation in, [603](#)
  - airway clearance, achieving, [619](#), [624–627](#)
  - arterial blood gas measurements in, [607](#)
  - assessing patients with, [607c](#)
  - assessment and diagnostic findings, [606–607](#)
  - breathing retraining, [627–628](#), [628c](#)
  - clinical manifestations, [606](#)
  - complications, [608](#)

- deaths from, 603
- exercise tolerance, improving, 628–629
- genetic risk factors, 605
- grades, 607–608t
- home, community-based, or transitional care, 629
- inflammatory and structural changes, 603
- lifestyle modifications, 608, 630
- medical management, 608–619
  - exacerbations, 616–617
  - nutritional therapy, 618–619
  - oxygen therapy, 608–614, 610t–612t, 630c
  - palliative care, 619
  - pharmacologic agents, 608, 614–616
  - pulmonary rehabilitation, 618–619
  - risk reduction, 608
  - smoking cessation, 608
  - surgical management, 617–618
- monitoring and managing potential complications, 629
- nursing management, 619–631, 620c–624c
- pathophysiology, 603–605
- risk factors, 605–606
- self-management, 628–631
- systemic or extrapulmonary manifestations of, 606
- Chronic or persistent pain, 198
- Chronic pancreatitis, 1433–1436
  - assessment and diagnostic findings, 1437
  - clinical manifestations, 1436–1437
  - medical management
    - nonsurgical approaches, 1437
    - surgical approaches, 1437–1438
- Chronic pelvic pain, 1694
- Chronic pharyngitis
  - atrophic, 504
  - chronic granular, 504
  - clinical manifestations, 504–505
  - hypertrophic, 504
  - medical management, 505
  - nursing management, 505
- Chronic pyelonephritis, 1610–1611
- Chronic respiratory acidosis, 262–263

- Chronic rhinosinusitis
  - assessment and diagnostic findings, 501–502
  - clinical manifestations of, 501
  - complications, 502
  - medical management, 502
  - nursing management, 502–503
  - pathophysiology, 501
  - prevalence of, 501
  - surgical intervention, 502
- Chronic SDH, 2059
- Chronic sialadenitis, 1235
- Chronic strains, 1153
- Chyle leak, 1243
- Chyme, 1210–1211
- Cimetidine, 1269t
- C1 inhibitor (C1INH) deficiency, 1060
- CircAid, 854
- Circulating nurse (or circulator), 419–420
- Circulatory impairment, 1175
- Circulatory insufficiency, in vascular disease, 821
- Circulatory needs of tissues, 819
- Circumcision, 1777
- Cisgender, 1781
- Clarithromycin, 1269t
- Clavicle fractures, 1178–1179
- Cleansing of colon, 1223
- Clinical nurse leader (CNL), 35–36
- Clone, 958
- Clonus, 1108, 1983–1984
- Closed fracture, 1157
- Closed reduction, 1159–1160
- *Clostridium difficile* (*C. difficile*) colitis, 1247
- *Clostridium difficile* infection, 1308, 2154
- Clotting, 269, 891
- Clotting cascade, 274
- Clubbing of the fingers, 475
- Co-analgesic agents, 216–218
  - antidepressant, 217
  - for burn injuries, 217
  - gabapentin, 217

- gerontologic considerations, 217–218
- ketamine, 217
- lidocaine patch, 216–217
- liposomal formulations, 217
- local anesthetics, 216–217
- membrane stabilizer anticonvulsant medications, 217
- pregabalin, 217
- serotonin and norepinephrine reuptake inhibitors (SNRIs), 217
- Codeine, 214
- Cognitive appraisal, 100
- Cognitive coping strategies, 410
- Cognitive–motivational–relational theory, 100
- Colds and cold sores, 498c
- Cold therapy, 1171
- Cold urticaria, 1060–1061
- Collaborative problems, 16
- Collagen dressings, 1818
- Colloid solutions, 227, 282
- Colon cancer, 125
- Colonic function, 1212
- Colonic transit studies, 1221
- Colonization, 2148
  - of GI tract, 1212
- Colonoscopy, 1222–1223
- Colony-stimulating factors, 995
- Colorectal cancer, 1324
  - assessment and diagnostic findings, 1326
  - clinical manifestations, 1326
  - complications, 1326
  - gerontologic considerations, 1326
  - medical management, 1327–1329
    - adjuvant therapy, 1328–1329
    - surgery, 1327–1328
  - nursing process, 1330–1333
  - pathophysiology, 1325–1326
  - prevention, 1327
- Colorectal tumors, 125
- Color vision testing, 1902
- Colposcopy, 1653
- CoLyte, 1223

- Coma, [1993](#)
- Comedones, [1834](#)
- Comfort–function goal, [204](#)
- Comminuted fracture, [1157–1158f](#)
- Commissurotomy, [771–772](#)
- Communication techniques, therapeutic, [15t](#)
  - genetic and genomic information, [138](#)
  - in palliative care, [373–374](#), [374t](#)
  - with people who have disabilities, [148c–149c](#)
- Community, [56](#)
- Community-acquired pneumonia (CAP), [531–532](#)
  - causes, [532](#)
  - incidence rate, [532](#)
  - need for hospitalization, [531](#)
- Community and transitional services, [2184](#)
- Community-based palliative care, [372](#)
- Compensatory processes, [104](#)
- Compensatory stage of shock, [276](#)
- Complementary and alternative medicine, [77–78](#)
- Complement system, [993–994](#)
- Complex genetic conditions, [124](#)
- Complex regional pain syndrome (CRPS), [1165–1166](#)
- Compliance, [466](#)
- Composite dressings, [1818](#)
- Comprehensive Addiction and Recovery Act of 2016, [212](#)
- Compression, [1158f](#)
- Compression hip screw, [1185f](#)
- Compression therapy, [853–855](#)
- Computed tomography (CT) scanning, [109](#), [488–489](#), [1109](#), [1655](#), [1985–1986](#)
  - of abdomen, [825](#)
  - of abdominal organs and structures, [1219–1220](#)
  - cardiac, [679](#)
  - of chest, [921](#)
  - kidney and urinary tract, [1549](#)
  - of lymphedematous arm or leg, [825](#)
  - multidetector (MDCT), [825](#)
  - of rotator cuff tears, [1154](#)
- Concentrated (fluorinated) corticosteroids, [1820](#)
- Concomitant hyperthyroidism, [1247](#)

- Concomitant lactose intolerance, [1247](#)
- Concussion, [2060](#)
- Conduction, [691](#)
- Conduction abnormalities, [708–710](#), [779](#)
  - first-degree AV block, [708–708f](#)
  - medical management, [710](#)
  - second-degree AV block, [709–709f](#)
  - third-degree AV block, [709–710](#), [710f](#)
- Conductive keratoplasty, [1920](#)
- Cone biopsy, [1653](#)
- Confidentiality, [27–28](#), [147](#)
- Confidentiality of genetic and genomic information, [132](#)
- Confusion Assessment Method (CAM)-ICU, [281](#)
- Congestive heart failure, [797–798](#)
- Conjunctivitis
  - allergic, [1928–1929](#)
  - assessment and diagnostic findings, [1927](#)
  - bacterial, [1927–1928](#)
  - clinical manifestations, [1927](#)
  - toxic, [1928–1929](#)
  - viral, [1927–1929](#)
- Consolidation, [533](#)
- Constancy, [98](#)
- Constipation, [1178](#), [1248t](#)
  - assessment and diagnostic findings, [1288](#)
  - clinical manifestations, [1288](#)
  - complications, [1288](#)
  - definition, [1287](#)
  - gerontologic considerations, [1288–1289](#)
  - medical management, [1289](#)
  - nursing management, [1289](#)
  - pathophysiology, [1287–1288](#)
- Contact dermatitis, [1056–1057](#), [1230t](#)
  - assessment and diagnostic findings, [1056–1057](#)
  - clinical manifestations, [1056](#)
  - symptoms of, [1056](#)
  - types, testing, and treatment of, [1056t](#)
- Contact layers, [1818](#)
- Continent ileostomy, [1310](#)
- Continuing and transitional care, [48–49](#)

- in Addison's disease, 1478–1479
- of adults with hip fractures, 1186
- after bariatric surgery, 1360
- after cardiac surgery, 763
- after gallbladder surgery, 1428
- after gender reassignment surgery, 1792–1793
- after ileal conduit surgery, 1630
- after kidney surgery, 1595–1596
- after kidney transplantation, 1600
- after liver transplantation, 1412
- after ostomy surgery, 1324
- after surgery, 444, 458
- after THA, 1133
- after urinary diversion surgery, 1635
- of angina patients, 736–737
- assessment and diagnostic findings, 1479–1480
- of asthma patients, 641–642
- of bone tumor patient, 1148
- of cancer patients, 358
- chronic illness management, 162–163
- of chronic liver disease patient, 1404
- clinical manifestations, 1479
- of colorectal cancer patient, 1333
- of COPD patients, 631
- corticosteroid therapy, 1484
- of Cushing's syndrome patient, 1481–1482
- detection of metastases, 1564
- of diabetes patients, 1512, 1530
- enteral feedings, 1249
- eye prosthesis, 1932
- of gastric cancer patient, 1283
- of gastritis patient, 1270
- of gastrostomy or jejunostomy patient, 1252
- of HBV patient, 1390
- of hepatic encephalopathy patient, 1383
- home infusion therapies, 269–270
- of hyperthyroidism patients, 1467
- of hypothyroidism patients, 1460–1461
- of kidney disease patient, 1577, 1583
- of liver cancer patient, 1407

- of lung abscess patients, 552
- medical management, 1480
- of multiple myeloma patients, 980–981
- neobladder management, 1632
- of oral cancer patient, 1238
- of pancreatic cancer patients, 1440, 1442
- parenteral nutrition support, 1318
- of patients with chronic sophageal conditions, 1259
- of patients with disability, 154–155
- of patient undergoing neck dissection, 1244
- of patient with a cast, 1170
- of patient with anorectal disorders, 1336
- of patient with ascites, 1375
- of patient with spinal cord tumors, 2122
- of peptic ulcer disease patient, 1277
- in peritoneal dialysis, 1589–1590
- in primary glomerular diseases, 1559–1560
- of pulmonary embolism patients, 853
- of rheumatoid arthritis patient, 1082
- from shock and sepsis, 298
- through community resources and referrals, 53
- in uterine prolapse, 1690–1691
- Continuing care retirement communities (CCRCs), 177–178
- Continuous ambulatory peritoneal dialysis (CAPD), 1586, 1588, 1591
- Continuous cardiac monitors, 676
- Continuous central venous oximetry monitoring, 278
- Continuous cyclic peritoneal dialysis (CCPD), 1588
- Continuous ECG monitoring, 674–675
- Continuous glucose monitoring (CGM) system, 1499–1500
- Continuous passive motion devices (CPMs), 1134
- Continuous positive airway pressure (CPAP), 662, 804
- Continuous renal replacement therapy, 1583–1584
- Continuous venovenous hemodialysis (CVVHD), 1584
- Continuous venovenous hemofiltration (CVVH), 1584
- Contraception
  - abstinence, 1660
  - coitus interruptus, 1663
  - contraindications, 1658
  - emergency, 1663–1664
  - fertility awareness-based methods, 1663



- hormonal, [1660–1661](#)
- injectable contraceptives, [1661–1662](#)
- mechanical barriers
  - cervical cap, [1662](#)
  - diaphragm, [1662](#)
  - female condom, [1662](#)
  - male condom, [1662–1663](#)
  - spermicides, [1662](#)
- nursing management, [1664](#)
- oral contraceptives, [1661](#)
- postcoital IUD insertion, [1664](#)
- sterilization, [1660](#)
- transdermal, [1661](#)
- vaginal, [1661](#)
- Contractility, [656](#)
- Contracture, [1107](#)
- Contracture of fingers and wrist, [1171](#)
- Contrast-induced nephropathy (CIN), [681](#), [1220](#)
- Contrast mammography, [1713](#)
- Contrast phlebography, [826](#)
- Contrast-sensitivity testing, [1904](#)
- Contusions, [1153](#)
- Coping enhancement, [111](#)
- Coping with stressful event, [100](#), [103](#)
- Core needle biopsy, [1716](#)
- Corn, [1120](#)
- Corneal dystrophies, [1918](#)
- Corneal surgeries, [1918–1919](#)
- Coronary arteries, [653](#)
- Coronary artery bypass graft (CABG)
  - alternative technique, [750](#)
  - complications, [750](#)
  - major indications for, [748](#)
  - nursing management, [750–763](#)
  - patient eligibility, [748](#)
  - traditional, [749–750](#)
  - vein commonly used for, [748](#)
- Coronary artery disease (CAD), [726](#)
  - age difference, [732](#)
  - clinical manifestations, [727](#)

- gender difference, [732](#)
- pathophysiology, [726](#)
- prevention of
  - cessation of tobacco use, [730–731](#)
  - controlling cholesterol level, [728–730](#)
  - diabetes control, [732](#)
  - diet recommendations, [730](#)
  - hypertension management, [731–732](#)
  - medications, [730](#)
  - physical activity, [730](#)
- risk factors, [727–728c](#)
- symptoms and complications, [727](#)
- Coronary artery stent, [746–747](#)
- Coronary atherosclerosis, [726](#)
  - development of, [729f](#)
- Coronavirus disease 2019 (COVID-19) pandemic, [532](#), [2151–2152](#), [2155](#), [2181](#), [2183–2184](#), [2186](#), [2220–2222](#), [2224](#), [2226–2227](#)
  - ACE2 cellular surface receptors, [875–876](#)
  - AKI and, [1564–1565](#)
  - ARDS in, [573–574](#)
  - cancer and, [335–336](#)
  - clinical manifestations, [540](#), [2172](#)
  - complications, [542](#)
  - contact dermatitis and, [1841–1842](#)
  - delivery of enteral nutrition to patients, [1246](#)
  - dermatologic manifestations, [1838](#)
  - diabetes and, [1489](#)
  - diagnosis of, [540](#)
  - fatality rates, [542](#)
  - hemodialysis (HD) and, [1580](#)
  - kidney transplantation and, [1598–1599](#)
  - medical management, [540–542](#), [2172–2173](#)
  - nursing management, [2173](#)
  - obesity as risk factor, [1352](#)
  - palliative and end-of-life care and, [388](#)
  - pathophysiology, [2172](#)
  - personal protective equipment (PPE), [2153c](#), [2227–2229](#), [2228c](#)
  - relationship between vitamin D and, [1135](#)
  - risk factors, [2172](#)
  - stroke and, [2032](#)

- use of ACE inhibitors or ARBs, 875–876
- vaccines for, 2173
- venous thromboembolism (VTE) and, 845
- viral transmission, 540
- Corpus luteum, 1643
- Cortical bone, 1097
- Corticosteroid nasal sprays
  - for allergic rhinitis, 1050
- Corticosteroids, 1446
  - for allergic rhinitis, 1052
  - for anaphylactic reactions, 1047
  - for asthma, 639
  - for bronchial obstruction, 1484
  - for dermatologic disorders, 1484
  - dosage, 1484
  - in eye infections, 1484
  - for IBD, 1308
  - nursing management of, 1484–1485f
  - for polymyositis, 1087
  - for septic shock, 1484
  - side effects, 1483
  - for SLE, 1084
  - tapering of dosage, 1484
  - therapeutic uses of, 1483–1484
  - topical, 1820
- Cosmetic procedures, 1860
- Cough, 471–473, 671
- CPR team, 814
- Crackles, 671
- Cranial nerve disorders, 2106–2110
- Cranial nerves, 1972–1972t
- C-reactive protein, 674, 1710
- C-reactive protein (CRP), 728
- Creams, 1819–1820
- Creatinine, 1539
- Crepitus, 1106, 1159
- CREST syndrome, 1086
- Creutzfeldt–Jakob disease
  - assessment and diagnostic findings, 2094
  - clinical manifestations, 2094

- medical management, 2094
- nursing management, 2094
- pathophysiology, 2093–2094
- Cricoid cartilage, 464
- Cricothyroidotomy, 2189
- Critical-care nurses, moral distress in, 26c
- Critical-care nursing, 36
- Critical incident stress management (CISM), 2183
- Critical thinkers, 11
- Critical thinking, 10–12
  - components of, 11–12
  - decision making and, 12
  - in nursing process, 12
  - rationality and insight, 11
- Crohn's disease, 1309, 1334
  - assessment and diagnostic findings, 1307
  - clinical manifestations, 1306–1307
  - comparison with ulcerative colitis, 1306t
  - complications, 1307
  - pathophysiology, 1305
- Cruciate ligament injury, 1156
- Crush injuries, 2195
- Crutch gaits, 46c
- Cryosurgery, 1854
- Cryotherapy, 1653
- Cryptococcal meningitis, 1024–1025
- Cryptococcus neoformans, 1024
- Crystallized intelligence, 179
- Crystalloid solutions, 227, 282
- CT pulmonary angiography (CTPA), 489
- C-type natriuretic peptide (CNP), 232
- Cultural assessment, 91–94, 92c
- Cultural diversity, 73
  - surgery and, 418–419
- Cultural diversity, in health care and nursing, 7
- Culturally competent care, 73
- Culturally sensitive care, at end-of-life, 382–383, 383c
- Culture
  - competence, 73
  - deaf, 1941

- definition, [72](#)
- ethnic, [72](#)
- views and beliefs, menstruation, [1656](#)
- Cultures (screening), [488](#)
- Cushing's disease, [1451](#)
- Cushing's syndrome, [1450](#)
  - nursing process, [1480–1482](#)
- Cyanosis, [475–476](#), [1804](#)
- CyberKnife™, [317](#)
- Cyclo-oxygenase (COX), [199](#), [201](#)
- Cyclosporine, [1308](#)
- Cystic fibrosis (CF), [123](#)
  - assessment and diagnostic findings, [644](#)
  - chronic respiratory inflammation and infections of, [644](#)
  - medical management
    - of bacterial infections, [644](#)
    - CFTR modulators, [645](#)
    - of chronic infections, [644](#)
    - nebulized and IV antibiotics, [645](#)
    - oral antibiotic therapies, [644](#)
  - nonpulmonary manifestations, [644](#)
  - nursing management, [645](#)
  - pathophysiology, [643–644](#)
  - pulmonary manifestations, [644](#)
- Cystic fibrosis transmembrane conductance regulator (CFTR), [643–645](#)
- Cystine stones, [1622](#)
- Cystitis, [1605](#)
- Cystocele, [1687](#)
- Cystography, [1551](#)
- Cystosarcoma phyllodes, [1719](#)
- Cysts
  - breast, [1712](#), [1718](#)
  - of skin, [1851](#)
- Cytochrome P450 (CYP) genes, [131](#)
- Cytokine release syndrome (CRS), [322](#)
- Cytokines, [274](#), [308](#), [1099](#)
  - of innate and adaptive immunity, [994t](#)
  - stress reduction and effect on inflammatory, [1001c–1002c](#)
- Cytologic test for cancer (pap smear), [1652–1653](#)

- Cytomegalovirus (CMV), [532](#), [959](#), [1021](#)
- Cytomegalovirus retinitis, [1025](#), [1932–1933](#)
- Cyto-reductive therapy, [966](#)
- Cytosine (C), [119–119f](#)
- Cytotoxic hypersensitivity, [1041](#)
- Cytotoxic T cells (killer T cells), [993](#)

## D

- Dabigatran, [849t](#), [851](#)
- Dacarbazine, [321t](#)
- Dactinomycin, [321t](#)
- Dalteparin, [661](#)
- Danazol, [927](#)
- Dandruff, [421](#)
- Dantrolene, [2084](#)
- Dapagliflozin, [1506t](#)
- Dapoxetine, [1752](#)
- Dapsone
  - for acne vulgaris, [1832](#)
  - for dermatitis herpetiformis, [1847](#)
- Daratumumab, [977](#)
- Darbepoetin, [1733](#)
- Darunavir (DRV), [1019t](#)
- Dasatinib, [955](#)
- Daughter cells, [120](#)
- Daunorubicin, [321t](#), [953](#)
- Dawn phenomenon, [1502](#)
- Deafness, [1944](#)
- Débridement, [856](#)
  - autolytic, [856](#)
  - biologic, [856](#)
  - chemical, [856](#)
  - definition of, [856](#)
  - description of, [856](#)
  - enzymatic, [856](#)
  - surgical, [856](#)
  - ultrasonic, [856](#)
- Debulking, [313](#)
- Decerebration, [2001](#)
- Decitabine, [963](#)

- Decompression, [1228](#)
- Decongestants, [1050](#)
- Decontamination, [2218](#)
- Decortications, [2001](#)
- Deep breathing, [408](#)
- Deep inferior epigastric perforator flap (DIEP), [1737](#)
- Defecography, [1225](#)
- Defibrillation, definition of, [707](#)
- Defibrillator, [712](#)
- Degenerative disorders, [2122–2126](#)
- Degenerative joint disease, [1233](#). *See also* Osteoarthritis (OA)
- Degradation, [1069](#)
- Dehiscence, definition of, [456](#)
  - Dehydration, [681](#)
- Delayed complications, [1164–1165](#)
- Delayed union, [1152](#)
- Delirium, [1985](#)
- Delirium tremens, [2210](#)
- Dementia, [2017](#)
- Demyelination, [2094](#)
- Dengue fever, [2229t](#)
- Denosumab, [1138t](#)
- Dental plaque and caries, [1229](#)
  - contributing factors, [1229](#)
  - prevention of, [1232](#)
    - diet, [1232](#)
    - fluoridation, [1232](#)
    - mouth care, [1232](#)
    - pit and fissure sealants, [1232](#)
  - treatment for, [1232](#)
- Dentition, preoperative assessments, [403](#)
- Denture care, [1215c](#)
- Deontologic/formalist theory, [25](#)
- Deoxyribonucleic acid (DNA), [119](#)
  - definition of, [119](#)
  - structure of, [119f](#)
- Department of Health and Human Service (HHS), [2219](#)
- Department of Homeland Security, [2219](#)
- Depolarization, [654](#)
- Depressed skull fractures, [2056](#)

- Depression, [663](#)
- Dermabrasion, [1860](#)
- Dermagraft, [857](#)
- Dermatitis, definition of, [1815](#)
- Dermatitis herpetiformis, [1296](#)
- Dermatofibroma, [1852](#)
- Dermatologic problems, [1691](#)
- Dermatomyositis, [1086](#)
- Dermatophyte infections, [1813](#)
- Dermatoses, [1815](#)
- Dermis, skin, [1800](#)
- Desaturate, [614](#)
- Desflurane, [425t](#)
- Desipramine, [217](#)
- Desloratadine, [1051t](#)
- Desmopressin, [935](#)
- Desquamation, [1237](#)
- Desquamative inflammatory vaginitis, [1679](#)
- Destination therapy, [804](#)
- Detrusor hyperactivity, [188](#)
- Developmental disabilities, [142](#)
- Dexamethasone, [957](#)
- Dexlansoprazole, for GERD, [1258t](#)
- Dexrazoxane, [324](#)
- Diabetes, [1488](#). *See also* Glycosylated hemoglobin
  - CF-related, [644](#)
  - clinical manifestations, [1523](#)
  - complications of, [1523](#)
    - diabetic neuropathy, [1523](#)
    - foot and leg problems, [1525–1526](#)
    - hyperglycemic hyperosmolar syndrome, [1491](#), [1516–1519](#)
    - long-term, [1519](#)
    - macrovascular complications, [1519](#)
    - microvascular, [1520](#)
  - home, community-based, and transitional care, [1522](#)
    - patient education, [1522](#)
  - nutritional therapy, [1494](#)
    - caloric distribution, [1494](#)
    - caloric requirements, [1494](#)
    - dietary concerns, [1496](#)



- food classification systems, 1494–1495
- food exchange system, 1494
- Diabetes Control and Complications Trial Research Group (DCCT), 1492
- Diabetes insipidus (DI), 1445
  - assessment and diagnostic findings, 1451
  - clinical manifestations, 1451
  - medical management, 1452
  - nursing management, 1452
- Diabetes patient education programs, 1507
- Diabetes Prevention Program Outcomes Study, 1491
- Diabetic dermopathy, 1812
- Diabetic diarrhea, 1525
- Diabetic ketoacidosis (DKA), 1490–1491
  - assessment and diagnostic findings, 1492
  - clinical features of, 1483
  - and hyperglycemic hyperosmolar syndrome, 1516
  - and hypokalemia, 1518
  - management of, 1485
    - electrolyte balance, 1518
    - reversing acidosis, 1516
- Diabetic neuropathy, 1523
- Diabetic osteomyelitis, 1142
- Diabetic retinopathy, 1520
- Diagnosis, in nursing process, 16
  - choosing nursing diagnosis, 16
  - collaborative problems, 16
  - nursing diagnoses, 16
- Diagnostic peritoneal lavage (DPL), 2194
- Dialysate, 1554
  - magnesium-free, 254
- Dialysis, 1583
- Dialyzer, 1554
- Diaphragm, 1662
- Diaphragmatic breathing, 409c
- Diaphragmatic excursion, 481
- Diaphysis, 1097
- Diarrhea, 1289
  - acute, 1289
  - assessment and diagnostic findings, 1291

- chronic, [1289](#)
- clinical manifestations, [1291](#)
- complications, [1291](#)
- exudative, [1291](#)
- infectious, [1291](#)
- malabsorptive, [1291](#)
- medical management, [1291](#)
- nursing management, [1291–1292](#)
- osmotic, [1291](#)
- pathophysiology, [1290–1291](#)
- persistent, [1289](#)
- secretory, [1291](#)
- Diarthrosis joints, [1099–1100](#)
- Diastole, [691](#)
- Diastolic blood pressure (DBP), [731](#)
- Diastolic heart failure, [793](#). *See also* Heart failure (HF)
- Diazepam (Valium), [426t](#)
- DIC. *See* Disseminated intravascular coagulation
- Diclofenac, [208](#)
- Diclofenac sodium gel, [1080](#)
- Dicloxacillin, [1835](#)
- Dicyclomine, [1295](#)
- Didanosine (ddl), [1018t](#)
- Dietary Approaches to Stop Hypertension (DASH) diet, [871t](#)
- Diethylpropion (Tenuate), for obesity, [1350t](#)
- Diethyltoluamide (DEET), [2093](#)
- Differentiation, stem cells, [885](#)
- Diffuse connective tissue disease, [1078](#)
- Diffuse esophageal spasm (DES), [1253–1254](#)
- Digestion, [1208](#)
- Digestive enzymes and secretions, [1211t](#)
- Digitalis, for heart failure, [800t](#)
- Digital mammography, for breast screening, [1713](#)
- Digital rectal examination (DRE), [1545](#)
- Digoxin, for heart failure, [800t](#)
- Dihydrotestosterone (DHT), [1753](#)
- Dilated cardiomyopathy (DCM), [775](#)
- Dilation and curettage (D&C), [1653](#)
- Diltiazem, for angina, [734t](#)
- Dimenhydrinate, [441t](#)

- Dipeptidyl peptidase-4 (DPP-4) inhibitors, [1505t](#)
- Diphenhydramine, [215](#)
- Diplopia, [1896](#)
- Dipyridamole, [677](#)
- Direct-acting oral anticoagulants, for atrial fibrillation, [701](#)
- Dirty bomb, [2231](#)
- Disability, [141–163](#)
  - categories of, [142](#)
  - disabling disorders *versus*, [144–145](#)
  - federal legislation, [146–149](#)
  - models of, [144](#)
  - prevalence of, [142](#)
  - types of, [142–144](#)
- Disarticulation, [1152](#)
- Disaster Medical Assistance Teams (DMAT), [2219](#)
- Disaster Mortuary Operational Response Teams (DMORT), [2220t](#)
- Disease Activity Score-28, [1079](#)
- Disease Control and Prevention (CDC), [305](#)
- Disease, definition of, [97](#)
- Disease-modifying antirheumatic drugs (DMARDs), [1069](#)
- Disease transmission, prevention of, [2094](#)
- Dislocation, [1152](#)
- Dissection, [817](#)
- Disseminated intravascular coagulation (DIC), [280](#)
- Dissolution therapy, for gallstones, [1416](#)
- Distal interphalangeal (DIP) joint, [1123](#)
- Distributive justice, [25](#)
- Distributive shock, [273](#)
- Disuse syndrome, [1169](#)
- Diuresis, [1534](#)
- Diverticular disease, [1300–1302](#)
- Diverticulitis, [1286](#)
- Diverticulosis, [1286](#)
- Diverticulum, [1286](#)
- DKA. *See* Diabetic ketoacidosis
- DMARDs. *See* Disease-modifying antirheumatic drugs
- DNP. *See* D-type natriuretic peptide
- Dobutamine, [678](#)
- Docetaxel, [321t](#)
- Docusate, [1290t](#)

- Dofetilide, for atrial fibrillation, [701](#)
- Dolutegravir (DTG), [1020t](#)
- Dominant genetic disorders, [122f](#)
- Doppler techniques, [680](#)
- Dornasealfa (Pulmozyme), [644](#)
- Dorsal recumbent position, [434](#)
- Dorsiflexion, [41c](#)
- Dose-dense chemotherapy, [1708](#)
- Double-cuffed tube, [558f](#)
- Double effect, [25](#)
- Douche, [1676](#)
- Doxazosin, [874t](#)
- Doxorubicin, [321t](#)
- Doxycycline, [1334](#)
- Dromotropy, [690](#)
- Dronabinol, [1026](#)
- Drone, [2205](#)
- *Droplet precautions*, [2151](#)
- Drug abuse, [2205](#)
- Drug-induced hepatitis, [1392](#)
- Drug interactions, surgical issues, [406t](#)
- Drug metabolism, in liver, [1367](#)
- Drug overdose, emergency management in, [2206t–2209t](#)
- Drug use, preoperative assessments, [402](#)
- Dry bites, [2200](#)
- Dry eye, [1926](#)
- Dryness of mouth. *See* Xerostomia
- Dry powder inhaler, [615t](#)
- Dry suction water seal systems, [595t](#)
- *d*-Tubocurarin, [427t](#)
- D-type natriuretic peptide (DNP), [232](#)
- Dual-energy x-ray absorptiometry (DEXA), [1110](#)
- Dubin–Johnson syndrome, [1372](#)
- Duchenne muscular dystrophy, [2132](#)
- Ductal carcinoma in situ (DCIS), [1708](#)
- Dulaglutide, [1505t](#)
- Duloxetine, [217](#)
- Dumping syndrome, [1228](#)
- Duodenal ulcers, [1225](#)
- Duodenum, [1171](#)

- Duplex ultrasonography, [817](#)
- Dupuytren disease, [1118](#)
- Dutasteride, for BPH, [1754](#)
- DVT. *See* Deep vein thrombosis
- Dwarfism, [1450](#)
- Dysarthria, [2031](#)
- Dyschezia, [1693](#)
- Dysfunctional uterine bleeding, [1658](#)
- Dyskinesias, [2124](#)
  - Guillain-Barré syndrome and, [2103](#)
  - Parkinson disease, [2124](#)
- Dyslipidemia, [780](#)
- Dysmenorrhea, [1640](#)
  - assessment and diagnostic findings, [1657](#)
  - management, [1657](#)
  - primary, [1657](#)
  - secondary, [1657](#)
- Dyspareunia, [1640](#)
- Dyspepsia, [1208](#)
- Dysphagia, [2101](#)
- Dysphonia, [2101](#)
  - definition of, [2101](#)
- Dysplasia, [1228](#)
- Dyspnea on exertion (DOE), [796](#)
- Dysrhythmias, [691–723](#)
- Dysrhythmias atrial, electrophysiologic (EPS) testing, [683](#)
- Dysuria, [1534](#)

## E

- Ear
  - anatomy, [1936–1937](#)
  - function of
    - balance and equilibrium, [1938](#)
    - hearing, [1938](#)
  - sound conduction, [1938](#)
- Eastern equine, [2093](#)
  - encephalitis, [2093](#)
  - fungal, [2093](#)
  - herpes simplex virus, [2092](#)
  - La Crosse, [2093](#)

- St. Louis, [2093](#)
- West Nile virus, [2093](#)
- Ebola virus, [2146t](#)
- EBPs. *See* Evidence-based practices
- EBRT. *See* External-beam radiation therapy
- Ecchymoses, [1809](#)
- Eccrine sweat glands, [1801](#)
- Echocardiography, [678](#)
  - nursing interventions, [680](#)
  - procedure, [680](#)
  - stress testing, [677](#)
  - transesophageal, [680](#)
  - transthoracic, [680](#)
- Ecstasy. *See* 3,4-methylenedioxymetham-phetamine (MDMA)
- Ectopic pregnancy, [1669–1671](#)
  - assessment and diagnostic findings, [1669–1670](#)
  - causes of, [1669](#)
  - clinical manifestations, [1669](#)
  - incidence of, [1669](#)
  - nursing process, [1670–1671](#)
    - assessment, [1670](#)
    - complications management, [1670–1671](#)
    - diagnosis, [1670](#)
    - evaluation, [1671](#)
    - grieving process, supporting, [1670](#)
    - nursing interventions, [1670–1671](#)
    - pain relief, [1670](#)
    - patient education, [1671](#)
    - planning and goals, [1670](#)
    - pharmacologic therapy, [1670](#)
    - risk factors for, [1669](#)
    - sites of, [1669f](#)
    - surgical management, [1670](#)
- Ectropion, [1896](#)
- Eczema. *See* Contact dermatitis
- Edatrexatefludarabine, [321t](#)
- Edema, [661](#)
  - airway, [655](#)
  - cirrhosis and, [1407](#)
  - and ecchymosis, localized, [1159](#)

- interstitial pulmonary, [693](#)
- liver dysfunction and, [1397](#)
- patient education, [264](#)
- peripheral, [686](#)
- right-sided heart failure, [643](#)
- and total knee arthroplasty, [1155](#)
- Edrophonium chloride, [2101](#)
- Edwards Lifesciences Vigileo monitoring system, [687](#)
- EEG. *See* Electroencephalogram
- Efavirenz (EFV), [1018t](#)
- Effector T cells, [993](#)
- Effluent, [1554](#)
- Effort thrombosis, [846](#)
- Effusion, [1107](#)
- EGFR. *See* Epidermal growth factor receptor
- Egophony, [462](#)
- EHR. *See* Electronic health record
- Ejaculation, disorders of, [1751](#)
- Ejaculatory duct, [1744](#)
- Ejection fraction (EF), [662](#), [680](#)
- ELAD (extracorporeal liver assist devices), [1393](#)
- Elbow, [1180](#)
- Elder abuse, [166](#)
- Elective replacement indicator (ERI), [715](#)
- Electrical burns, [1869](#)
- Electrical cardioversion, for dysrhythmias, [713](#)
- Electrocardiogram (ECG)
  - and dysrhythmias
    - components of, [693](#)
    - electrode placement., [693](#)
    - electrophysiology study, [692–693](#)
    - hardwire monitoring, [692](#)
    - Holter monitor, [692](#)
    - interpretation of, [695](#)
    - obtaining, [691–693](#)
    - PP interval, [694](#)
    - PR interval, [694](#)
    - P wave, [693](#)
    - QRS complex, [693–694](#)
    - QT interval, [694](#)

- rhythm strip, [694–695](#)
- RR interval, [694](#)
- standard 12-lead, [693](#)
- ST segment, [694](#)
- telemetry, [692](#)
- TP interval, [694](#)
- T wave, [694](#)
- U wave, [694](#)
- Electrocautery, for genital warts, [1681](#)
- Electroconvulsive therapy, [181](#)
- Electrode placement, [675](#)
- Electroencephalography, [2092](#)
- Electrohydraulic lithotripsy, [1624](#)
- Electrolyte balance, [760](#). *See also* Body fluids
- Electrolyte imbalance, [237](#)
  - calcium imbalance, [247–248](#)
- Electrolyte solutions, [235t](#)
- Electron beam CT (EBCT), [679](#)
- Electronic health record (EHR), [72](#)
- Electronic Health Record (EHR) Incentive Program, [8](#)
- Electronic nicotine delivery systems (ENDS), [474](#)
- Electrophysiology study (EPS), [683](#)
- Electrosurgery, [1852](#)
- Elephantiasis, [860](#)
- Elimination, [1208](#)
- Eltrombopag, [906c](#)
- Eluxadoline, [1295](#)
- Elvitegravir (EVG), [1020t](#)
- Embryonic stem cells, [995](#)
- Emergency contraception, [1663](#)
  - emergency contraceptive pills, [1663–1664](#)
  - nursing management, [1664](#)
  - postcoital intrauterine device insertion, [1664](#)
- Emergency department (ED), [2035](#)
- Emergency management, [2073–2074](#)
- Emergency medical services (EMS), [2222](#)
- Emergency Medical Treatment and Active Labor Act (EMTALA), [2180](#)
- Emergency Nurses Association (ENA), [2180](#)
- Emergency nursing and the continuum of care



- community and transitional services, 2184
- discharge planning, 2184
- gerontologic considerations, 2184
- obesity considerations, 2185
- Emergency personnel, caring for, 2183
- Emergency preparedness plan (EOP), 2221–2222
  - components of, 2221
  - initiating, 2222–2224
    - communicating with media and family, 2223–2224, 2224c
    - critical incident stress management, 2226–2227
    - identifying patients and documenting patient information, 2222
    - managing internal problems, 2223
    - nurse's role in disaster response plans, 2224–2226
    - triage, 2222–2223, 2223t
- Emergency Severity Index (ESI), 2185
- Emergency surgery, 400
- Emerging infectious diseases, 2171–2176
- Emesis, 2213
- EMG. *See* Electromyogram
- EMLA (eutectic mixture or emulsion of local anesthetics), 207
- Emmetropia, 1896
- Empagliflozin, 1506t
- Empathetic listening, 961
- Emphysema, 598
- Empyema, 527
  - Emtricitabine (FTC), 1018t
- Enalapril, 800t
  - for heart failure, 800t
  - for hypertension, 800t
- Encephalitis, arthropod-borne virus, 2093
- Enchondroma, 1146
- Endocardium, 651
- Endocervicitis, 1676
- Endocrine, definition of, 1416
- Endocrine function, preoperative assessments, 405
- Endocrine system, 1446
- Endolymph, 1937
- Endolymphatic hydrops, 1935
- Endolymphatic sac decompression, 1954
- Endometrial ablation, 1640

- Endometrial biopsy, [1653](#)
- Endometrial hyperplasia, [1695](#)
- Endometriosis, [1676](#)
  - assessment and diagnostic findings, [1693](#)
  - clinical manifestations, [1693](#)
  - medical management, [1693](#)
    - pharmacologic therapy, [1694](#)
    - surgical management, [1694](#)
  - nursing management, [1694](#)
  - pathophysiology, [1693](#)
  - risk factors, [1693](#)
  - transplantation theory, [1693](#)
- Endometriosis Association, [1694](#)
- Endometrium, [1640](#)
- Endophthalmitis, [1896](#)
- Endoscopic bronchoscopy, [490f](#)
- Endoscopic myotomy, [1253](#)
- Endoscopic retrograde cholangiopancreatography (ERCP), [1221](#)
- Endoscopic sclerotherapy, for variceal bleeding, [1378](#)
- Endoscopic thoracoscopy, [491f](#)
- Endoscopic ultrasonography (EUS), [1218](#)
- Endoscopic variceal ligation (EVL), [1364](#)
- Endosteum, [1098](#)
- Endotracheal intubation, [527](#)
  - preventing complications, [558c](#)
  - during surgery, [420](#)
- Endourologic methods of stone removal, [1622](#)
- Endourology, [1551–1552](#)
- Endovascular grafting, of abdominal aortic aneurysms, [840](#)
- Endovascular therapy, [2036](#)
- End-stage kidney disease (ESKD), [1555](#)
  - assessment and diagnostic findings
    - acidosis, [1570](#)
    - anemia, [1570](#)
    - calcium and phosphorus imbalance, [1570–1571](#)
    - glomerular filtration rate, [1570](#)
    - sodium and water retention, [1570](#)
  - cardiovascular disease and, [1557](#)
  - clinical manifestations, [1557](#)
  - complications of, [1559](#)

- medical management, 1559
  - dialysis, 1559
  - nutritional therapy, 1569
  - pharmacologic therapy, 1571–1572
- nursing management, 1559
  - continuing and transitional care, 1559–1560
  - patient education, 1559
- in older patients, 1559
- pathophysiology, 1557
- End-stage liver disease (ESLD)
  - with cirrhosis, 1395
  - and liver transplantation, 1407
- Enflurane, 425t
- Enfuvirtide, 1020t
- Enoxaparin, 661
- *Entamoebahistolytica*, 1412
- Entecavir (ETV), in hepatitis B, 1389
- Enteral feedings, in acute pancreatitis, 1431
- Enteral nutrition, 1431
- Enteric, 1244
- Enterocoele, 1676
- Enteroclysis, 1219
- Enterocutaneous fistula, 1307
- Enterohepatic circulation, 1366
- Enteroviruses, 2089
- Entropion, 1896
- Eucleation, 1896
- Enuresis, 1543t
- Envenomation, 2179
- Environmental emergencies
  - animal and human bites, 2200
  - snakebites, 2200
    - clinical manifestations, 2200–2201
    - management, 2201–2202
  - spider bites, 2202
  - tick bites, 2202
- Environmental Protection Agency (EPA), 2165
- Envoy esteem, 1960. *See also* Implanted hearing devices
- Enzymatic débridement, 856
- Enzyme immunoassay (EIA), 1007

- Enzyme-linked immunosorbent assay (ELISA), [1007](#)
- Eosinophil chemotactic factor of anaphylaxis, [1041](#)
- Eosinophils, [889](#)
- Epicardium, [561](#)
- Epicondylitis, [1154](#)
- Epicutaneous immunotherapy (EPIT), [1053](#)
- Epicutaneous tests, [1044](#)
- Epidermal growth factor receptor (EGFR), [304](#)
- Epidermis, skin, [1799](#)
- Epidermopoiesis, [1815](#)
- Epididymectomy, [1770](#)
- Epididymitis, [1770](#)
- Epidural anesthesia, [428](#)
  - advantages of, [428](#)
- Epidural hematomas (EDHs) symptoms, [2059](#)
- Epidural infusions, [448](#)
- Epidural monitor, [2002](#)
- Epigastric area, [668](#)
- Epigastric distress, [1420](#)
- Epigenetics, [116](#)
- Epiglottis, [463](#)
- Epinephrine, [820](#)
- Epiphyseal plate, [1097](#)
- Epiphyses, [1097](#)
- Epirubicin, [321t](#)
- Epistaxis, [494](#)
- Epitopes, [987](#)
- Eplerenone, [1483](#)
  - for hypertension, [890t](#)
- Epoetin alfa, [1125](#)
- Epoprostenol, [575](#)
- Eprosartan, for hypertension, [872t](#)
- Epstein-Barr virus (EBV), cancer and, [304](#)
- Eptifibatide, [661](#)
- Epzicom (3TC/ABC), [1018t](#)
- Equianalgesia, [211](#)
- Equilibrium radionuclide angiocardiology (ERNA), [679](#)
- ERCP. *See* Endoscopic retrograde cholangiopancreatography
- Erectile dysfunction, [1743](#)
- Erlotinib in pancreatic carcinoma, [1439](#)

- Erosion, [1807t](#)
- Erythema, [1039](#)
- Erythrocytapheresis, [896t](#)
- Erythrocytes, [896](#). *See also* Red blood cells (RBCs)
- Erythrocyte sedimentation rate (ESR), [950](#)
- Erythroderma. *See* Generalized exfoliative dermatitis
- Erythroid cells, [909](#)
- Erythroid-stimulating agents, [963](#)
- Erythromelalgia, [950](#)
- Erythroplakia, [1230t](#)
- Erythropoiesis, [887–888](#)
- Erythropoietin (EPO), [323](#)
- Eschar, [1817](#)
- Escharotomy, [1865](#)
- *Escherichia coli*, [1605](#)
- ESKD. *See* End-stage kidney disease
- Esmolol, [2210](#)
- Esomeprazole, [1135](#)
- Esophageal adenocarcinoma (EAC), [1257](#)
- Esophageal banding therapy. *See* Endoscopic variceal ligation (EVL)
- Esophageal cancer, [1260](#)
  - adenocarcinoma, [1260](#)
  - assessment and diagnostic findings, [1261](#)
  - clinical manifestations, [1261](#)
  - medical management, [1261](#)
    - palliative treatment, [1261](#)
    - surgical resection of esophagus, [1261](#)
    - transhiatal esophagectomy, [1262f](#)
  - nursing management, [1268](#)
  - squamous cell carcinoma, [1260](#)
  - stages of, [1260](#)
- Esophageal candidiasis, HIV infection and, [1008](#)
- Esophageal Doppler probes, [688](#)
- Esophageal manometry, [1244](#)
- Esophageal spasm, [1253–1254](#)
- Esophageal speech, [517](#)
- Esophageal sphincter
  - lower, [1210](#), [1224](#)
  - upper, [1224](#)
- Esophageal varices, [1375–1380](#)

- Esophagogastroduodenoscopy (EGD), [1221](#)
- Esophagojejunostomy, [1278](#)
- Esophagomyotomy, [1253](#)
- Esophagus, [1208](#)
- Esophagus, disorders of, [1212](#)
- Essential hypertension. *See* Primary hypertension
- Essential thrombocythemia (ET), [967–968](#)
  - assessment and diagnostic findings, [967](#)
  - clinical manifestations, [967](#)
  - complications, [967](#)
  - medical management, [967–968](#)
  - nursing management, [968](#)
- Estradiol, [1643](#)
- Estrogen, [1643](#)
- Etanercept, [1073t](#)
- Ethacrynic acid, [935c](#)
- Ethics committees, [26](#)
- Ethnicity, definition of, [72](#)
- Ethylenediaminetetraacetic acid (EDTA), [932](#)
- Etomidate, [427t](#)
- Etoposide, [321t](#)
- Etravirine (ETR), [1019t](#)
- Eupnea, [477](#)
- *Euthanasia, Assisted Suicide and Aid in Dying*, [387](#)
- Euthyroid, [1453](#)
- Everolimus, [1598t](#)
- Evidence-based practices (EBPs), [9–10](#)
  - bundles, [9](#)
- Evisceration, [1896](#)
- EVL. *See* Endoscopic variceal ligation
- Exacerbations, [1083](#)
- Exchange lists, for meal planning, [1494](#)
- Excision, [1865](#)
- Excisional biopsy, [313](#)
  - of breast, [1716](#)
- Exemestane [1734](#)
- External-beam radiation therapy (EBRT), [1279–1280](#)
- Ezetimibe, [672](#), [732t](#)

## F

- Family violence, abuse, and neglect
  - assessment and diagnostic findings, 2211
  - clinical manifestations, 2211
  - management, 2211–2212
- Fatigue
  - acute, 352
  - cancer-related, 352
  - management of, 352–354
  - sources of, 352c
- Fats
  - in diabetic diet, 1494
  - metabolism, role of liver in, 1366
  - wound healing and, 404t
- Fear, preoperative, 410
- Fecal incontinence, 1286–1287
  - assessment and diagnostic findings, 1288
  - clinical manifestations, 1288
  - medical management, 1289
  - nursing management, 1289
  - pathophysiology, 1290–1291
- Federal, state, and local responses to emergencies
  - federal agencies, 2219–2220
  - incident command system, 2220–2221
  - state and local agencies, 2220
- Female physiologic processes. *See also* Women's health
  - diagnostic studies for, 1652
    - colposcopy and cervical biopsy, 1653
    - computed tomography, 1655
    - cryotherapy, 1653
    - dilation and curettage, 1653
    - endometrial biopsy, 1653
    - endoscopic examinations, 1653–1654
    - hysterosalpingography, 1655
    - hysteroscopy, 1654
    - laparoscopy, 1653–1654
    - laser therapy, 1653
    - loop electrosurgical excision procedure, 1653
    - magnetic resonance imaging, 1655

- Pap smear, 1652
- ultrasonography, 1655
- genetic factors and, 1646c
- management of, 1655–1656
  - abortion, 1664–1666
  - contraception, 1658–1663
  - dyspareunia, 1658
  - ectopic pregnancy, 1669–1671
  - infertility, 1666–1668
  - menopause, 1671–1673
  - menstrual disorders, 1656–1658
  - menstruation, 1656
  - perimenopause, 1671
  - preconception/periconception health care, 1668–1679
- Female reproductive system, 1641
  - age-related changes in, 1644t
  - anatomy of, 1641
    - external genitalia, 1641–1642
    - ovaries, 1643
    - uterus, 1642–1643
    - vagina, 1642
  - function of
    - menopausal period, 1644
    - menstrual cycle, 1643–1644
    - ovulation, 1643
- Fentanyl, 213
  - characteristics of, 231t
  - equianalgesic dose chart for, 211
- Fiberglass, 1166
  - casts, 1166
- Fibrocystic breast changes, 1708
- Fibroid tumors, 1676
- Fine-needle aspiration (FNA), 1708
  - of breast, 1715
  - for thyroid masses, 1455
- First-intention healing
  - definition of, 437
  - postsurgical, 449
- Fissure, 1286
- Fistula, 1286



- anal, [1334](#)
- vagina, [1686–1687](#)
- Fitz-Hugh–Curtis syndrome, [1684](#)
- Flaccidity, [2076](#)
- Flaccid muscle, [2236](#)
- Flecainide, for atrial fibrillation, [701](#)
- Flucytosine, [1025](#)
- Fludarabine, [954](#), [959](#)
- Fluid balance
  - burn injuries, [1884](#)
  - prevention of infections, [1884](#)
- 5-Fluorouracil, [321t](#)
- Flutter valve, [627f](#)
- FNA. *See* Fine-needle aspiration
- Foam dressings, [1818](#)
- Focused assessment, [84](#)
- Focused assessment with sonography for trauma (FAST), [2194](#)
- Folate
  - deficiency, [887](#)
  - metabolism, [887](#)
- Food allergy, [1061–1062](#)
  - assessment and diagnostic findings, [1061](#)
  - clinical manifestations, [1061](#)
  - medical management, [1061](#)
  - nursing management, [1062](#)
- Food poisoning, [2205](#)
  - assessment, [2205](#)
- Foot and leg problems
  - diabetes and, [1525](#)
  - foot care tips, [1525](#)
  - management, [1525](#)
  - neuropathic ulcers, [1525f](#)
  - neuropathy and, [1524](#)
  - peripheral vascular disease and, [1525](#)
- Foot problems, [1119–1121](#)
  - callus, [1120](#)
  - causes of, [1120](#)
  - corn, [1120](#)
  - hallux valgus, [1121](#)
  - hammer toe, [1120](#)

- ingrown toenail, 1120
- Morton neuroma, 1121
- nursing management, 1122
- pes cavus, 1121
- pes planus, 1121
- plantar fasciitis, 1121
- Forced end expiratory flow, 486f
- Forced expiratory flow, 486f
- Forced expiratory volume, 486f
- Forced midexpiratory flow, 486f
- Forced vital capacity (FVC), 486f
- Foreign bodies
  - ear and, 1946
  - in esophagus, 1256
  - ocular, 1924–1926
- Fracture, 1159
  - clinical manifestation, 1159
  - closed, 1159
  - comminuted, 1159
  - emergency management, 1159
  - greenstick, 1157
  - healing, 1099
  - healing and complications, 1161
  - intra-articular, 1159
  - medical management, 1159–1160
  - nursing management, 1160–1161
  - open, 1159
  - reduction, 1152
  - types of, 1159
- Fracture Risk Assessment Tool (FRAX), 1104
- Frank–Starling law, 656
- Frey syndrome, 1228
- Frostbite
  - assessment and diagnostic findings, 2197
  - management, 2197–2198
- FSH. *See* Follicle-stimulating hormone
- Fulminant hepatic failure
  - treatment, 1393
  - viral hepatitis and, 1393
- Fusion inhibitor, 1020t

## G

- Gabapentin, 217
- Gallbladder, 1365
  - anatomy of, 1417
  - disorders, 1418
    - cholecystitis, 1418
    - cholelithiasis, 1418–1426
  - function of, 1417
  - surgery
    - nursing process, 1426–1428
    - patient education, 1428c
- Gallium scans, lung, 490
- Gallop sounds, heart, 669
- Gamete intrafallopian transfer (GIFT), 1668
- Gamma-aminobutyric acid (GHB), 2097
- Gamma-glutamyl transferase (GGT), 1369
- Gamma-hydroxybutyrate, 2213
- Gamma knife radiosurgery, 2109
- Gamma rays, 317
- Ganciclovir (Cytovene), 1933
- *Gardnerella*-associated bacterial vaginosis, 1678t
- Gastrectomy, for gastric cancer, 1278–1279
- Gastric acid stimulation test, 1225
- Gastric analysis, 1225
- Gastric cancer, 1225
- Gastrocolic reflex, 1286
- Gastroduodenal, 1224
- Gastroesophageal reflux disease (GERD), 1228
- Gemcitabine, 321t
- Gilbert syndrome, 1372
- Gingivitis, 1228
- Glare testing, 1904
- Greenstick fractures, 1159
- Gynecomastia, 1708

## H

- Habit retraining, 1614c
- Habitual abortion, 1664
- Hair
  - color, 1800

- follicles, [1800](#)
- function, [1800](#)
- growth, [1800](#)
- Halitosis, [1228](#)
- Hallux valgus, [1167](#), [1167f](#)
- Headache, [2115](#)
  - assessment, [2027–2028](#)
  - classification of, [2026c](#)
  - manifestations, [2027](#)
  - nursing management, [2026](#)
  - pathophysiology, [2020–2021](#)
- Head injury, [2056](#)
  - assessment parameters, [2062f](#)
  - brain injury, types of, [2058](#)
  - in metabolic changes, [2064](#)
  - prevention, [2057c](#)
- Heart disease, [680](#)
- Heart murmurs, [680](#)
- Heart rate, medications control, [701](#)
- Hemorrhoids, [1286](#)
- HER-2/neu protein, [1708](#)
- Hernia, [1228](#)
- Hyperglycemia, [405](#)
- Hyphae, [1676](#)
- Hypoglycemia, [405](#)
- Hypovolemic shock, [2204](#)
- Hysterectomy, [1676](#)
  - definition of, [1676](#)

## I

- Idarubicin, [321t](#)
- Ifosfamide, [321t](#)
- IGRT. *See* Image-guided radiation therapy
- Ileal conduit, [1604](#)
  - complications, [1608](#)
  - nursing management, [1611–1613](#)
    - fluid intake and relieving anxiety, [1629](#)
    - home, community-based, and transitional care, [1629–1630](#)
    - ostomy appliance, selection of, [1629](#)
    - stoma and skin care, [1629](#)

- urine testing and caring for ostomy, 1629
- patient education, 1630c
- Ileostomy, 1286
  - home care checklist, 1325c
  - nursing care plan, 1319c-1321c
  - in older adults, 1324
  - postoperative care, 1321–1323
    - changing appliance, 1323
    - complications prevention, 1324
    - continuing and transitional care, 1324
    - dietary and fluid needs, 1323
    - drainage from ileostomy, 1322
    - emotional support, 1322
    - irrigating colostomy, 1322
    - NG suction, 1322
    - patient education, 1324
    - skin and stoma care, 1323
  - preoperative care, 1321
- Immune function, preoperative assessments, 405
- Immune hemolytic anemias, 926–927
  - assessment and diagnostic findings, 926
  - clinical manifestations, 926
  - medical management, 926
  - nursing management, 926
- Immune response, 987
  - acquired, 988
  - cellular, 988
  - chemical barriers and, 988
  - complement-mediated, 988f
  - humoral, 991–993
  - natural, 988
  - physical surface barriers and, 989
  - regulation of, 989
  - stages of, 989
    - effector stage, 991
    - proliferation stage, 991
    - recognition stage, 991
    - response stage, 991
- Immune system, 987
  - anatomy of, 987–988

- bone marrow, 987
- lymphoid tissues, 987
- assessment of, 996
  - allergies, 998
  - disorders and diseases, 998
  - gender, 996
  - health history, 996–1000
  - immunization, 998
  - infection, 998
  - lifestyle factors, 1000
  - medications and blood transfusions, 1000
  - nutrition, 997–998
  - older adults, 996–997
  - physical assessment, 1001
  - psychoneuroimmunologic factors, 1001
- function of, 989
  - acquired immunity, 989
  - age-related changes in, 996t
  - cellular response, 992–994
  - complement System, 993
  - gender and, 996
  - humoral response, 988–990
  - immunomodulators, 994
  - natural immunity, 988
  - response to invasion, 989
- nursing management, 1001–1002
- Immune thrombocytopenic purpura (ITP), 933–934
  - assessment and diagnostic findings, 933
  - clinical manifestations, 933
  - medical management, 932–933
  - nursing management, 933
  - pathophysiology, 933
  - primary, 933
- Immunotherapy
  - for allergic disorders, 1052–1053
  - epicutaneous, 1053
  - indications and contraindications, 1053c
  - subcutaneous, 1053
  - sublingual, 1053
- Induced abortion, 1665c

- dilation and evacuation, 1665c
- labor induction, 1665c
- medical abortion, 1665c
- medical management, 1665–1666
- nursing management, 1666
  - patient education, 1666
  - psychological support, 1666
- types of, 1665c
- vacuum aspiration, 1665c
- Infections
  - after liver transplantation, 1410
  - cultures, 488
  - local signs of, 456
  - surgical site, 455
- Infertility, 1666
  - definition of, 1666
  - diagnostic findings, 1666
  - male factors in, 1666
  - medical management, 1667–1668
    - artificial insemination, 1667
    - assisted reproductive technologies, 1667
    - pharmacologic therapy, 1667
  - nursing management, 1668
  - ovarian and ovulation factors in, 1667
  - primary, 1666
  - secondary, 1666
  - tubal and uterine factors in, 1667
- Infiltration
  - assessment of, 268c
  - and extravasation, 268
- Inflammation, 1068
  - cellular injury in, 108–109
  - chemical mediators of, 108
  - healing, 109
  - regeneration, 109
  - replacement, 109
  - responses to, 108f
  - systemic response to, 108–109
  - types of, 109
- Inflammatory bowel disease (IBD), 1286

- Crohn's disease, 1305 (*See also* Crohn's disease)
- home care checklist, 1312c
- medical management, 1308–1310
  - nutritional therapy, 1308–1309
  - pharmacologic therapy, 1308
- nursing process, 1310–1312
  - anxiety reduction, 1311
  - assessment, 1310
  - complications management, 1311
  - continuing and transitional care, 1312–1313
  - coping measures, 1311
  - diagnosis, 1310
  - elimination patterns, 1310
  - evaluation, 1313
  - fluid intake, 1311
  - nursing interventions, 1316–1317
  - nutrition therapy, 1311
  - patient education, 1312
  - planning and goals, 1316
  - rest promotion, 1311
  - skin breakdown prevention, 1311
- prevalence of, 1304
- surgical management, 1309–1310
  - continent ileostomy, 1310
  - indications for, 1309
  - restorative proctocolectomy with IPAA, 1309
  - total colectomy with ileostomy, 1309
- ulcerative colitis, 1305 (*See also* Ulcerative colitis)
- Informed consent
  - definition of, 396
  - valid, 401c
- Inheritance patterns, 121–124
  - autosomal dominant inheritance, 121–122
  - autosomal recessive inheritance, 123
  - complex genetic conditions, 124
  - multifactorial inheritance, 124
  - nontraditional inheritance, 124
  - x-linked inheritance, 123
- Insulin, 1499
  - complications, 1502



- intermediate-acting, 1500
- lipodystrophy, 1502
- local allergic reaction, 1502
- preparations, 1501t
- rapid-acting, 1501t
- regimens, 1502
  - conventional, 1502
  - intensive, 1502
- resistance, 1502
- and self-monitoring of blood glucose, 1497
- short-acting, 1500
- skin preparation, 1502
- Somogyi effect, 1502
- syringes, 1502
- systemic allergic reactions, 1502
- type 1 diabetes and, 1500
- type 2 diabetes and, 1499
- waning, 1502
- withdrawing, 1502
- Intestinal obstruction, 1302
  - causes of, 1302
  - functional/paralytic obstruction, 1302
  - large bowel obstruction, 1304
  - mechanical causes of, 1303t
  - mechanical obstruction, 1302
  - small bowel obstruction, 1303–1304
- Intra-abdominal injuries
  - assessment and diagnostic findings, 2195
    - genitourinary injury, 2195
    - internal bleeding, 2195
    - intraperitoneal injury, 2195
  - management, 2195
- Intra-articular fractures, 1159
- Intracranial pressure (ICP), 2056
  - increased, 1996–2009
    - assessment, 2001
    - complications, 2001
    - management, 2001–2004
    - manifestations, 2000
    - monitoring of, 2001

- nursing process, [2004–2008](#)
  - pathophysiology, [2000](#)
- Intracranial surgery
  - home care check list, [2015c](#)
  - nursing process, [2012–2016](#)
  - postoperative management, [2011](#)
  - preoperative management, [2011](#)
- Intraoperative phase, [396](#)
  - nursing activities in, [398c](#)
  - timing of, [397](#)
- Intrauterine device (IUD), [1660](#)
  - hormonal, [1660](#)
  - nonhormonal, [1660](#)
- Intravenous (IV) solutions therapy
  - air embolism and, [267](#)
  - blood clots and, [269](#)
  - and bloodstream infections, [267](#)
  - complications of, [267–269](#)
  - hypertonic solutions, [266](#)
  - hypotonic solutions, [266](#)
  - isotonic solutions, [264–266](#)
  - nursing management of patient, [266–269](#)
  - patient education, [269](#)
  - self-care, [269](#)
  - transitional care, [269](#)
  - types of, [264–266](#)
- Ionizing radiation
  - carcinogenesis and, [304–305](#)
  - types of, [304](#)
- Irinotecan, [321t](#)
- IRIS. *See* Integrated Risk Information System
- Iron, [886](#)
  - absorption, [887](#)
  - overload, [903](#)
  - stores and metabolism, [887](#)
  - supplementation, [914](#)
- Iron deficiency anemia, [914](#)
  - assessment and diagnostic findings, [914](#)
  - causes of, [914](#)
  - clinical manifestations, [914](#)

- medical management, [914–915](#)
- nursing management, [915–916](#)
- Irritable bowel syndrome (IBS), [1286](#)
  - abdominal pain and, [1294](#)
  - assessment and diagnostic findings, [1293–1294](#)
  - clinical manifestations, [1293](#)
  - medical management, [1294–1295](#)
  - nursing management, [1295](#)
  - pathophysiology, [1293](#)
- Ischemic stroke
  - assessment, [2035–2036](#)
  - clinical manifestations, [2033](#)
  - medical management, [2036](#)
  - pathophysiology, [2032–2033](#)
  - risk factors, [2035c](#)
  - self care, [2029](#)
- IV ibutilide (Corvert), for atrial fibrillation, [701](#)
- Ixabepilone, [321t](#)
- Ixazomib [977](#), [979t](#)

## K

- Kaposi sarcoma (KS), [1022](#)
- Kegel exercises, [1613](#)
- Keratin, [336](#)
- Keratinocytes, [336](#)
- Keratoconus, [1918](#)
- Keratolytic ointment, for callus, [1120](#)
- Keratoprosthesis, [1919](#)
- Kernig sign, [2089](#)
- Keratoconjunctivitis sicca, [1085](#)
- Ketamine, [2213](#)
- Ketoconazole, [1477](#)

## L

- Labetalol, for hypertension, [874t](#)
- Labia majora, [1641](#)
- Labia minora, [1641](#)
- Labor induction, [1665c](#)
- Labyrinthitis, [1957](#)
- Lactational abscess, [1717–1718](#)

- *Lactobacillus acidophilus*, 1677
- Lactose intolerance, 1032, 1136, 1295c, 1296t
- Lactulose, in hepatic encephalopathy, 1382
- Lamellae, 1098
- Laminar airflow units, 422
- Lamivudine (3TC), 1018t
- Langerhans cells, 1799
- Language, “people-first,” 145c
- Lanreotide, 1451
- Lansoprazole
  - for gastritis, 1269t
  - for GERD, 1258t
- Laparoscopes, 420
- Laparoscopic cholecystectomy, 1421, 1422, 1424,
- Laparoscopic cryomyolysis, 1693
- Laparoscopic myolysis, 1693
- Laparoscopic myomectomy, 1693
- Laparoscopic radical prostatectomy, 1756, 1762
- Laparoscopy, 1225, 1653–1654, 1654f
- Large bowel obstruction, 1304
  - assessment and diagnostic findings, 1305
  - clinical manifestations, 1304–1305
  - medical management, 1305
  - nursing management, 1305
  - pathophysiology, 1304
- Large intestine, 1208, 1209
  - anatomy and blood supply of, 1210f
- Laryngeal cancer, 514c
- Laryngeal mask airway (LMA), 420
  - Laryngeal obstruction, 513–514
- Laryngectomy, 494, 515
- Laryngitis, 497, 507–509
- Larynx, anatomy, 464
- Laser ablation, 859
- Laser-assisted in situ keratomileusis, 1920, 1920f
- Laser hyperthermia, for hepatic metastases, 1406
- Lasers, risks of, 423
- Laser therapy, 580, 859
- L-asparaginase, 322
- Latent autoimmune diabetes of adults (LADA), 1488, 1491

- Latent reservoir, 1013
- Lateral collateral ligament (LCL), 1156
  - injury, 1156
- Lateral epicondylitis, 1155
- Late-stage illness, 389
- Latex allergy, 1062–1064
  - assessment and diagnostic findings, 1063
  - clinical manifestations, 1062–1063
  - medical management, 1063
  - nursing management, 1064
- Latex condom, 1662
- Lavage, 1223, 1256
- Laxatives, 1336
- Leading Health Care Indicators (LHIs), 8
- Leaflet repair, 772, 773f
- Learning
  - definition of, 58
  - disabilities, 58–60
    - developmental disability, 61t
    - input disability, 61t
    - output disability, 61t
    - motivation for, 58
- Learning readiness, 59–60
- Ledipasvir-sofosbuvir (Harvoni), 1391
- Leflunomide (Arava), 1072t
- Left atrial appendage occlusion (LAAO), 700, 702–703
- Left-sided heart failure, 472, 484t, 796. *See also* Heart failure (HF)
- Left ventricular failure. *See* Left-sided heart failure
- Legal issues, end-of-life care and, 190
- Legg–Calve–Perthes disease, 1126
- *Legionella pneumophila*, 2175
- Legionnaires disease, 2175
- Leg ulcers, 854–858
  - arterial ulcers, 855
  - assessment and diagnostic findings, 855
  - clinical manifestations, 854–855
  - compression therapy, 855
  - débridement, 855–856
  - hyperbaric oxygenation, 857
  - negative pressure wound therapy, 857

- nursing process, 857–858
- pathophysiology, 854
- pharmacologic therapy, 855
- stimulated healing, 856–857
- topical therapy, 856
- venous ulcers, 855
- wound dressings, 856
- Leiomyoma, 1692
- Lenalidomide, 963
- Lepirudin, for venous thromboembolism, 849t
- Leptin, 1345
- Lesbians, gay, bisexual, and transgender (LGBT), 1011, 1649–1650, 1781
- Letrozole, 1734, 1734t
- Leukapheresis, 896t
- Leukemia, 951
  - acute, 951
    - lymphocytic leukemia, 956–957
    - myeloid leukemia, 955–956
  - chronic, 957
    - lymphocytic leukemia, 957–959
    - myeloid leukemia, 955–956
  - nursing process, 959–962
    - assessment, 959
    - diagnosis, 960
    - evaluation, 962
    - nursing interventions, 960–962
    - planning and goals, 960
- Leukemia cutis, 953f
- Leukocyte adhesion deficiency (LAD), 1006t
- Leukocytes. *See* White blood cells (WBCs)
- Leukocytosis, 951
- Leukopenia, 891, 1025, 1084
- Leukoplakia, 1230t
- Leukopoor, 899
- Leukotriene modifiers, 637t
- Leukotrienes, 633, 1041
- Leuprolide, 1135, 1693
- Levalbuterol, 634
- Levator ani, 1642

- Level of consciousness (LOC), [1218](#), [1222](#)
- Levin tube, [1063t](#)
- Levocetirizine, [1051t](#)
- Levodopa, [2124](#)
- Levofloxacin
  - in impetigo, [1835](#)
  - for urinary tract infections, [1608t](#)
- Levothyroxine, [406t](#), [1457](#)
- Leydig cell tumors, [1771](#)
- LGBT. *See* Lesbians, gay, bisexual, and transgender
- Lice infestation, [1838–1840](#)
- Lichenification, [1808t](#)
  - definition of, [1815](#)
- Lichen planus, [1231t](#)
- Licox catheter system, [2003](#)
- Lidocaine, [180t](#), [698t](#)
  - Lidocaine patches, [1166](#)
- Li-Fraumeni syndrome, [129t](#)
- Ligaments, [464](#), [1100](#)
- Ligation and stripping, [859](#)
- Lightning injuries, [1870c](#)
- Liniments, [1819](#)
- Lipase, [1210](#), [1217](#)
- Lipid profiles, [1734](#)
- Lipoatrophy, [1016](#), [1021f](#), [1502](#)
- Lipohypertrophy, [1016](#), [1502](#)
- Lipoproteins, [672](#)
  - atherosclerosis development and, [729f](#)
  - high-density, [725](#), [727](#)
  - low-density, [725](#), [726](#)
- Liposomal therapy, for ovarian cancer, [1702](#)
- Liposomes, [1702](#)
- Lipotropin, [1450](#)
- Lips, [1215](#)
- Liraglutide, [1350t](#)
- Lisinopril
  - for heart failure, [800t](#)
  - for hypertension, [872t](#)
- Lithotomy position, [435](#)
- Lithotripsy, [1235](#), [1421](#), [1422](#)

- Liver
  - age-related changes in, 1457
  - anatomy of, 1365–1366, 1365f
  - assessment of, 1365–1369
    - health history, 1367
    - physical assessment, 1368–1369
  - cancer of, 1404–1407
  - dysfunction, 1404 (*See specific diseases*)
  - enlargement, 1394
  - functions of, 1366–1367
    - ammonia conversion, 1366
    - bile formation, 1366
    - bilirubin excretion, 1366
    - drug metabolism, 1367
    - fat metabolism, 1366
    - glucose metabolism, 1366
    - protein metabolism, 1366
    - vitamin and iron storage, 1366
  - laboratory tests to assess function of, 1370t
  - palpation of, 1394
  - tenderness of, 1369
- Liver abscesses, 1412–1413
  - amebic, 1412
  - assessment and diagnostic findings, 1413
  - clinical manifestations, 1413
  - medical management, 1413
  - nursing management, 1413
  - pathophysiology, 1412
  - pyogenic, 1412
- Liver biopsy, 1369
- Liver disease, 939
- Liver metastases, 1405–1407
  - assessment and diagnostic findings, 1405
  - clinical manifestations, 1405
  - medical management, 1405
    - chemotherapy, 1405–1406
    - immunotherapy, 1406
    - laser hyperthermia, 1406
    - percutaneous biliary drainage, 1406
    - radiation therapy, 1405



- transcatheter arterial embolization, 1406
- nursing management, 1407
  - continuing and transitional care, 1407
  - patient education, 1407
- surgical management, 1406–1407
  - liver transplantation, 1406–1407
  - lobectomy, 1406
  - local ablation, 1406
- Liver transplantation, 1407–1412
  - biliary anastomoses, 1408
  - complications, 1409
    - bleeding, 1409–1410
    - infection, 1410
    - LDLT procedure, 1410
    - rejection, 1410
  - end-stage liver disease and, 1408
  - ethical issues related to, 1408
  - immunosuppressive agents after, 1408
  - indications for, 1408
  - living donor, 1409
  - MELD score, 1408
  - Milan criteria, 1406
  - nursing management, 1410
    - continuing and transitional care, 1412
    - patient education, 1411–1412
    - postoperative, 1411
    - preoperative, 1411
  - split-liver transplant, 1409
  - surgical procedure, 1408–1412
  - triple therapy, 1408
- Living arrangements, 176–178
- Living donor liver transplantation (LDLT), 1409
- Living ligature, 1642
- Living will, 29
- LMM. *See* Lentigo maligna melanoma
- Lobectomy, 581c
- Lobular carcinoma in situ (LCIS), 1719
- Lobules, liver, 1365
- Local adaptation syndrome, 101
- Local anesthesia, 313

- Local conduction blocks, [424](#), [429](#)
- Locked-in syndrome, [1993](#)
- Long-acting beta-2 adrenergic agonists (LABA), [616](#)
- Long-acting muscarinic antagonists (LAMA), [616](#)
- Long-acting reversible contraception (LARC), [1660](#)
  - intrauterine device, [1660](#)
  - implant, [1660](#)
- Long-term care facilities, older adults and, [172](#)
- Look Good Feel Better programs, [1241](#)
- Loop diuretics, for hypertension, [872t](#)
- Loop electrocautery excision procedure (LEEP), [1676](#), [1696](#)
- Loose bodies, [1117](#)
- Loperamide, [1291](#)
- Lopinavir + ritonavir (LPV/r), [1019t](#)
- Loratadine, [1051t](#)
- Lorazepam, [381](#)
- Lorcaserin, for obesity, [1350t](#)
- Lordosis, [1105](#), [1106f](#)
- Losartan
  - for heart failure, [800t](#)
  - for hypertension, [872t](#)
- Lotions, wound treatment, [1819–1820](#)
- Low back pain, [1113–1117](#)
  - assessment and diagnostic findings, [1114](#)
  - causes of, [1113](#)
  - clinical manifestations, [1114](#)
  - diagnostic procedures for, [1114c](#)
  - medical management, [1114–1115](#)
  - nursing management, [1115–1117](#)
  - pathophysiology of, [1114](#)
  - preventing acute, [1116c](#)
- Low-density lipoprotein (LDL), [725](#), [726](#)
  - in CAD, [727](#)
- Lower airway injuries, burn-related, [1872](#)
- Lower motor neuron, [1976](#)
- Lower respiratory tract disorders, [527–598](#)
  - atelectasis, [527–530](#)
  - chest trauma, [589–598](#)
  - chest tumors, [577–589](#)
  - pneumoconiosis, [576–577](#)

- respiratory infections, [495](#)
- Low-molecular-weight heparin (LMWHs), [847](#)
  - for venous thromboembolism, [848t](#)
- Low-profile gastrostomy devices (LPGDs), [1250](#)
- Lubiprostone (Amitiza), [1290t](#), [1295](#)
- Lumbar disc excision, [2138](#)
- Lumbar disc herniations, [2136](#)
- Lumbar puncture
  - cerebrospinal fluid analysis and, [1990](#)
  - headache following, [1990](#)
- Lumbar spine vertebrae, [2126f](#)
- Lumbar support belts, in low back pain, [1115](#)
- Lumen, [1219](#), [1244](#)
- Lund and Browder method, [1868–1869](#)
- Lung abscess, [551–552](#)
  - assessment, [552](#)
  - clinical manifestations, [552](#)
  - medical management, [552](#)
  - nursing management, [552](#)
  - pathophysiology, [551](#)
  - prevention, [552](#)
- Lung cancer, [577–588](#)
  - metastasis, [579f](#)
  - radiation therapy, [585–588](#)
  - survival rates, [578t](#)
- Lungs
  - airway resistance, [466](#)
  - anatomy, [464–465](#)
  - capacity, [466](#)
  - compliance, [466](#)
  - lobes of, [464](#), [478c](#)
  - mechanoreceptors in, [470](#)
  - positioning, [464](#)
  - reduction, [581c](#)
  - volume, [466](#)
- Lung scans, [490](#)
- Lung transplantation, [618](#)
- Lupus nephritis, [1083](#)
- Luteal phase, [1644](#)
- Luteinizing hormone (LH), [1449](#), [1643](#)

- Luteinizing hormone–releasing hormone (LHRH) agonists, 1761
- Lyme disease, 708
  - stages of, 2202
- Lymph, 818, 820
- Lymphadenitis, 860
- Lymphadenopathy, 953
- Lymphangitis, 860
- Lymphatic disorders, 860–861
- Lymphatic system, 818
- Lymphatic vessels, 819
- Lymphedema, 860–861
- Lymph node biopsy, 492
- Lymph nodes, 993, 996
- Lymphocytes, 916, 917, 930
- Lymphoid, 951
- Lymphoid stem cells, 889, 951
- Lymphoid tissues, 987
- Lymphokines, 993
- Lymphomas, 251
  - AIDS-related, 1023
  - classification of, 306t
  - Hodgkin, 969–972
  - non-Hodgkin, 972–974
- Lymphopenia, 930
- Lymphoscintigraphy, 826
- Lynch syndrome, 125, 1219. *See also* Colorectal cancer
- Lyric, 1959, 1960
- Lysergic acid diethylamide (LSD), 2214
- Lysis, 323

## M

- Macrophages, 633, 726
- Macule, 1296
- Magic mouthwash, 1237
- Magnesium
  - deficit, 252t
  - excess, 252t
- Magnesium-based antacids, 253
- Magnesium-free dialysate, 254
- Magnesium hydroxide, 1290t

- Magnesium imbalance, [251–254](#)
  - hypermagnesemia, [253–254](#)
  - hypomagnesemia, [252–253](#)
- Magnesium sulfate, in cardiopulmonary resuscitation, [814t](#)
- Magnetic resonance angiography (MRA), [826](#)
- Magnetic resonance–guided focused ultrasound surgery (MRgFUS), [1693](#)
- Magnetic resonance imaging–guided core biopsy, of breast, [1715t](#)
- Malabsorption, [350](#)
- Malaria, [2176](#)
- Male artificial urinary sphincter, [1615f](#)
- Male breast, diseases of, [1739–1740](#)
- Male condom, [1662](#)
- Male reproductive system, [1744–1777](#)
  - age-related changes in, [1745t](#)
  - assessment
    - BETTER model, [1746](#)
    - digital rectal examination, [1746](#)
    - health history, [1745–1746](#)
    - physical examination, [1746](#)
    - PLISSIT model, [1746](#)
    - testicular self-examination, [1772c](#)
  - diagnostic evaluation, [1747](#)
    - prostate fluid or tissue analysis, [1747](#)
    - prostate-specific antigen test, [1747](#)
    - tests of male sexual function, [1747](#)
    - ultrasonography, [1747](#)
  - disorders of, [1751–1752](#)
    - circumcision, [1775](#)
    - ejaculation, disorders of, [1751–1752](#)
    - epididymitis, [1770](#)
    - erectile dysfunction, [1747–1751](#)
    - genetic factors in, [1751c](#)
    - hydrocele, [1774](#)
    - orchitis, [1769–1770](#)
    - penile cancer, [1775–1776](#)
    - Peyronie’s disease, [1777](#)
    - phimosis, [1775](#)
    - priapism, [1776](#)
    - prostatic disorders, [1752–1769](#)

- sexually transmitted infections, 1752
- testicular cancer, 1771–1774
- testicular torsion, 1770–1771
- urethral stricture, 1777
- varicocele, 1774
- structures of, 1744f
- Male sterilization. *See* Vasectomy
- Malignant bone tumors, 1146
- Malignant cells, characteristics of, 308
- Malignant, definition of, 301
- Malignant hyperthermia, 432–435
- Malignant Hyperthermia Association of the United States (MHAUS), 432
- Malignant skin tumors, 1852
  - basal cell carcinoma, 1852
  - melanoma, 1855–1859
  - squamous cell carcinoma, 1852
- Malunion, 1164
- Mammography, 1713
- Mammoplasty, 1709
  - augmentation, 1739
  - mastopexy, 1739
  - reduction, 1739
- Mandibular fractures, 1234
- Manual traction, 1159, 1175
- Maraviroc (MVC), 1020t
- Marburg virus, 2147t
- Marshall–Bonney maneuver, 1546
- Marsupialization, 1691
- Masks, 421
- Maslow hierarchy of needs, 6
- Mass casualty incident (MCI), 2218
  - triage categories, 2223t
- MAST. *See* Michigan Alcohol Screening Test
- Mastalgia (breast pain), 1718
- Mast cells, 108, 296
- Mast cell stabilizers, for allergic rhinitis, 1051–1052
- Mastectomy, 1709
  - total, 1723
- Mastitis, 1717

- Mastoidectomy, [1950](#)
- Mastopexy, [1739](#)
- Material safety data sheet (MSDS), [2218](#), [2227](#)
- Maximal voluntary ventilation, [486t](#)
- MDS. *See* Myelodysplastic syndromes
- Mean arterial pressure (MAP), [275](#)
- Measles, mumps and rubella (MMR) vaccine, [2156](#)
- Measures Application Partnership (MAP), [275](#)
- Mechanical ventilation, [559–563](#)
  - classification, [559–561](#)
  - indications, [559](#), [560c](#)
  - troubleshooting problems, [564t](#)
  - ventilator modes, [561–562](#)
- Medial collateral ligament (MCL), injury to, [1156](#)
- Medial epicondylitis, [1154](#), [1155](#)
- Mediastinal tumors, [588](#), [589](#)
- Mediastinoscopy, [492](#), [493](#)
- Mediastinum, [465](#)
- Mediating process, [99](#)
- Medicaid
  - older adults and, [189](#)
  - reimbursement by, [52](#)
- Medical abortion, [1665](#), [1666](#)
- Medical nutrition therapy (MNT), [1487](#), [1493](#)
- Medical-surgical nursing, [24](#)
- Medicare, [371](#), [372](#)
- Medicare Hospice Benefit, definition of, [373](#)
- Medications
  - analgesic, [208–218](#)
  - to control postoperative nausea and vomiting, [441t](#)
  - drug interactions, [549t](#)
  - intravenous, [426t](#)
  - ocular, [1907–1909](#)
  - over-the-counter, [658](#)
  - preanesthetic, [413](#)
  - prescriptions, [76](#)
- Mediterranean Diet, [730](#)
- MedPAC. *See* Medicare Payment Advisory Commission
- Medroxyprogesterone, [1135](#)
- Medullary depression, [424](#)

- Megacolon, [1307](#)
- Megakaryocytes, [890](#)
- Megaloblastic anemia, [909](#), [912](#), [917–919](#)
  - clinical manifestations, [918](#)
  - folic acid deficiency and, [917](#)
  - medical management, [918](#)
  - nursing management, [918–919](#)
  - vitamin B<sub>12</sub> deficiency and, [917–918](#)
- Megaloblasts, [888](#)
- Megestrol acetate, [1025](#)
- MEI. *See* Middle ear implantation
- Meiosis, [120](#)
- Melanin, [1798](#), [1799](#)
- Melanocytes, [1799](#)
- Melanocyte-stimulating hormone, [1799](#)
- Melanomas, [1855](#)
- Melena, [912](#)
- Melphalan, [321t](#)
- Membranous labyrinth, [1937](#)
- Memory, [178](#)
- Memory cells, [986](#), [993](#)
- Menarche, [1640](#), [1655](#)
- Ménière disease, [1935](#)
  - definition of, [1953](#)
  - dietary guidelines, [1954c](#)
- Meningeal infections, [2089](#)
- Meningeal irritation, [2089](#), [2089f](#)
- Meninges, [1969](#)
  - arachnoid, [1969](#), [1969f](#), [1970](#)
  - dura mater, [1969–1970](#), [1969f](#)
  - pia mater, [1969](#), [1969f](#), [1970](#)
- Meningiomas, [2114](#)
- Meningitis, [2088–2092](#)
  - cerebrospinal fluid values diagnostic, [2090t](#)
  - clinical manifestations, [2089](#)
  - gonococcal, [2171](#)
  - pathophysiology, [2089](#)
- Meningococcus, vaccination, [2151](#)
- Meniscal injuries, [1157](#)
- Menisci, [1154](#)



- injuries to, [1154–1157](#)
- Menopause, [1640](#), [1671–1673](#)
  - clinical manifestations, [1671–1672](#)
  - definition of, [1671](#)
  - health promotion strategies, [1672c](#)
  - medical management, [1672](#)
    - behavioral strategies, [1673](#)
    - bone health, [1673](#)
    - cardiovascular health, [1673](#)
    - hormone therapy, [1672–1673](#)
    - hot flashes and, [1673](#)
    - nutritional therapy, [1673](#)
  - nursing management, [1673](#)
  - postmenopausal bleeding, [1671](#)
  - psychological considerations, [1672](#)
- Menorrhagia, [1658](#)
- Menotropins, [1667c](#)
- Menstrual cycle, [1643–1644](#)
  - hormonal changes during, [1644t](#)
- Menstruation, [1640](#)
  - cultural considerations, [1656](#)
  - psychosocial considerations, [1655–1656](#)
- Mental health, [142](#), [143](#)
  - of older adults, [180–186](#)
- Mental health disabilities, communicating with people having, [149c](#)
- Mental status, [664](#)
- Meperidine, [214](#)
- Mephedrone, [2205](#)
- Mercaptans, [1381](#)
- 6-Mercaptopurine, [321t](#)
- Merkel cells, [1798](#), [1799](#)
- Meshed graft, split-thickness, [1882f](#)
- Metabolic acidosis, end-stage kidney disease and, [1570](#)
- Metabolic bone disorders, [1134–1142](#)
  - osteomalacia, [1140–1141](#)
  - osteoporosis, [1134–1140](#)
  - Paget disease, [1141–1142](#)
- Metabolic syndrome, [725](#), [727](#)
- <sup>131</sup>I-metaiodobenzylguanidine (MIBG) scintigraphy, [1475](#)
- Metanephrine (MN), [1475](#)

- Metaplasia, definition of, [97](#)
- Metaproterenol sulfate, [635t](#)
- Metastasis, definition of, [301](#)
- Metastatic bone disease, [1146](#)
- Metastatic skin tumors, [1859](#)
- Metformin (Glucophage, Glucophage XL, Fortamet), [1491](#)
- Metformin with glyburide (Glucovance), [1505t](#)
- Methadone, [214](#)
- Methicillin-resistant *Staphylococcus aureus* (MRSA), [533](#), [1126](#), [2144](#)
  - description of, [2154–2155](#)
- Methimazole, [1463](#)
  - for hyperthyroidism, [1464t](#)
- Methohexital sodium, [427t](#)
- Methotrexate, [320](#), [321t](#)
- Methylcellulose, [1290t](#)
- Methyldopa (Aldomet)
  - for hypertension, [874t](#)
- 3,4-methylenedioxymethamphetamine (MDMA), [2205](#)
- 3,4-methylenedioxypyrovalerone (MDPV), [2205](#)
- Methylprednisolone (Medrol), [635t](#)
- Methyl tertiary butyl ether (MTBE), [1423](#)
- Methylxanthines, [935c](#)
- Metoclopramide, [441t](#)
  - for GERD, [1258t](#)
- Metocurine, [427t](#)
- Metolazone
  - for heart failure, [800t](#)
  - for hypertension, [872t](#)
- Metoprolol, [698t](#)
  - for angina, [734t](#)
  - for hypertension, [873t](#)
- Metoprolol, [698t](#)
- Metronidazole,
  - for bacterial vaginosis, [1679](#)
  - for gastritis, [1269t](#)
- Metropolitan Medical Response Teams Systems, [2220](#)
- Metrorrhagia, [1658](#)
- MEWS. *See* Modified Early Warning System
- Michigan Quality Improvement Consortium (MQIC), [1115](#)
- Miconazole (Monistat), for candidiasis, [1678](#)

- Microalbuminuria, [1522](#)
- Microbicides, [1011](#)
- Microbiome, [1208](#), [1212](#)
- Microbiota, [1208](#), [1212](#)
- Micrographia, [2124](#)
- Microhemagglutination test for *Treponema pallidum* (MHA-TP), [2169](#)
- Micropapillary invasive ductal carcinoma, [1720](#)
- Micturition, [1534](#), [1537](#)
- Midazolam, [427t](#)
- Middle ear
  - anatomy of, [1937](#)
  - conditions of, [1948–1952](#)
  - endoscopy, [1943](#)
  - masses of, [1939](#)
- Middle ear implant (MEI), [1960](#)
- Mifepristone
  - for abortion, [1665c](#)
  - for fibroids, [1693](#)
- Miglitol, [1505t](#)
- Migraine, [1992](#), [2026](#)
  - headache, [2027](#)
  - phases, [2027](#)
  - types, [2027](#)
- Milk thistle (*Silybum marianum*), [1395](#)
- Miller–Fisher variant, [2103](#)
- Milrinone, [803](#)
- Mineralocorticoids, [1445](#), [1474](#)
- Mineral oil, [1290t](#)
- Minimally conscious state, [1992](#), [1993](#)
- Minimally invasive surgery, [396](#)
- Mini-Mental State Examination (MMSE), [178](#)
- Minocycline, [1058](#)
- Minorities, [73](#), [76](#)
- Minoxidil, for hypertension, [874t](#)
- Minute ventilation, [485](#)
- Mirtazapine, [181](#)
- Misoprostol
  - for abortion, [1665c](#)
  - for gastritis, [1269t](#)
- Mithramycin, [251](#)

- Mitomycin, [323](#), [324](#)
- Mitomycin C, [324](#)
- Mitosis, [120](#)
- Mitotic spindle inhibitors, [321t](#)
- Mitoxantrone, [2097](#)
- Mitral (apical) area, [668f](#)
- Mitral valve, [765](#)
  - prolapse, [766–767](#)
  - regurgitation, [767–768](#)
  - stenosis, [768](#)
- Mitral valve prolapse, [766–767](#)
  - assessment of, [767](#)
  - clinical manifestations of, [767](#)
  - diagnostic findings of, [767](#)
  - medical management of, [767](#)
  - nursing management of, [767](#)
  - pathophysiology of, [767](#)
- Mitrofanoff umbilical appendicovesicostomy, [1620](#)
- Mivacurium, [426t](#)
- Mixed pain, [199t](#)
- Mixed urinary incontinence, [1612](#) . *See also* Urinary incontinence
- MLM. *See* Mucosal lentiginous melanoma
- Model for End-Stage Liver Disease (MELD) classification, [1408](#)
- Moderate sedation, [429](#)
  - description of, [429](#)
  - patient monitoring in, [429–430](#)
- Modified Early Warning System (MEWS), [295](#)
- Modified radical mastectomy, [1709](#), [1723](#)
- MODS. *See* Multiple organ dysfunction syndrome
- Moexipril, for hypertension, [872t](#)
- Mohs micrographic surgery, [1853](#), [1854](#)
- Moisture
  - retentive dressings, [1817–1818](#)
  - skin, [1816](#)
- Moisture-retentive dressings, [1817–1818](#)
  - calcium alginates, [1818](#)
  - foam dressings, [1818](#)
  - hydrocolloids, [1818](#)
  - hydrogels, [1818](#)
- Molecular adsorbent recirculating system (MARS), [1393](#)

- Moles, [1852](#)
- Molluscum contagiosum, [1024](#)
- Molotov cocktail, [2231](#)
- Mondor disease, [1719](#)
- Moniliasis, [1230t](#)
- Monitored anesthesia care (MAC), [416](#), [430](#)
- Monoclonal antibodies (MoAbs), [330–331](#)
  - cancer vaccines, [331–332](#)
  - chimeric, [332](#)
  - cytokines, [332](#)
  - human, [330](#)
  - hybridomas, [330](#), [330f](#)
  - production of, [330](#)
- Monoclonal gammopathy of undetermined significance (MGUS), [957](#), [975](#)
- Monoclonal protein, [974](#)
- Monocytes, [884](#), [889](#)
- Mononuclear leukocytes. *See* Monocytes
- Monotherapy, [645](#)
- Monroe–Kellie hypothesis, [1993](#), [2000](#)
- Montana, on assisted suicide, [387](#)
- Montelukast (Singulair), [1052](#), [1052t](#)
- Moral dilemmas, [5](#), [25](#)
- Moral distress, [5](#), [25](#)
- Moral integrity, [5](#), [28](#)
- Moral problems, [5](#), [25](#)
- Moral uncertainty, [5](#), [25](#)
- *Morbidity and Mortality Weekly Report (MMWR)*, [2149](#)
- Morning hyperglycemia, [1502](#)
- Morphine, [211t](#), [212](#)
  - characteristics of, [213t](#)
- Morphine-3-glucuronide (M3G), [213](#)
- Morphine-6-glucuronide (M6G), [213](#)
- Morphine sulfate (MS), [426t](#)
- Morton neuroma, [1121](#)
- Motion sickness, [1953](#)
- Motivation, [58](#)
- Motor dysfunction, [269](#), [2033](#)
- Motor pathways, [1975–1977](#)
- Motor system, examination of, [1980–1981](#)

- Mourning
  - after death, [384–385](#)
  - anticipatory, [384–385](#)
  - assessment of, [383c](#)
  - complicated, [384](#)
  - definition of, [367](#)
  - loss and, [385](#)
  - six processes of, [385](#)
- Mouth care, [1232](#), [1236](#)
- MRI. *See* Magnetic Resonance Imaging
- MRSA. *See* Methicillin-resistant *Staphylococcus aureus*
- MSDS. *See* Material safety data sheets
- Mucositis, [318](#)
  - chemotherapy agents and, [320](#)
  - definition of, [301](#)
- Mucus hypersecretion, [633](#)
- Multidetector-computed tomography (MDCT), [825](#)
- Multidetector CT (MDCT), [679](#)
- Multidisciplinary action plans (MAPs), [9](#)
- Multidrug-resistant organisms (MDROs), [1005](#)
- Multifactorial inheritance, [124](#)
- Multimodal analgesia, [197](#), [206–218](#)
- Multiple chronic conditions (MCC), [141](#), [155–156](#)
- Multiple endocrine neoplasia, [129t](#)
- Multiple myeloma, [974–981](#)
  - assessment and diagnostic findings, [975–976](#)
  - clinical manifestations, [975](#)
  - complications management, [977–979](#)
  - CRAB features, [975](#)
  - medical management, [976–977](#)
  - nursing management, [980–981](#)
  - older adults and, [980](#)
  - pathophysiology, [974–975](#)
  - and peripheral neuropathy, [980](#)
- Multiple organ dysfunction syndrome (MODS), [297–298](#)
  - burn injuries and, [1874](#)
  - clinical manifestations of, [297–298](#)
  - medical management, [298](#)
  - nursing management, [298](#)
  - pathophysiology of, [297](#)

- Multiple sclerosis (MS), 2094
  - home care checklist, 2100c
  - predictors of fatigue, 2098
  - signs and symptoms of, 2095
- Multiple-test dipstick, 1548, 1607
- Multiple trauma, 2179, 2192–2193
  - assessment and diagnostic findings, 2192
  - causes of, 2192
  - management, 2192–2193
- Mupirocin
  - in impetigo, 1835
- Murmurs, 670
  - characteristics of, 671c
- Muscle, 1118
  - actions, 1101
  - antagonists, 1101
  - atrophy, 1097
  - contraction, 1101
  - cramps, 1104
  - exercise and disuse, 1191c
  - hypertrophy, 574
  - skeletal, 1100
  - strength and size, 1108
  - synergists, 1101
  - tone, 1101
- Muscle relaxants
  - depolarizing, 426t
  - nondepolarizing, 426t–427t
- Muscle setting exercises, 1169, 1169c
- Muscular dystrophies, 2132–2133
- Musculoskeletal disorders (MSD), 1113–1148
  - bone tumors, 1145–1148
  - foot problems, 1119–1122
  - low back pain, 1113–1117
  - metabolic bone disorders, 1134–1142
  - musculoskeletal infections, 1142–1145
  - upper extremity disorders, 1117–1119
- Musculoskeletal infections, 1142–1144
  - osteomyelitis, 1142–1143
  - septic (infectious) arthritis, 1145

- Musculoskeletal sports injuries, [1194t](#)
- Musculoskeletal system, [1097–1112](#)
  - age-related changes of, [1103t](#)
  - assessment, [1101](#)
  - diagnostic evaluation
    - arthrocentesis, [1111](#)
    - arthrography, [1110](#)
    - arthroscopy, [1110–1111](#)
    - biopsy, [1111](#)
    - bone densitometry, [1110](#)
    - bone scan, [1110](#)
    - computed tomography, [1109](#)
    - electromyography, [1111](#)
    - laboratory studies, [1111–1112](#)
    - magnetic resonance imaging, [1109–1110](#)
    - x-rays studies, [1108](#)
  - health history, [1104](#)
    - altered sensations, [1104](#)
    - common symptoms, [1104–1105](#)
    - pain, [1104](#)
    - past health, social, and family history, [1104](#)
  - physical assessment, [1105–1108](#)
    - bone integrity, [1106–1107](#)
    - gait, [1106](#)
    - joint function, [1107–1108](#)
    - muscle strength and size, [1108](#)
    - neurovascular status, [1108](#)
    - posture, [1105–1106](#)
    - skin, [1108](#)
  - structure and function of,
    - articular system, [1099–1100](#)
    - skeletal muscle system, [1100–1101](#)
    - skeletal system, [1097–1098](#)
- Musculoskeletal trauma, [1152–1202](#)
  - amputation, [1193–1195](#)
  - clavicle, [1178–1179](#)
  - contusions, strains, and sprains, [1153](#)
  - elbow, [1180](#)
  - femoral shaft, [1186](#), [1191](#)
  - fibula, [1192](#)



- fractures, 1178–1186
- hand, 1181
- hip, 1183–1184
- humeral neck, 1179
- humeral shaft, 1179–1180
- joint dislocations, 1154
- ligaments, injury to, 1154–1157
- menisci, injury to, 1154–1157
- occupation-related, 1193
- pelvis, 1181–1183
- radial and ulnar shafts, 1181
- radial head, 1180
- rib, 1192
- sports-related, 1193
- tendons, injury to, 1154–1157
- thoracolumbar spine, 1193
- tibia, 1192
- wrist, 1181
- Myasthenia gravis, 1968, 2100–2103
- *Mycobacterium avium* complex (MAC) disease, 1004
- Mycophenolate mofetil (MMF), 1408, 1598
- Mycophenolic acid (Myfortic), 1598t
- *Mycoplasma pneumoniae*, 537t
- Mycotic aneurysms, 838
- Mydriatics, 1908, 1908t
- Myelin, 2103
- Myelodysplastic syndromes (MDS), 962–965
  - assessment and diagnostic findings, 963
  - clinical manifestations, 963
  - medical management, 963–964
  - nursing management, 964–965
- Myelofibrosis, 965, 966, 966t
- Myelogram, for low back pain, 1114c
- Myeloid, 884
- Myeloid stem cells, 885, 887
- Myelomas, classification of, 306t
- Myelopoiesis, 884, 889
- Myeloproliferative neoplasms
  - essential thrombocythemia, 967–968
  - polycythemia vera, 965–967

- primary myelofibrosis, 968–969
- Myelosuppression, 301, 323
- Myocardial infarction (MI), 737–745
  - assessment of, 738–740
  - cardiac rehabilitation, 741
  - clinical manifestations, 738
  - definition of, 737
  - diagnosis of, 738–740
  - electrocardiogram, 738–739
  - evaluation, 745
  - health promotion, 745c
  - medical management, 740–741
  - nursing care, 743c–744c
  - nursing interventions, 742–745
  - pathophysiology, 737–738
- Myocardial perfusion, 653, 678
- Myocarditis, 787–788
- Myofascial pain, 1233
- Myoglobin, 739–740
- Myoglobulin, 1101
- Myomas, 1692
- Myomectomy, 1676, 1693
- Myopia, 1896, 1903
- Myotonic muscular dystrophy type 1, 128t
- MyPlate Food Guide, 1495
- Myringotomy, 1935, 1949
- Myxedema, 1445, 1455

## N

- Nabothian (retention) cysts, 1651
- *N*-acetylcysteine, 1392
- Nadir, definition of, 301
- Nadolol
  - for hypertension, 873t
  - for variceal bleeding, 1380t
- Nafarelin acetate, 1667c
- Nails, 1800
  - clubbing of, 1809
  - cuticle, 1800
  - growth, 1800

- inspection, [1809](#)
- Nalbuphine, [215](#)
- Naltrexone/bupropion, for obesity, [1350t](#)
- NANDA International (NANDA-I), [15](#)
- Nanoparticle albumin-bound paclitaxel, [1439](#)
- Nasal cavity, [464f](#)
- Nasal corticosteroids, [500t](#)
- Nasal endotracheal catheter, [425f](#)
- Nasal fractures, [513](#)
- Nasal obstruction, [512–513](#)
- Nasoduodenal tube, [1246](#)
- Nasoenteric tube, [1245f](#)
- Nasogastric (NG) tube, [1241](#), [1245](#)
- Nasojejunal tube, [1246](#), [2046](#)
- NASPE-BPEG code. *See* North American Society of Pacing and Electrophysiology and the British Pacing and Electrophysiology Group code
- Nateglinide, [1505t](#)
- National Association of Orthopaedic Nurses (NAON), [1193](#)
- National Center for Complementary and Integrative Health (NCCIH), [77](#), [335](#)
- National Center for Health Statistics (NCHS), [157](#)
- National Cholesterol Education Program (NCEP), [730](#)
- National Comprehensive Cancer Network (NCCN), [308](#)
- National Consensus Project for Quality Palliative Care, [368](#)
- National Disaster Medical System, [2220t](#)
- National Health and Nutrition Examination Survey (NHANES), [866](#)
- National Health Security Strategy, [2219](#)
- National Heart, Lung, and Blood Institute (NHLBI), [719](#)
- *National HIV/AIDS Strategy for the United States: Updated to 2020*, [1008](#)
- National Hospice and Palliative Care Organization (NHPCO), [369](#)
- National Human Trafficking Hotline, [2213](#)
- National Incident Management System (NIMS), [2219](#)
- National Institute for Occupational Safety and Health (NIOSH), [306](#), [1944](#)
- National Institute of Health (NIH), [117](#)
- National Institute of Neurological Disorders and Stroke (NINDS), [1165](#)
- National Institute on Deafness and Other Communication Disorders (NIDCD), [1944](#)

- National Institute on Drug Abuse, [212](#)
- National Institutes of Health Stroke Scale (NIHSS), [2036](#)
- National Medical Response Teams for Weapons of Mass Destruction (NMRT), [2220t](#)
- National Patient Safety Goals (NPSGs), [399](#), [411](#)
- National Sexual Assault Hotline, [2212](#), [2213](#)
- National Terrorism Advisory System (NTAS), [2219](#)
- Natriuretic peptides, [232](#)
- Natural disasters, [2180](#), [2183](#), [2229–2230](#)
  - preparedness and response, [2227](#)
- Natural immunity, [988](#)
- Natural killer (NK) cells, [884](#), [889](#)
- Nausea and vomiting
  - intraoperative period, [431](#)
- NCCIH. *See* National Center for Complementary and Integrative Health
- NCCN. *See* National Comprehensive Cancer Network
- Nebivolol (Bystolic), for hypertension, [873t](#)
- Neck dissection, [1238–1244](#)
  - and chyle fistula, [1240](#)
  - and hemorrhage, [1242–1243](#)
  - lymphatic drainage of head and neck, [1239f](#)
  - and nerve injury, [1243](#)
  - nursing process
    - airway clearance, [1240](#)
    - assessment, [1239](#)
    - communication methods, [1241](#)
    - complications management, [1242–1243](#)
    - continuing and transitional care, [1244](#)
    - diagnosis, [1239–1240](#)
    - evaluation, [1244](#)
    - home care checklist, [1243c](#)
    - nursing interventions, [1240–1244](#)
    - nutritional status, [1240–1241](#)
    - pain relief, [1240](#)
    - patient education, [1243](#)
    - physical mobility, [1242](#)
    - planning and goals, [1240](#)
    - postoperative care, [1240](#)
    - preoperative patient education, [1240](#)

- rehabilitation exercises, [1242f](#)
- supporting patient and caregivers, [1241](#)
- wound care, [1240](#)
- radical, [1238](#)
- reconstructive techniques, [1239](#)
- selective, [1239](#)
- Neck immobility, [2089](#)
- Necrotizing gingivitis, [1231t](#)
- Necrotizing pancreatitis, [1429](#) . *See also* Pancreatitis
- Needle biopsy, [313](#)
- Negative feedback, [97](#)
  - definition of, [104](#)
- Negative-pressure (vacuum) devices, [1749t](#), [1751](#)
- Negative pressure wound therapy, [857](#)
- Neglect, elder, [189](#)
- *Neisseria gonorrhoeae*, [2169](#)
- *Neisseria meningitidis*, [2088](#)
- Nelfinavir (NFV), [1020t](#)
- Neomycin, in hepatic encephalopathy, [1382](#)
- Neoplasia, definition of, [302](#)
- Neoplastic disease, [998–999](#)
- Neovascularization, [1896](#), [1902](#)
- Nephrectomy, [1563](#)
- Nephritic syndrome, acute, [1554](#), [1558–1560](#)
- Nephritis, [1083](#)
- Nephrolithiasis, [1620–1625](#)
  - assessment and diagnostic findings, [1621](#)
  - clinical manifestations, [1621](#)
  - interventional procedures, [1622–1624](#)
  - medical management, [1621–1624](#)
    - nutritional therapy, [1622](#)
  - nursing process, [1624–1625](#)
    - assessment, [1624](#)
    - diagnosis, [1624](#)
    - evaluation, [1625](#)
    - home, community-based, and transitional care, [1625](#)
    - nursing interventions, [1624](#)
    - planning and goals, [1624](#)
  - pathophysiology, [1620–1621](#)
  - predisposing factors, [1621](#)

- surgical management, 1624
- Nephrons, 1535
- Nephropathy, 1522–1523
  - assessment and diagnostic findings, 1522–1523
  - clinical manifestations, 1522
  - diabetes and, 1522
  - management, 1523
- Nephrosclerosis, 1555, 1557–1558
  - benign, 1558
  - treatment of, 1558
- Nephrotic syndrome, 1555, 1561–1562
  - assessment and diagnostic findings, 1561–1562
  - clinical manifestations, 1561
  - complications, 1562
  - and edema, 1561
  - medical management, 1562
  - nursing management, 1562
  - pathophysiology, 1561, 1561f
- Nephrotoxic, 1566
- Nerve agents, 2236
  - clinical manifestations of, 2236
  - treatment of, 2236
- Neuraxial analgesia, 207
- Neurodegenerative, 1023, 2112, 2122
- Neuroendocrine tumors (NETs), 1442
- Neurofibromatosis, 1852
- Neurogenic bladder, 1604
  - flaccid bladder, 1617
  - spastic bladder, 1617
- Neurogenic shock, 273
  - description of, 296
  - medical management, 296
  - nursing management, 296
  - risk factors, 292c
- Neuroimaging, 2091, 2092
- Neurologic assessment alerts, 2092
- Neurologic disorders
  - critical care flowsheet, 2006f
  - genetics of, 1979c
  - symptoms of, 1977–1978

- Neuromodulation, [1614c](#)
- Neuromuscular blockers, [424](#)
- Neuromuscular respiratory failure, [2102](#)
- Neuropathic pain, [201–202](#)
  - classification of, [199t](#)
  - definition of, [198](#)
  - mechanisms, [202](#)
  - pathways, [200f](#)
- Neuropathy, [1487](#)
- Neuropeptide Y (NPY), [1345](#)
- Neuroplasticity, [197](#), [202](#)
- Neurotransmitters, [1967](#), [1967t](#)
- Neurovascular status, [1108](#)
- Neutropenia, [929–930](#)
  - causes of, [929c](#)
  - clinical manifestations, [929](#)
  - definition of, [302](#)
  - medical management, [930](#)
  - nursing management, [930](#)
- Neutrophils, [989](#)
- Nevirapine (NVP), [1019t](#)
- NHL. *See* Non-Hodgkin lymphomas
- NHPCO. *See* National Hospice and Palliative Care Organization
- NIC. *See* Nursing Interventions Classification
- Nicardipine
  - for hypertension, [872t](#)
  - for pheochromocytoma, [1476](#)
- Nicotine stomatitis, [1231t](#)
- NIDCD. *See* National Institute on Deafness and Other Communication Disorders
- Nifedipine long acting
  - for hypertension, [872t](#)
- Nightingale, Florence, [5](#)
- NIH. *See* National Institute of Health
- Nikolsky's sign, [1867](#)
- Nilotinib, [955](#)
- NIOSH. *See* National Institute for Occupational Safety and Health
- Nipple discharge, [1717](#)
- Nipple inversion, [1710](#), [1711c](#)
- Nisoldipine (Sular), for hypertension, [872t](#)

- Nissen fundoplication, [1257](#)
- Nitrates, for angina, [734t](#)
- Nitrofurantoin, for urinary tract infections, [1608t](#)
- Nitrogen mustard, [321t](#)
- Nitroprusside, [285t](#)
- Nitrosoureas, [321t](#)
- Nitrous oxide, [425t](#)
- Nivolumab, [1856](#)
- Nizatidine, for gastritis, [1269t](#)
- NM. *See* Nodular melanoma
- *N*-methyl-*D*-aspartate (NMDA) receptor antagonist, [201](#)
- NOC. *See* Nursing Outcomes Classification
- Nociception
  - modulation of, [200f](#)
  - perception of, [200f](#)
  - transduction of, [200f](#)
  - transmission of, [200f](#)
- Nociceptive pain, [198–201](#)
  - classification of, [199t](#)
  - description of, [198–199](#)
  - transduction of, [199–201](#)
  - transmission of, [201](#)
- Nociceptors, [199](#)
- Nocturia, [661](#)
- Nocturnal penile tumescence tests, [1747](#), [1748](#)
- Nodular goiter, [1467](#)
- Nodule, [1746](#)
- Nonalcoholic fatty liver disease (NAFLD), [1368](#)
- Nonalcoholic steatohepatitis (NASH), [1368](#)
- Nonbullous impetigo, [1835](#)
- Noncompensatory pause, [688](#)
- Noncompliance, [798](#)
- Nondepressed skull fractures, [2057](#)
- Nondisjunction, [116](#), [120](#)
- Nonfatal drowning, [2199–2200](#)
  - management, [2199–2200](#)
- Nongerminial tumors, [1771](#)
- Non-Hodgkin lymphomas (NHL), [972–974](#)
  - assessment and diagnostic findings, [973](#)
  - classification system, [973](#)



- clinical manifestations, 973
- extranodal location, 972f
- medical management, 973–974
- nursing management, 974
- Nonmaleficence, 25c
- Non-nucleoside reverse transcriptase inhibitors, 1016, 1019t
- Nonnutritive sweeteners, 1496
- Nonopioid analgesics, 199
  - administration of, 208
  - adverse effects of, 208–209
  - in skeletal traction, 1176
- Nonparoxysmal junctional tachycardia, 704
- Nonrebreathing mask, 613
- Nonselective débridement, 856
- Nonseminoma testicular cancers, 1771
- Non-sulfonylurea insulin secretagogues, 1505t
- Nontraditional inheritance, 124
- Nontreponemal or reagin tests, 2169
- Nonunion, 1152, 1164
- Norepinephrine, 795
  - in cardiopulmonary resuscitation, 814t
- Norethindrone acetate, 1694
- Normal flora, 2144, 2148
- Normal heart sounds, 650, 668
- Normal saline (NS), in diabetic ketoacidosis, 1515
- Normochromic, normocytic anemia, 909, 916
- North American Society of Pacing and Electrophysiology and the British Pacing and Electrophysiology Group code (NASPE-BPEG code), 716c
- Nortriptyline, 217
- Nose
  - anatomy of, 463
  - physical assessment, 476
- Nosebleed. *See* Epistaxis
- Nothing-by-mouth (NPO), 535t
- NPH insulin, 1500
- NPSGs. *See* National Patient Safety Goals
- NSAID-induced kidney disease, 1567
- NSAIDs. *See* Nonsteroidal anti-inflammatory drugs
- Nuchal rigidity, 494, 501

- Nuclear radiation exposure, 2237–2239
  - acute radiation syndrome, 2238–2239
  - decontamination, 2238
  - exposure, 2238
  - measurement and detection, 2237–2238
  - radiation, types of, 2237
  - survival, 2239
- Nucleated RBCs, 968
- Nucleic acid amplification tests (NAATs), 2169
- Nucleic acid sequence–based amplification (NAT), 1015–1016
- Nucleoside reverse transcriptase inhibitors (NRTIs), 1018t
- Null lymphocytes, 986, 993
- Numeric Rating Scale (NRS), 204
- Nurse navigators, 35
- Nursing Outcomes Classification (NOC), 17, 18c
- Nursing process, 12–23
  - definition of, 12
  - documentation of outcomes, 19
  - example of plan of nursing care, 20c–22c
  - hospitalized postoperative patient, 444–445
  - steps of, 12–19
    - assessment, 13–15
    - diagnosis, 15–16
    - evaluation, 19
    - implementation, 17–19
    - planning, 16–17
  - taxonomy of nursing practice, 23
- Nutritional therapy
  - ascites, 1373
- Nutrition labels, 783, 1495
- Nutritive sweeteners, 1496
- Nystagmus, 1935
  - definition of, 1953
- Nystatin (Mycostatin), for candidiasis, 1678

## P

- Pacemakers, in dysrhythmia, 715–719
  - complications with, 717–719, 718c, 718t
  - design, 715–716
  - dual-chamber pacing, 717

- elective replacement indicator, 715
- generator functions, 716–717
- single-chamber atrial pacing, 717
- spike, 717
- surveillance of, 720
- synchronized biventricular pacing, 717
- transcutaneous, 716f
- types of, 715–716
- VVI pacing, 717
- Packed red blood cells (PRBCs), 896
- Paclitaxel, 321t
- PACU. *See* Postanesthesia care unit
- Paget disease, 1141–1142
  - assessment and diagnostic findings, 1141
  - clinical manifestations, 1141
  - medical management, 1141–1142
  - pathophysiology, 1141
- Paget–Schroetter syndrome, 846
- Pain
  - acute, 196, 197
  - assessment of, 202–205
  - breakthrough, 198
  - during cardiac surgery, 680
  - categories of, 198–203
  - chronic, 196, 197
  - classification of, 199t
  - definition of, 197
  - effects of, 197, 198t
  - end-of-life care, 377
  - genitourinary, 1542t
  - location of, 203
  - modulation of, 201f, 202
  - musculoskeletal, 1102–1103
  - neuropathic, 198, 199t,
  - nociceptive, 198–202, 199t
  - patient reports of, 202, 203c
  - perception of, 198
  - in postanesthesia units, 442–443
  - reassessment of, 206
  - types of, 198–203

- unrelieved, 198t
- PAINAD (Pain Assessment IN Advanced Dementia), 206
- Pain Assessment IN Advanced Dementia. *See* PAINAD
- Pain management
  - case study, 194
  - dosing regimens, 207
  - nonpharmacologic, 218, 220c
  - nonpharmacologic measure, 498
  - nursing implications, 219
  - pharmacologic, 206–218
  - plans of care, 337c
  - postsurgical patients, 447, 448f
  - preoperative, 408
  - responsibility for, 206
  - sickle cell disease and, 924
  - subcutaneous system, 448f
- Palifermin, 336
- Palindromic rheumatism, 1091
- Palliation, definition of, 302, 312
- Palliative care, 387c
  - definition of, 369–370
  - for dyspnea, 379c
  - at the end of life, 369–371
  - outpatient, 371
- Palliative sedation, definition of, 367
- Palmar flexion, 41c
- Palmar-plantar erythrodysesthesia, 1328
- Palmer method, 1869
- Palpation, 297
  - deep, 84f
  - definition of, 71
  - light, 84f
  - for tactile fremitus, 480f
  - thoracic, 479–480
- Palpitations, 658
- Pamidronate, 251
- Pancreas
  - age-related changes, 1418
  - anatomy of, 1417f
  - disorders of, 1429–1443

- cancer of pancreas, 1438–1439
- hyperinsulinism, 1442
- pancreatic cysts, 1438–1439
- pancreatic islet tumors, 1442
- pancreatitis, 1429–1437
- tumors of head of pancreas, 1440–1442
- ulcerogenic tumors, 1442–1443
- endocrine, 1417
- exocrine, 1417
- function of, 1417
- Pancreatic cancer, 1438–1439
  - assessment and diagnostic findings, 1439
  - clinical manifestations, 1439
  - and diabetes, 1439
  - incidence of, 1438
  - medical management, 1439–1440
  - nursing management, 1440, 1440c
  - risk factors, 1438
  - survival rate, 1439
- Pancreatic cells, transplantation of, 1504
- Pancreatic cysts, 1438
  - diagnosis of, 1438
  - nursing management, 1440
- Pancreatic insufficiency, 1296t
- Pancreatic islet tumors, 1442
- Pancreatic necrosis, 1433
- Pancreaticoduodenectomy (Whipple procedure or resection), 1441, 1441f
- Pancreaticojejunostomy, 1437
- Pancreatitis
  - acute, 1429
    - assessment and diagnostic findings, 1430
    - clinical manifestations, 1430
    - complications and management, 1432
    - continuing and transitional care, 1433
    - medical management, 1431
    - nursing care plan, 1435c–1436c
    - nursing management, 1432–1433
    - in older adults, 1429
    - pathophysiology, 1429

- self-care, [1433](#)
- chronic, [1429](#),
  - assessment and diagnostic findings, [1437](#)
  - clinical manifestations, [1436](#)
  - medical management, [1437](#),
  - surgical management, [1437](#)
- description of, [1416](#)
- severity of, prediction of, [1430c](#)
- Pancuronium, [427t](#)
- Pancytopenia, [968](#)
- Panhypopituitarism, [1450](#)
- Panretinal photocoagulation, for diabetic retinopathy, [1521](#)
- Pantoprazole, [1431](#)
  - for gastritis, [1269t](#)
  - for GERD, [1258t](#)
- Papanicolaou (Pap) smear, [1651](#)
- Papaverine, [1750](#)
- Papilledema, [1896](#)
- Papule, [1806t](#)
- Paracentesis, for ascites, [1374](#)
- Paradoxical pulse. *See* Pulsus paradoxus
- Paradoxical tuberculosis-associated immune reconstitution inflammatory syndrome (TB-IRIS), [1021](#)
- Paralysis, [2105](#)
- Paranasal sinuses, [463f](#)
- Paraphimosis, [1775](#)
- Paraplegia, [1976](#), [2070](#)
- Parasympathetic nervous system, [1975](#)
- Parathormone, [1470](#)
- Parathyroidectomy, [1471](#)
- Parathyroid glands, [1470](#), [1470f](#)
  - functions, [230](#)
  - hyperparathyroidism, [1470–1472](#)
  - hypoparathyroidism, [1472–1473](#)
  - pathophysiology, [1470](#)
- Parathyroid hormone (PTH), [1098](#), [1136](#)
  - associated with hyperparathyroidism, [250](#)
  - functions, [230](#)
  - serum calcium level and, [248](#)
- Paravertebral anesthesia, [429](#)

- Parenteral fluid therapy, 264–269
  - intravenous solutions, 264–269
  - purpose of, 264
- Parenteral nutrition, 1286
  - administration methods, 1245
    - central method, 1314
    - implanted vascular access ports, 1315
    - percutaneous central catheters, 1314–1315, 1315f
    - peripherally inserted central catheters, 1315
    - peripheral method, 1314
    - surgically placed central catheters, 1315
  - complications of, 1316, 1317t
  - discontinuation of, 1315–1316
  - formulas, 1314
  - goals of, 1313
  - home care checklist, 1318c
  - indications for, 1313, 1313t
  - initiation of, 1317
  - nursing process, 1316
  - older adult patients and, 1318
- Paresthesia, 1104
- Paris, terrorist attacks in, 2230
- Parkinson's disease, 2125t
  - strategies for patient, 2128c
- Paronychia, 1809
- Parotitis, 1228
- Paroxetine (Paxil), 214
  - for depression, 181
- Paroxysmal, 690
- Paroxysmal atrial tachycardia (PAT), 704
- Paroxysmal nocturnal dyspnea (PND), 662
- Paroxysmal supraventricular tachycardia (PSVT), 705
- Partial rebreathing mask, 613
- Partial thromboplastin time (PTT)
  - reference range, 673t
- Pasero Opioid-Induced Sedation Scale, 216c
- Passive dressings, skin, 1816
- Passive external rewarming method, 2198. *See also* Hypothermia
- Pastes, wound care, 1820
- Patch, 1806t

- Patch testing, [1056](#)
- Patellar reflex, [1983](#)
- Pathogen-associated molecular patterns (PAMPs), [990](#)
- Patient, [5](#)
  - basic needs, [6](#)
  - as consumer of nursing and health care, [5](#)
  - emotional support to, [455](#)
  - hospitalized postoperative, [444–445](#)
  - receiving in clinical unit, [445](#)
  - surgical, [418](#)
- Patient-controlled analgesia (PCA), [207–208](#)
- Patient-controlled epidural analgesia (PCEA), [410](#)
- Patient education
  - activities of daily living, [38c](#)
  - diabetes, [1507](#)
  - nursing process for, [60–62](#)
  - pain rating scale use, [203c](#)
  - teaching plan, [16–17](#)
  - wound care instructions, [453c](#)
- Patient positioning
  - perioperative injury, [433](#)
  - postoperative, [409c](#)
  - preventing musculoskeletal complications, [41](#)
- Patient Protection and Affordable Care Act (PPACA), [160](#)
- Patient Self-Determination Act (PSDA), [191](#)
- Pay for performance, [34](#)
- PCEA. *See* Patient-controlled epidural analgesia
- PD. *See* Peritoneal dialysis
- PE. *See* Pulmonary embolism
- Peak flow monitoring, [641c](#)
- Peau d'orange, breast, [1711c](#)
- Pectus carinatum, [477](#)
- Pectus excavatum, [477](#)
- Pediatric, genetics referrals in, [135c](#)
- Pediculosis, [1838–1839](#)
- Pediculosis capitis, [1838](#)
- Pediculosis corporis, [1838](#)
- Pediculus humanus capitis, [1838](#)
- Pediculus humanus corporis, [1838](#)
- Pedigree, [121f](#)



- Pegfilgrastim, 1733
- Peginterferon alfa-2a, 1390
- Pegloticase, 1090
- Pelvic diaphragm, 1642
- Pelvic exenteration, 1697
- Pelvic floor exercises, 1292
- Pelvic fracture
  - signs and symptoms of, 1182
  - stable 1182f
  - unstable, 1183, 1183f
- Pelvic inflammatory disease (PID), 1676
  - causes of, 1684
  - clinical manifestations, 1685
  - complications, 1685–1686
  - consequences, 1685
  - home care checklist, 1686c
  - medical management, 1685
  - nursing management, 1686
  - pathophysiology, 1685, 1685f
  - patient education, 1686
- Pelvic lymph node dissection (PLND), 1762
- Pelvic muscle exercise (PME), 1614c, 1615
- Pelvic organ prolapse, 1687
  - clinical manifestations, 1688
  - cystocele, 1687
  - enterocele, 1687–1688
  - medical management, 1688
    - Kegel exercises, 1688, 1688c
    - pessaries, 1688, 1689f
  - procidentia, 1688
  - rectocele, 1687
  - risk factors, 1687
  - surgical management, 1688–1689
- Pelvic pain, chronic, 1694
- Pelvic prolapse, 1545
- Pelvis, 1181–1182, 1182f
- Pembrolizumab, 1856
- Pemoline, 2097
- Pemphigus vulgaris, 1846–1847
- Penetrating abdominal injuries, 2193

- Penetrating keratoplasty, 1918
- Penetrating trauma, 592
- Penicillin
  - for anthrax treatment, 2234
  - penicillin G, 1608t, 2090
- Penile cancer, 1775–1776
  - assessment and diagnostic findings, 1776
  - clinical manifestations, 1776
  - medical management, 1776
  - prevention, 1776
  - risk factors for, 1776
  - types of, 1776
- Penile implants, 1750–1751
- Penis, 1744–1745
- Penis transplant, 1751
- Penrose drains, 452, 452f
- Pentagon, damage to, 2230
- Pentostatin, 321t
- Penumbra region, 2031
- Peppermint oil, 1295
- Pepsin, 1208
- Peptic ulcer disease, 1270
  - assessment and diagnostic findings, 1272
  - clinical manifestations, 1272
  - continuing and transitional care, 1277
  - follow-up care, 1275
  - and gastric outlet obstruction, 1277
  - hemorrhage from, 1276
  - home care checklist, 1277c
  - *H. pylori* infection and, 1271
  - medical management, 1272
    - dietary modification, 1273
    - pharmacologic therapy, 1272–1273, 1273t
    - smoking cessation, 1273
  - NSAIDs use and, 1271
  - nursing process, 1275
    - anxiety reduction, 1276
    - assessment, 1275
    - complications management, 1276–1277
    - diagnosis, 1275

- evaluation, [1277](#)
- nursing interventions, [1275–1277](#)
- nutritional status, [1276](#)
- pain relief, [1275](#)
- planning and goals, [1275](#)
- in older adults, [1271](#), [1272](#)
- pathophysiology, [1271–1272](#)
- patient education, [1277](#)
- perforation of peptic ulcer, [1276](#)
- predisposing factors, [1271](#)
- silent peptic ulcers, [1272](#)
- silent peptic ulcers, [1272](#)
- surgical management, [1278](#)
- Zollinger–Ellison syndrome and, [1225](#)
- Percussion
  - definition of, [71](#)
  - sounds, [481t](#)
  - thorax, [480](#)
- Percutaneous balloon microcompression, [2109](#)
- Percutaneous biliary drainage, [1406](#)
- Percutaneous cholecystostomy, [1425–1426](#)
- Percutaneous coronary interventions (PCIs), [745](#)
  - complications of, [747](#), [747t](#)
  - coronary artery stent, [746–747](#)
  - definition of, [725](#)
  - postprocedure care, [747–748](#)
  - procedures, types of, [745](#)
  - PTCA, [745](#)
- Percutaneous endoscopic gastrostomy (PEG), [1249](#)
- Percutaneous needle biopsy, [492](#)
- Percutaneous transhepatic cholangiography (PTC), [1422–1423](#)
- Percutaneous transluminal angioplasty (PTA), [829](#)
- Percutaneous transluminal coronary angioplasty (PTCA), [745–746](#)
- Perforation, esophageal, [1255](#)
- Perianal pruritus, [1830](#)
- Periapical abscess, [1233](#)
  - acute, [1233](#)
  - blind dental abscess, [1233](#)
  - chronic, [1233](#)
  - clinical manifestations, [1233](#)

- nursing management, 1233
- Pericardial effusion, 811–812
  - assessment and diagnostic findings, 812
  - clinical manifestations, 812
  - medical management, 812
  - pathophysiology, 811
- Pericardial space, 651
- Pericardiocentesis, 812
- Pericardiotomy, 812
- Pericarditis, 788–790
- Pericardium, description, 651
- Perilymph, 1937
- Perimenopause, 1671
- Perimetry testing, 1903
- Perindopril, for hypertension, 872t
- Perineal prostatectomy, 1762
- Perineal pruritus, 1652
- Perineorrhaphy, 1688
- Perineum, 1642
- Perineural anesthesia, 207
- Periodontitis, 1231t
- Perioperative nursing, 397
  - genetics of, 403c
  - immediate interventions, 412–414
  - interventions, 404
  - outcomes, 397
  - patient education, 407
  - phases of, 398c
  - surgical classifications, 397
- Perioperative period
  - considerations, 399–401
  - definition of, 399
  - nursing activities, 398c
- Periosteum, 1097f
- Peripheral arterial disease (PAD). *See also* Arterial disorders; Atherosclerosis
  - foot and leg care in, 834c
  - nursing care plan, 830c–831c
  - in older adults, 832
- Peripheral artery disease, 835–837

- assessment and diagnostic findings, 835
- clinical manifestations, 835
- medical management, 835
  - endovascular management, 835
  - pharmacologic therapy, 835
  - surgical management, 836
- nursing management, 836
- Peripheral dual-energy x-ray absorptiometry (pDXA), 1110
- Peripheral edema, 664
- Peripherally generated pain, 199t
- Peripherally inserted central catheters (PICCs), 1315
- Peripheral nerve disorders, 2110
- Peripheral nerve function, assessing for, 1108, 1109c
- Peripheral nervous system, 1971
- Peripheral neuropathies, 2110
- Peripheral neurovascular dysfunction, 1109c
- Peripheral parenteral nutrition (PPN), 1314. *See also* Parenteral nutrition (PN)
- Peripheral sensitization, 197
- Peripheral smear, manual examination of, 894
- Peripheral vascular disease, diabetes and, 1519
- Peripheral vascular resistance, 820
- Periprosthetic fracture, 1184
- Peritoneal dialysis (PD), 1584–1585
  - acute intermittent, 1587
  - approaches for, 1587–1588
  - complications of, 1587
    - bleeding, 1587
    - hypertriglyceridemia, 1587
    - leakage of dialysate, 1587
    - peritonitis, 1587
  - continuous ambulatory, 1588
  - continuous cycling, 1589c
  - in diabetes, 1522
  - goals of, 1584
  - home care checklist, 1589c
  - nursing management
    - continuing and transitional care, 1589
    - patient education, 1597
    - psychosocial needs, 1588

- procedure, [1585](#)
  - catheter insertion, [1587](#)
  - equipment preparation, [1585](#)
  - exchanges, [1585](#)
  - patient preparation, [1591](#)
- ultrafiltration in, [1585](#)
- Peritoneum, [1266](#)
- Peritonitis, [1297–1298](#)
  - assessment and diagnostic findings, [1298](#)
  - bacterial infection and, [1297](#)
  - clinical manifestations, [1297](#)
  - medical management, [1297](#)
  - nursing management, [1297](#)
  - pathophysiology, [1298](#)
  - primary, [1297](#)
  - secondary, [1297](#)
  - tertiary, [1298](#)
- Peritonsillar abscess, [506–507](#)
- Periurethral bulking, [1613](#)
- Pernicious anemia, [918](#), [1225](#)
- Per-oral endoscopic myotomy (POEM), [1253](#)
- Persistent vegetative state, [1993](#)
- Personal flotation device (PFD), [2199](#)
- Personalized genomic treatments, [130–131](#)
- Personalized health care, legal aspects, [132](#)
- Personalized medicine, [117t](#)
- Personal protective equipment (PPE), [2227](#)
- Pertussis, [2175](#)
- Pes cavus, [1121](#)
- Pes planus, [1121](#)
- Pessaries, [1689f](#)
- PET. *See* Positron Emission Tomography
- Petechiae, [1798](#)
- Peyronie's disease, [1777](#)
- Phacoemulsification, [1916](#)
- Phagocytic cells, [987](#)
- Phagocytic immune response, [987](#)
- Phagocytosis, [884](#)
- Phakic intraocular lenses, [1920](#)
- Phantom limb pain, [1152](#)

- Pharmacogenetics, [116](#)
- Pharmacogenomics, [130–131](#)
- Pharmacokinetics, aging and, [179](#)
- Pharmacologic therapy, [1954](#)
  - for psoriasis, [1842](#)
- Pharyngitis, [503–505](#)
- Pharynx, anatomy of, [463](#)
- Phase I PACU, [437](#)
- Phase II PACU, [437](#)
- Phenazopyridine, for urinary tract infections, [1608t](#)
- Phendimetrazine, for obesity, [1350t](#)
- Phenothiazines, [406t](#)
- Phenotype, [116](#)
- Phenoxybenzamine (Dibenzylamine)
  - for pheochromocytoma, [1445](#)
- Phentermine for obesity, [1350t](#)
- Phentermine/topiramate-ER (Qsymia)
  - for obesity, [1350t](#)
- Phentolamine (OraVerse), [1750](#)
- Phenytoin, [179](#)
- Pheochromocytoma,
  - clinical manifestations, [1475](#)
  - hypertension and, [1474](#)
  - histologic findings, [1475](#)
  - nursing management, [1476](#)
  - paroxysmal form of, [1475](#)
  - pharmacologic therapy, [1476](#)
  - surgical management, [1476](#)
- Phimosis, [1775](#)
- Phlebitis, [267](#)
- Phlebostatic axis, [684](#), [684f](#)
- Phlebotomy, [896](#)
- Phlegmasia cerulea dolens, [846](#)
- pH monitoring, [1225](#)
- Phoenix Society for Burn Survivors, [1888](#)
- Phosphodiesterase type 5 (PDE-5) inhibitors
  - for erectile dysfunction, [1748](#)
- Phosphorus deficit, [1556t](#)
- Phosphorus imbalance, [254–257](#), [254t](#)
  - hyperphosphatemia, [255](#)

- hypophosphatemia, [254](#)
- Photoaging, [1802](#)
- Photophobia, [1896](#)
- Photorefractive keratectomy (PRK), [1920](#)
- Phototherapeutic keratectomy (PTK), [1918](#)
- Phototherapy, for psoriasis, [1834](#)
- Physical abuse, [189](#)
- Physical activity
  - in CAD, [730](#)
  - for cancer prevention, [309c](#)
- Physical examinations
  - components of, [83](#)
  - considerations, [83](#)
  - definition of, [71](#)
- Physical fitness
  - definition of, [56](#)
  - health promotion and, [65](#)
- Physician Orders for Life-Sustaining Treatment (POLST), [376c](#)
- Physiologic dead space, [462](#)
- PID. *See* Pelvic inflammatory disease
- PIDDs. *See* Primary immune deficiency diseases
- Pigeon chest, [477](#)
- Pigment stones, [1419](#). *See also* Cholelithiasis
- PI3 kinase disease, [1006t](#)
- PillCam ESO, [1221](#)
- Pilocarpine, [1085](#)
- Pilonidal sinus or cyst, [1335](#)
- Pindolol, for hypertension, [873t](#)
- Pioglitazone, [1506t](#)
- Pipe bomb, [2231](#)
- Pirbuterol, [634](#)
- Pitting edema, [238](#)
- Pituitary adenomas, [2114](#)
- Pituitary gland, [1449–1452](#)
  - anterior, [1449–1450](#)
  - diabetes insipidus, [1451](#)
  - pathophysiology, [1450](#)
  - posterior, [1450](#)
  - SIADH, [1452](#)
  - tumors, [1450–1451](#)



- Pituitary portal blood system, [1450](#)
- Pituitary tumors, [1450–1451](#)
  - assessment and diagnostic findings, [1451](#)
  - basophilic tumors, [1451](#)
  - chromophobic tumors, [1451](#)
  - clinical manifestations, [1451](#)
  - eosinophilic tumors, [1450](#)
  - functional, [1450](#)
  - medical management, [1451](#)
  - nonfunctional, [1450](#)
  - surgical management, [1451](#)
- Pivot joints, [1110](#)
- PKD. *See* Polycystic kidney disease
- Placebos
  - definition of, [218](#)
  - use of, [218](#)
- Planning, in nursing process, [16–17](#)
  - expected outcomes, [17](#)
  - goals for nursing actions, [17](#)
  - nursing actions, [17](#)
  - setting priorities, [17](#)
- Plantar digital neuroma. *See* Morton neuroma
- Plantar fasciitis, [1121](#)
- Plantar flexion, [41c](#), [1185](#)
- Plaques, [827](#)
- Plasma, [885](#)
- Plasma albumin, [896](#)
- Plasma pH, [258](#)
- Plasmapheresis, [895](#)
- Plasma proteins, [890](#)
- Plasminogen, [891](#)
- Plasminogen activator tissue (tPA), [2037](#)
- Plaster casts, [1167](#)
- Plaster of Paris, [1167](#)
- Plastic surgery
  - cosmetic, [1859](#)
  - reconstructive, [1859](#)
  - skin grafts, [1859](#)
- Platelet-activating factor, [1041](#)
- Platelet defects, [934–935](#)

- Plateletpheresis, [896t](#)
- Platelets, [890](#)
- Platelets, reference range, [673t](#)
- Platform posturography, [1943](#)
- PLCG2-associated antibody deficiency and immune dysregulation (PLAID), [1006t](#)
- Pleura, [464](#)
- Pleural biopsy, [492](#)
- Pleural conditions
  - acute respiratory failure, [556–558](#)
  - empyema, [556](#)
  - pleurisy, [553](#)
  - pulmonary edema, [560](#)
  - pulmonary embolism, [576](#)
- Pleural effusion, [542](#)
- Pleural friction rub, [527](#)
- Pleural space, [527](#)
- Pleurisy, [553–554](#)
- Plicamycin, [321t](#)
- PLISSIT model of sexual assessment, [1646](#)
- PLND. *See* Pelvic lymph node dissection
- PMS. *See* Premenstrual syndrome
- Pneumatic dilation, in achalasia, [1253](#), [1253f](#)
- Pneumoconiosis, [576–577](#)
- *Pneumocystis pneumonia* (PCP), [1004](#)
- Pneumonectomy, [581c](#)
- Pneumonia, [531–533](#)
  - assessment, [536](#)
  - assessments, [659t](#)
  - classification, [531](#)
  - clinical manifestations, [531](#)
  - complications, [536](#)
  - diagnostic findings, [536](#)
  - gerontologic considerations, [540](#)
  - medical management, [531](#)
  - nursing process, [542–543](#)
  - pathophysiology, [545](#)
  - prevention, [545](#)
  - risk factors, [543](#)
- Pneumothorax, [593–595](#)

- clinical manifestations, [594](#)
- COPD patient, [607](#)
- medical management, [608](#)
- nursing care, [620c](#)
- types, [593–594](#)
- Podofilox (Condylox), for HPV infection, [1681](#)
- Podophyllin (Podofin, Podocon)
  - for HPV infection, [1681](#)
- Poikilocytosis, [917](#)
- Poison Control Center, [2201](#)
- Poisoning
  - carbon monoxide, [2204](#)
  - emergency treatment of, [2202](#)
  - food poisoning, [2204](#)
  - ingested (swallowed) poisons, [2202–2203](#)
  - skin contamination, [2204–2205](#)
- Polio, [2139](#)
- Polycystic kidney disease (PKD), [1562](#)
  - autosomal dominant, [1562](#)
  - autosomal recessive, [1562](#)
- Polycystic ovary syndrome (PCOS), [1676](#)
- Polycythemia, [605](#)
  - medical management, [928](#)
  - primary, [928](#)
  - secondary, [928](#)
- Polycythemia vera, [965](#)
  - assessment and diagnostic findings, [965](#)
  - clinical manifestations, [965](#)
  - complications, [965](#)
  - medical management, [965](#)
  - nursing management, [966](#)
  - phlebotomy in, [965](#)
  - symptoms associated with, [966t](#)
- Polydipsia, [1491](#)
- Polyethylene glycol, [1290t](#)
- Polymerase chain reaction (PCR), [2092](#)
- Polymethylmethacrylate (PMMA), [1124](#)
- Polymorphonuclear neutrophils (PMNs), [889](#)
- Polymyalgia rheumatica (PMR), [1087](#)
- Polymyositis, [1086](#)

- Polyphagia, [1491](#)
- Polypharmacy, [166](#)
  - adverse effects, [179](#)
  - definition of, [166](#)
  - drug interactions, [179](#)
- Polyps of colon and rectum, [1333](#)
- Polyurethane resins, [1166](#)
- Polyuria, [1491](#)
- Pomalidomide, [969](#)
- Popliteal artery aneurysms, [841](#)
- Population screening, [127](#)
- Portal hypertension, [1364](#). *See also* Ascites
- Portosystemic encephalopathy. *See* Hepatic encephalopathy
- Position (postural) sense, [1966](#)
- Positive chandelier sign, [1651](#)
- Positive end-expiratory pressure (PEEP), [527](#)
- Positive feedback, [105](#)
- Positron emission tomography (PET), [678](#)
  - nervous system, [1989](#)
- POSS. *See* Pasero Opioid-Induced Sedation Scale
- Postanesthesia care unit (PACU), [437](#)
  - admission to, [445](#)
  - Aldrete score form, [443f](#)
  - cardiovascular stability, maintenance of, [439](#)
  - definition of, [437](#)
  - discharge from, [444](#)
  - nausea and vomiting, control of, [441](#)
  - nursing management in, [438](#)
  - pain and anxiety, management of, [441](#)
  - patient assessments, [438](#)
  - phases of care in, [437–438](#)
  - record, [443f](#)
  - shock in, [440](#)
- Postcoital intrauterine device insertion, [1664](#)
- Posterior cruciate ligament (PCL), [1156](#)
- Post-exposure prophylaxis (PEP), [1004](#)
- Postinfarction syndrome, [1563](#)
- Postmenopausal bleeding, [1671](#)
- Postnecrotic cirrhosis, [1393](#). *See also* Cirrhosis
- Postoperative nausea and vomiting (PONV), [215](#)

- aromatherapy for, 442c
- medications for, 441, 441t
- risk of, 442
- Postoperative neurologic assessments, 2109
- Postoperative nursing, immediate interventions, 445c
- Postoperative phase
  - complication prevention, 409c
  - complications, 455t
  - definition of, 396
  - hospitalized patients, 444–445
  - nursing activities in, 398c
- Post-polio syndrome (PPS), 2112
- Postthrombotic syndrome, 853
- Posttraumatic stress disorder (PTSD), 2214
- Postural drainage, 625
  - chest physiotherapy, 624
- Postural hypotension, 449
  - assessment, 666c
  - cardiovascular disease, 665t
  - orthostatic, 666
- Postural instability, 2123
- Posture, assessment of, 1105
- Potassium
  - deficit, 1556t
  - effect on electrocardiogram, 244f
  - excess, 1556t
  - intravenous, 245
- Potassium chloride, 1585
- Potassium imbalance, 243
  - hyperkalemia, 245
  - hypokalemia, 243
- Potassium iodide, 1464
- Potassium-sparing diuretics for hypertension, 872t
- Powders, wound care, 1819
- PPACA. *See* Patient Protection and Affordable Care Act
- PP interval, 690
- Pramlintide, for diabetes, 1504
- Prasugrel, for angina, 734t
- Prazosin, for hypertension, 874t
- Preadmission testing (PAT), 396

- Preanesthetic medication, [413](#)
- Precapillary sphincter, [819](#)
- Precision Medicine Initiative (PMI), [8](#)
- Preconception/periconception health care, [1668](#)
- Prediabetes, [1487](#)
- Predisposition testing, [130](#)
- Prednisolone, [1073t](#)
- Prednisone, [1073t](#)
- Pregabalin, [217](#)
- Pregnancy, genetics referrals in, [135c](#)
- Pregnyl, [1667c](#)
- Prehypertension, [866](#), [866t](#)
- Preload, [655](#)
- Premature atrial complex (PAC), [697](#), [697f](#)
- Premature ejaculation, [1751](#)
- Premature junctional complex, [704](#)
- Premature ventricular complex (PVC), [705](#), [706f](#)
- Premenstrual dysphoric disorder (PMDD), [1656](#)
- Premenstrual syndrome (PMS), [1656](#)
  - clinical manifestations, [1656](#)
  - medical management, [1656–1657](#)
  - nursing management, [1657](#)
  - pharmacologic treatments, [1657](#)
- Prenatal screening, [125](#)
- Preoperative assessments, [402](#)
  - alcohol use, [403–404](#)
  - cardiovascular system, [404](#)
  - dentition, [403](#)
  - drug use, [403–404](#)
  - endocrine function, [405](#)
  - hepatic function, [405](#)
  - immune function, [405](#)
  - nutrition status, [402](#)
  - psychosocial factors, [407](#)
  - respiratory function, [404](#)
  - thyrotoxicosis, [405](#)
- Preoperative education, [408](#)
  - for ambulatory surgery, [410](#)
  - for older adults, [410c](#)
- Preoperative phase

- checklist, 412f
- definition of, 396
- expected outcomes, 414, 414c
- patient activities in, 414c
- records, 413
- timing of, 397
- Presbycusis, 1945
  - auditory changes, 175
  - definition of, 166
- Presbyopia, 166
- Pressure-reducing mattress, 1699
- Pressure-relieving devices, 1826
- Pressure support ventilation (PSV), 527
- Pressure ulcers, 1169
  - areas susceptible to, 1824f
  - assessment of, 1821
  - description of, 1824
  - developmental stages, 1825c
  - diagnosis of, 1824
  - healing, promotion of, 1828
  - interventions, 1826
  - nutritional status and, 1828
  - prevention of recurrence, 1828
  - risk factors, 1821
  - stages of, 1828
  - treatment of, 1828
- Pressurized metered-dose inhaler (pMDI), 616f
  - aerosol delivery devices, 615t
- Presymptomatic testing, 128
- Preventive ethics, 29
  - ethical decision making, 29
  - ethics committees, 29
  - patient self-determination, 29
- Priapism, 1743
  - ischemic form, 1776
  - nonischemic, 1776
  - stuttering, 1776
- Primary aldosteronism, 1482
  - assessment and diagnostic findings, 1483
  - clinical manifestations, 1482

- medical management, [1483](#)
- nursing management, [1483](#)
- Primary glomerular diseases, [1558–1560](#)
- Primary headache, [1993](#), [2026](#)
- Primary hypertension, [865](#). *See also* Hypertension
- Primary immune deficiency diseases (PIDDs), [1004](#)
  - assessment and diagnostic findings, [1005](#)
  - clinical manifestations, [1005](#)
  - Ig replacement therapy at home, [1007](#)
  - medical management, [1005](#)
  - nursing management, [1007](#)
  - pathophysiology, [1005](#)
  - prevention, [1005](#)
- Primary injury, [2055](#)
- Primary liver tumors, [1404–1405](#)
- Primary myelofibrosis, [968](#)
- Primary polycythemia. *See* Polycythemia vera
- Primary prevention, [308](#)
- Primary survey, [2179](#)
- Primary thrombocythemia. *See* Essential thrombocythemia (ET)
- PriMatrix, [857](#)
- PR interval, [690](#)
- Prinzmetal's angina, [733c](#)
- Private health information (PHI), [28](#)
- PRK. *See* Photorefractive keratectomy
- Probenecid, [1090t](#)
- Probiotics, [1295](#)
- Procainamide, for ventricular tachycardia, [706](#)
- Procaine (Novocaine), [429t](#)
- Procarbazine, [321t](#)
- Prochlorperazine, [441t](#)
- Proctitis, [1333](#)
- Proctoscopy, [1224](#)
- Progesterone, [1640](#)
- Progesterone in oil, [1640](#)
- Prognosis
  - awareness of, [389](#)
  - definition of, [367](#)
- Programmed cell death. *See* Apoptosis
- Progressive multifocal leukoencephalopathy (PML), [1024](#)



- Prolactin (PRL), [1449](#)
- Proliferative phase, menstrual cycle, [1640](#)
- Promethazine, [441t](#)
- Prompted voiding, [1614c](#)
- Pronation, [41c](#)
- Prophylactic vaccines, [331](#)
- Propofol, [427t](#)
- proportional assist ventilation (PAV), [527](#)
- Propranolol (Inderal)
  - for hypertension, [873t](#)
  - for hyperthyroidism, [1464t](#)
  - for variceal bleeding, [1377](#)
- Proprioceptors, [470](#)
- Proprotein convertase subtilisin-kexin type 9 (PCSK9), [730](#)
- Proptosis, [1896](#), [1929](#)
- Propylthiouracil, for hyperthyroidism, [1464t](#)
- Prostaglandin inhibitors, in diabetes insipidus, [1452](#)
- Prostaglandins, [1041](#)
- Prostanoids, [575](#)
- Prostate cancer, [1755–1761](#). *See also* Prostate surgery
  - assessment and diagnostic findings, [1755](#)
  - clinical manifestations, [1755](#)
  - familial predisposition to, [1755](#)
  - nursing care plan, [1757c–1760c](#)
  - risk factors for, [1755](#)
  - treatment for, [1755](#)
    - chemotherapy, [1761](#)
    - hormonal strategies, [1761](#)
    - other therapies, [1761–1762](#)
    - radiation therapy, [1756–1757](#)
    - surgical management, [1756](#)
- Prostatectomy, [1743](#)
  - and catheter problems, [1767](#)
  - and hemorrhage, [1766–1767](#)
  - home care checklist, [1769c](#)
  - infection after, [1767](#)
  - laparoscopic radical, [1767](#)
  - nursing process, [1725](#)
    - anxiety reduction, [1765](#)
    - assessment, [1765](#)

- complications management, 1766–1767
- diagnosis, 1765
- discomfort, reducing of, 1765–1766
- evaluation, 1769
- fluid balance, 1766
- pain relief, 1766
- patient education, 1772c
- patient preparation, 1766
- planning and goals, 1765
- postoperative nursing interventions, 1766–1769
- preoperative nursing interventions, 1765
- perineal, 1762
- retropubic, 1762
- sexual dysfunction after, 1768
- suprapubic, 1768
- and urinary incontinence, 1768
- and venous thromboembolism, 1767
- Prostate gland, 1745
- Prostate-specific antigen (PSA), 1743
- Prostate surgery, 1762
  - complications, 1762
  - nursing process 1765
  - procedures, 1762, 1763t–1764t
    - laparoscopic radical prostatectomy, 1762
    - perineal prostatectomy, 1762, 1764f
    - retropubic prostatectomy, 1762, 1764f
    - suprapubic prostatectomy, 1762, 1764f
    - transurethral incision of the prostate, 1762, 1764f
    - transurethral resection of prostate, 1762, 1764f
- Prostatic stents, 1755
- Prostatitis, 1743
  - clinical manifestations, 173
  - medical management, 1753
  - nursing management, 1753
  - patient education, 1753
  - types of, 1753
- Prostheses, 45
- Protamine sulfate, 749
- Protease inhibitors, 1019t–1020t
- Proteasome inhibitors, 979

- Protein
  - deficit, [1556t](#)
  - in diabetic diet, [1494](#)
  - hormones, [1447](#)
  - metabolism, role of liver in, [1366](#)
  - wound healing and, [404t](#)
- Protein C deficiency, [945](#)
- Protein S deficiency, [945](#)
- Proteinuria, [1534](#)
- *Proteus vulgaris*, wound infections, [456](#)
- Prothrombin time (PT), [894](#)
  - reference range, [673t](#)
- Proton-pump inhibitors (PPIs), for esophageal spasm, [1254](#)
- Proton therapy, [317](#)
- Provider in triage (PIT), [2185](#)
- Provirus, [1013](#)
- Provocative testing, [1045](#)
- Proximal interphalangeal (PIP) joint, [1123](#)
- Pruritus, [215](#)
  - definition of, [1815](#)
  - general, [1829](#)
  - liver dysfunction and, [1384](#)
  - at night, [1839](#)
  - perianal, [1830](#)
  - perineal, [1830](#)
  - post-burn, [1885](#)
- Pseudoaddiction, [212](#)
- Pseudobulbar affect, older adults with, [2017](#)
- Pseudocysts, [1437](#). *See also* Pancreatic cysts
- Pseudoephedrine sulfate, for stress incontinence, [1613](#)
- Pseudohyperkalemia, [246](#)
- *Pseudomonas aeruginosa*, [2150](#)
  - wound infections, [456](#)
- Pseudothrombocytopenia, [932](#)
- Psoriasis, [1842](#)
  - home care checklist, [2150](#)
  - management of, [1843](#)
- Psoriatic arthritis, [1088](#)
- Psychiatric emergencies
  - patients who are overactive, [2214](#)

- patients who are suicidal, 2214
- posttraumatic stress disorder, 2214
- Psychiatric nurse clinician, 2133
- Psychoneuroimmunology, 103
- Psychosocial assessment, 136, 136c
- Psychosocial interventions, 411
- Psychotherapy, for depression, 181
- Psyllium, 1290t
- PTCA. *See* Percutaneous transluminal coronary angioplasty
- PTK. *See* Phototherapeutic keratectomy
- Ptosis, 1896
- PTSD. *See* Posttraumatic stress disorder
- Pubic hair, 1811–1812
- Public health nursing, 54
- Pulmonary agents, 2237
- Pulmonary angiography, 489
- Pulmonary artery catheter, 684, 685f, 685f
- Pulmonary artery pressure monitoring, 685
- Pulmonary contusion, 591
- Pulmonary diffusion, 462
- Pulmonary disorders, assessments, 659t
- Pulmonary edema, 574
  - burn injuries and, 1885
  - flash, 798
- Pulmonary function tests (PFTs), 486, 486t
- Pulmonary hypertension, 574–576, 574c
  - and heart failure, 794
  - sickle cell disease and, 920–921
- Pulmonary perfusion, 462
- Pulmonary rehabilitation, 618
- Pulmonary tuberculosis546
  - assessment, 548–549
  - clinical manifestations, 547
  - diagnostic findings, 548–549
  - gerontologic considerations, 549
  - medical management, 549
  - medications, 549t
  - nursing management, 550
  - pathophysiology, 546–547
  - transmission, 546

- Pulmonary vascular resistance, 656
- Pulmonic area, 667
- Pulmonic valve, 765
  - anatomy of, 766, 766f
- Pulse amplitude, 666
- Pulse deficits, 666
- Pulseless electrical activity (PEA), 793
- Pulse oximetry, 487, 487f
- Pulse pressure, 665
  - analysis, 687
  - orthostatic (postural), 666
- Pulsus paradoxus, 793
- Punctum plugs, 1085
- Purkinje cells, 654, 654f
- Purulent, 527
- Pustule, 1807t
- PUVA, 1844
- P vera. *See* Polycythemia vera
- P wave, 690
- Pyelonephritis, 1604, 1610
  - acute, 1610
  - chronic, 1610
- Pyloric obstruction, 1266
- Pyloroplasty, 1266
- Pylorus, 1266
- Pylorus-preserving pancreaticojejunostomy (PPPD), 1441
- Pyodermas, 1815
- Pyogenic liver abscesses, 1412
- Pyridostigmine bromide, 2101
- Pyridoxine deficiency, 1384
- Pyrosis, 1228
- Pyuria, 1534

## Q

- QRS complex, 694, 709
- QT interval, 246, 249, 694, 700, 706
- Quadriceps muscles, strengthening of, 43
- Quadriplegia, 2070
- Quality and Safety Education for Nurses (QSEN), 9–10, 10t
- Quality of life, effect of pain and, 45

- QuantiFERON-TB Gold (QFT-G) test, [548–549](#)
- Quantitative computed tomography (QCT), [1110](#)
- Quantitative ultrasound (QUS), [1110](#)
- Quetiapine, [1346t](#)
- Quick SOFA (qSOFA) scale, [294](#)
- Quinapril, for hypertension, [872t](#)

## R

- Radiation therapy, [1405](#)
  - or bladder cancer, [1626](#)
  - cancer management and, [1737–1738](#)
  - definition of, [1405](#)
  - protecting caregivers, [319](#)
  - toxicity associated with, [316](#)
- Radical cystectomy, [1620](#)
- Radiocontrast-induced nephropathy (CIN), [681](#)
- Renal cancer, [1562–1564](#)
  - assessment and diagnostic findings, [1563](#)
  - clinical manifestations, [1563](#)
  - incidence of, [1564](#)
  - medical management, [1563–1564](#)
  - nursing management, [1564](#)
  - patient education, [1564](#)
  - pharmacologic therapy, [1563–1564](#)
  - surgical management
    - nephrectomy, [1563](#)
    - renal artery embolization, [1563](#)
- Renal replacement therapies
  - continuous venovenous hemodialysis, [1584](#)
  - continuous venovenous hemofiltration, [1584](#)
- Renal trauma, [1601](#)
  - medical management, [1596](#)
  - nursing management, [1597](#)
- Renin–angiotensin–aldosterone system, [232](#)

## S

- Stress
  - adaptation and, [98](#)
  - definition, [98](#)
  - health-promoting lifestyle and, [100](#)

- holistic therapies for, [110c](#)
- hypothalamus and, [101](#)
- mediators of, [99](#)
- physiologic responses to, [101](#)
- response to
  - hypothalamic-pituitary, [101–103](#)
  - immunologic, [103](#)
  - maladaptive, [103](#)
  - sympathetic–adrenal–medullary, [101](#), [102t](#)
  - by sympathetic nervous system, [101](#)
- sources of, [99](#)
- Stressometer® (SOM), [99](#)
- Stress Overload Scale (SOS), [99](#)

## T

- Tabun, [2236](#)
- TACE-transarterial chemoembolization, [1405](#)
- Tachypnea
  - description of, [462](#), [472](#)
  - patterns, [479t](#)
  - physical assessment, [477](#)
- Tacrolimus (Prograf), [246](#), [328](#), [779](#), [780](#), [1058](#), [1408](#), [1410](#), [1598t](#)
- Tactile fremitus, [85](#), [480–481](#), [480f](#)
- Tadalafil (Cialis), for erectile dysfunction, [1749t](#), [1750](#), [1750t](#)
- Tamm–Horsfall protein, [1548](#)
- Tamoxifen, [1695](#)
  - in breast cancer, [1721](#), [1733–1734](#), [1734f](#)
  - and uterine cancers, [1697](#)
- Tampons, [1655](#)
- Tampon test, [1687](#)
- Tamsulosin, for BPH, [1754](#)
- Tapentadol (Nucynta), [214](#)
- Targeted therapies, [130](#)
  - biologic response modifiers therapy, [333–334](#)
  - for breast cancer, [1734–1735](#)
  - definition of, [302](#)
  - for gastric cancer, [1279](#)
  - gene therapy, [333–334](#)
  - nursing management, [333](#)
  - therapeutic and adverse effects, [333](#)

- Taste
  - age-related changes, 171t, 176
  - impairment of, 350
- Taxanes, 321t, 1732
- Tazarotene (Tazorac), for psoriasis, 1843
- T cells. *See* T lymphocytes
- Teaching
  - definition of, 56, 58
  - group, 60
  - nursing function of, 57, 61
  - plan formulation, 61–63
  - teaching aids, 60
  - techniques, 60
- Teaching aids, 60
- Teaching-learning process
  - assessments, 61
  - evaluation, 63
  - implementation, 63
  - planning, 61–63
- Teamwork, surgical teams, 417–420
- Technology
  - and end-of-life care, 369
  - genetic and genomic, 125–127
  - perioperative nursing and, 396
- Technology Informatics Guiding Education Reform (TIGER) initiative, 8
- Telangiectasias, 1798, 1803c, 1811f, 1820
- Telehealth, use of, 5, 34, 163
  - in home health care, 8
- Telemetry, 651
  - ECG monitoring, 674, 675
  - transmitters, 677
- Teleologic theory, 24–25
- Teletherapy, for prostate cancer, 1756
- Telmisartan (Micardis), for hypertension, 872t
- Temozolomide (Temodar), 2117
- Temperature, regulation of
  - burn injuries and, 1873
- Temporal lobes, tumors of, 1968, 1968f, 2091c
- Temporomandibular disorders, 1233–1234



- assessment and diagnostic findings, 1233
- causes, 1233
- clinical manifestations, 1233
- medical management, 1233–1234
- TEN. *See* Toxic epidermal necrolysis
- Tendonitis, 1104, 1113, 1117
- Tendons, 1097, 1117
  - injuries to, 1153, 1157
- Tenecteplase (TNKase), 843
  - for venous thromboembolism, 849t
- Tenesmus, 1287, 1291
- Teniposide (Vumon, VM-26), 321t
- Tenofovir (TDF), 1018t
  - in hepatitis B, 1390
- Tenorrhaphy, 1080
- Tension pneumothorax, 527, 593–594
- Terazosin (Hytrin)
  - for BPH, 1754
  - for hypertension, 874t
- Terconazole (Terazol) cream
  - for candidiasis, 1678
- Teriflunomide (Aubagio), 2097
- Terminal illness
  - confusion and, 381
  - definition of, 367
  - hope and, 382
  - spiritual care, 383–384
- Terrorism, 2218, 2218–2219
  - and mortality, 2219
  - preparedness and response
    - decontamination, 2229
    - personal protective equipment, 2227–2229
    - recognition and awareness, 2227
- Tertiary prevention, 309
- Testes, 1447f, 1744, 1744f
- Testicular cancer, 1771–1774
  - assessment and diagnostic findings, 1771–1773, 1772c
  - clinical manifestations, 1771
  - germinal, 1771
  - medical management, 1773

- nongerminal, 1771
- nursing management, 1773–1774
- risk factors for, 1771
- secondary, 1771
- side effects with treatment for, 1773
- Testicular self-examination (TSE), 1746–1747, 1771, 1772c
- Testicular torsion, 1770–1771
- Testosterone, 1743, 1744
  - effects on bone remodeling, 1099
- Tetanus, 2147t
  - prophylaxis, 2191
  - in snakebites, 2202
- Tetany, 1470, 1472–1473
  - hypocalcemia and, 248
  - latent, 1473
  - overt, 1473
- Tetrabenazine (Xenatine), 2129
- Tetracaine (Pontocaine), 429t
- Tetracycline
  - for gastritis, 1269t
  - in hidradenitis suppurativa, 1831
- Tetraplegia, 1827, 1976, 2055, 2070
- Thalamotomy, 2124
- Thalassemia major, 926
- Thalassemias, 925–926
  - alpha-thalassemias, 925–926
  - beta-thalassemia, 926
  - treatment of, 926
- Thalidomide, 963, 978t, 980, 1059
- The bends. *See* Decompression sickness
- Theophylline, 432
  - asthma treatment, 636t, 639
  - toxicity, 250
  - avoid during stress testing and, 678
- Therapeutic communication
  - in palliative care and, 369, 375
  - techniques, 15t
- Therapeutic regimen
  - adherence to, 57–58
  - chronic illness and, 160

- definition of, [56](#)
- for heart failure, [808](#)
- management at home, [49c](#)
- nonadherence to, [1054–1055](#)
- in pneumonia, [539–540](#)
- Therapeutic vaccines, [332](#), [1756](#)
- Thermistors, [685](#), [686f](#)
- Thermoregulatory alterations
  - burn injuries and, [1873](#)
- Thiamine deficiency, [179](#), [1384](#)
- Thiazide diuretics
  - in diabetes insipidus, [1452](#)
  - in heart failure, [800t](#)
  - in hypervolemia, [237](#)
  - in hypocalcemia, [250](#)
  - for hypertension, [1410](#)
  - pulmonary edema, [800](#)
- Thiazolidinediones, [1504](#), [1506t](#)
- Thin-layer Rapid Use Epicutaneous (T.R.U.E.) test, [1057](#)
- 6-Thioguanine (Tabloid), [321t](#)
- Thiopental sodium (Pentothal), [427t](#)
- Thiotepa (Thioplex), [321t](#)
- Third-degree atrioventricular block, [709–710](#)
- Third-degree burns, [1868](#), [1868f](#)
- Third-degree strain, [1153](#)
- Third-party payers, [34](#)
- Thomas splint, [1176](#)
- Thoracentesis, [492](#), [527](#)
  - in empyema, [555](#)
  - in pleural effusion, [554–555](#)
- Thoracic aortic aneurysm, [839](#)
- Thoracic injuries, halo/vest for, [2075f](#)
- Thoracic surgery, [580–595](#), [581c](#), [592f](#)
  - continuing and transitional care, [585](#)
  - patient education, [586c](#)
  - postoperative management, [582–589](#), [583c–585c](#)
  - preoperative management, [580–582](#)
- Thoracolumbar junction, [1193](#)
- Thoraco-lumbar-sacral orthosis (TLSO), [1193](#)
- Thoracolumbar spine, [1193](#)

- Thoracoscopy, 491–492
  - endoscopic, 491, 491f
  - nursing interventions, 492
  - procedure, 491–492
  - video-assisted, 492
- Thoracotomy, 527, 580, 591c
  - home care, 587c
  - nursing care 583c–585c
  - nursing management of patient, 580
- Thorax
  - auscultation, 482–483
  - inspection, 477–479
  - landmarks, 478c
  - palpation, 479–481
  - percussion, 481, 481f
  - structures of, 464f
- 3-dimensional conformal radiation therapy (3D-CRT), 1280
- thrifty gene hypothesis, 1344
- Thromboelastography, 941
- Thrombin inhibitors, 849t, 939
- Thrombocytes. *See* Platelets
- Thrombocytopenia, 357, 909, 916, 932–933
  - assessment and diagnostic findings, 932
  - causes and management, 932t
  - clinical manifestations, 932
  - description of, 302
  - heparin-induced, 735, 939–940
  - medical management, 932–933
  - nursing management, 933
- Thrombocytosis, 909 950, 965
  - secondary, 942
- Thromboembolism, 811
  - venous, 296, 315, 399, 455, 817, 845, 1792
- Thrombolytic therapy, 740, 2036
  - administration of, 741c
  - in arterial embolism and arterial thrombosis, 843
  - in pulmonary embolism, 851, 852
- Thrombophilias, 946
- Thrombophlebitis, 369
- Thrombopoietin (TPO), 906c

- Thrombotic disorders, 942, 944–945
- Thrush, 1230t
- Thumbs rest, 1454
- Thymectomy, 2102
- Thyrocalcitonin. *See* Calcitonin
- Thyroglobulin, 1455
- Thyroid-binding globulin, 890
- Thyroid-binding hormones, 1453
- Thyroid cancer, 1467–1470
  - assessment and diagnostic findings, 1468
  - incidence of, 1467
  - lifestyle and risk of, 1468c
  - medical management, 1468–1469
  - nursing management, 1469–1470
    - complications management, 1469–1470
    - home, community-based, and transitional care, 1470
    - postoperative care, 1469
    - predischage education, 1470
    - preoperative care, 1469
- Thyroid cartilage, 464, 465f, 1452f, 1454
- Thyroidectomy, 1446, 1455
- Thyroid gland, 1452
  - anatomy, 1452
  - calcitonin, 1453
  - diagnostic evaluation, 1454
    - fine-needle aspiration biopsy, 1455
    - medications affecting test results, 1455, 1455c
    - radioactive iodine uptake test, 1455
    - serum free T<sub>4</sub>, 1454
    - serum T<sub>3</sub> and T<sub>4</sub>, 1454
    - serum thyroglobulin, 1455
    - serum TSH concentration, 1454
    - thyroid antibodies, 1454–1455
    - thyroid scan, radioscan, or scintiscan, 1455
    - T<sub>3</sub> resin uptake test, 1454
- hormones of, 1452–1453
  - function of, 1452
  - regulation of, 1453, 1453f
  - synthesis of, 1453
- hyperthyroidism, 1461–1467

- hypothyroidism, [1455–1461](#)
- pathophysiology, [1453](#)
- physical examination, [1453–1454](#)
- thyroid cancer, [1467–1470](#)
- thyroid tumors, [1467](#)
- Thyroid hormone, [1098](#), [1452–1453](#)
  - calcitonin, [1453](#)
  - drug interactions, [406t](#)
  - function of, [1452](#)
  - regulation of, [1453](#), [1453f](#)
  - synthesis of, [1453](#)
- Thyroiditis, [1446](#), [1455](#)
- Thyroid-releasing hormone (TRH), [1453](#), [1453f](#)
- Thyroid-stimulating hormone (TSH), [1446](#), [1450](#), [1453](#)
- Thyroid storm, [1443](#), [1463](#), [1463c](#)
- Thyroid tumors, [1467](#)
- Thyrotoxicosis, [1446](#), [1461](#), [1463c](#)
- Thyroxine (T<sub>4</sub>), [1446](#), [1452](#). *See also* Thyroid gland
- Thyroxine-binding globulin (TBG), [1453](#), [1454](#)
- TIA. *See* Transient ischemic attack
- Tibia, [1192](#)
- Tick bites, [2202](#), [2202f](#)
- Tidal volumes, [462](#), [467t](#), [480](#), [485](#)
- Time, attitude towards, [94](#)
- Timed voiding, [1614c](#)
- Timolol, for hypertension, [873t](#)
- Tinea, [1815](#), [1838](#), [1839t](#)
- Tinidazole, for trichomoniasis, [1679](#)
- Tinnitus, [1935](#), [1940](#), [1957](#)
- Tipranavir (TPV), [1020t](#)
- TIPS. *See* Transjugular intrahepatic portosystemic shunt
- Tirofiban (Aggrastat), [661](#)
- Tissue integrity, in cancer, [336–350](#)
- Tissue perfusion, [236](#), [275](#)
  - cerebral
    - maintaining, [2012–2013](#)
    - optimizing, [2005](#), [2051–2052](#)
  - decreased, [1822](#)
  - improving, [1827](#)
  - maintaining adequate, [761–762](#)

- monitoring of, [277–278](#)
- Tissue perfusion
  - during cardiac surgery, [742](#), [761–762](#)
  - mean arterial pressure and, [275](#)
  - monitoring of, during shock, [277–278](#)
- Tizanidine (Zanaflex), [2042](#), [2084](#), [2097](#)
- TLC diet. *See* Therapeutic Lifestyle Changes diet
- T lymphocytes, [308](#), [888t](#), [889](#), [930](#). *See also* Cellular immune response
  - in aplastic anemia, [916–917](#)
  - function of, [889](#), [1039](#)
  - types of, [993](#)
- Tobramycin (TOBI), [644](#), [665](#)
- Tocilizumab, [1073t](#)
- *To Err Is Human: Building a Safer Health System* (IOM report), [9](#)
- Tolerance, [197](#), [211](#), [212](#), [806](#), [987](#)
- Tolvaptan (Samsca), [241](#), [1562](#)
- Tongue, [1215](#)
- Tongue turgor, [236](#)
- Tonicity, [227–228](#)
- Tonometry, [1901–1902](#)
- Tonsilitis, [494](#), [505–506](#)
  - clinical manifestations, [505](#)
  - diagnosis of, [505](#)
  - medical management, [505](#)
  - postoperative care, [506](#)
- Tonsils, anatomy, [463–464](#)
- Tooth decay, [1229](#), [1232](#)
- Tophi, [1067](#), [1089](#), [1090](#)
- Topical corticosteroids
  - for atopic dermatitis, [1057](#)
  - for pruritus, [1830](#)
  - with topical nasal decongestant, [1052](#)
  - for vulvar dystrophy, [1691](#)
  - wound care, [1820](#), [1820t](#)
- Topoisomerase I inhibitors, [321t](#)
- Topoisomerase II inhibitors, [321t](#), [978t](#)
- Topotecan (Hycamtin), [321t](#)
- Torsades de pointes, [694](#), [707](#)
- Torsemide, [237](#)

- for hypertension, [873t](#)
- Total hip arthroplasty (THA), [1126–1133](#)
  - avoiding hip dislocation, [1131c](#)
  - home care after, [1132c](#)
  - nursing interventions, [1127c–1129c](#)
    - gerontologic considerations, [1133](#)
    - hip prosthesis, [1130](#), [1130f](#)
    - home, community-based, and transitional care, [1132–1133](#), [1132c](#)
    - infection prevention, [1131–1132](#)
    - monitoring wound drainage, [1130–1131](#)
    - promoting ambulation, [1130](#)
    - VTE prevention, [1131](#)
  - patient education, [1131c](#)
- Total hysterectomy, for cervical cancer, [1696c](#), [1702](#)
- Total joint arthroplasty, [1124](#)
- Total joint replacement. *See* Total joint arthroplasty
- Total knee arthroplasty (TKA), [1125](#), [1134](#)
  - nursing interventions, [1134](#)
  - postoperative, [1134](#)
  - preoperative telephone support, [1126c](#)
- Total nutrient admixture (TNA), [1287](#), [1314](#)
- Total pancreatectomy, [1441](#)
- Total thyroidectomy, [1467](#)
- Total urinary incontinence. *See* Urinary incontinence
- Touch, attitude towards, [94](#)
- Tourniquet, [1063t](#), [1119](#), [2189–2190](#)
  - pneumatic, [1125](#)
  - pseudohyperkalemia and, [246](#)
- Toxic epidermal necrolysis (TEN), [1848–1851](#)
  - clinical manifestations, [1849](#)
  - complications, [1849](#)
  - diagnosis of, [1849](#)
  - drug hypersensitivity and, [1058–1059](#)
  - medical management, [1849](#)
  - nursing process, [1849–1851](#)
- Toxic hepatitis, [1391](#)
- Toxic nodular goiter, [1464–1465](#)
- TP interval, [694](#)
- Trabeculae, [1097](#), [1098](#)
- Trachea, anatomy, [425f](#), [464](#)



- Tracheoesophageal puncture, [517](#), [517f](#)
- Tracheostomal stenosis, [521](#)
- Tracheostomy collars, [612f](#)
- Tracheostomy tube, [519](#), [527](#)
  - in acute respiratory failure, [557–558](#), [558f](#)
  - complications associated with, prevention of, [558c](#)
  - disadvantages of, [557](#)
  - vs. laryngectomy tubes, [516](#)
  - removal of, [570](#)
- Tracheotomy, [527](#), [557–559](#)
- Trachoma
  - conjunctivitis, [1927](#)
  - definition, [1897](#), [1927](#)
- Traction, [1152](#), [1173–1178](#), [1174f](#)
  - balanced suspension, [1174–1175](#), [1174f](#)
  - Buck's extension, [1175](#)
  - effective, principles of, [1174](#)
  - goal of, [1173](#)
  - manual, [1175](#)
  - patient in, nursing management of, [1177–1178](#)
  - skeletal, [1174](#), [1176–1177](#)
  - skin, [1174](#), [1175](#)
  - straight/running, [1174](#)
  - types of, [1174–1175](#)
- Tramadol, [214](#)
- Trandolapril, for hypertension, [872t](#)
- Tranquilizers, [406t](#), [1954](#)
- Transarterial chemoembolization (TACE), [1405](#)
- Transbronchial brushing, [492](#)
- Transbronchial needle aspiration, [492](#)
- Transcatheter Arterial Embolization (TAE), [1276](#), [1406](#)
- Transcranial Doppler, [1988](#)
- Transcultural nursing, [72](#)
- Transcutaneous electrical nerve stimulation (TENS), [924](#), [1123](#), [1155](#)
- Transdermal contraceptives, [1661](#)
- Transducer-tipped catheter, [2002](#)
- Transection, [1380](#), [2055](#)
- Transesophageal echocardiography (TEE), [680–681](#)
- Transfusion, [899–907](#)
  - complications, [901](#)

- acute hemolytic reaction, 902–903
- allergic reaction, 903
- bacterial contamination, 904
- delayed hemolytic reactions, 904
- disease acquisition, 904, 905c
- febrile nonhemolytic reaction, 901–902
- transfusion-associated circulatory overload, 903–904
- transfusion-related acute lung injury, 904
- informed consent for, 900, 900c
- long-term, 905, 905t
- nursing management for transfusion reactions, 905–906
- of packed red blood cells, 901c
- and patient education, 901
- pharmacologic alternatives to, 906–907, 906c
- of platelets or fresh-frozen plasma, 902c
- pretransfusion assessment
  - patient history, 900
  - physical assessment, 900
- procedures, 901, 901c
- setting for, 899
- sickle cell disease and, 919
- Transfusion-associated circulatory overload (TACO), 903–904
- Transfusion dependence, 963
- Transfusion-related acute lung injury (TRALI), 903, 904
- Transient flora, 2145
- Transient ischemic attack (TIA), 1000, 2035
- Transitional care
  - components of, 35c
  - definition of, 34
  - nurse as coordinator of, 35–36
- Transitional care nurse (TCN), 48, 163
- Transitional services, 2184
- Transjugular intrahepatic portosystemic shunt (TIPS)
  - for ascites, 1374, 1374f
  - for variceal bleeding, 1378f, 1379
- Translation services, 27
- Transmissible spongiform encephalopathies (TSE), 2093
- Transmission-based precautions, 2145, 2151
- Transrectal ultrasound (TRUS), 1747
- Transsacral (caudal) block, 429

- Transsphenoidal approach, [2010t](#), [2016](#)
- Transtheoretical Model of Change, [64](#), [64t](#)
- Transthyretin, [1453](#)
- Transtracheal oxygen catheter, [611f](#), [614](#)
- Transurethral incision of prostate (TUIP), [1755](#), [1762](#), [1763t](#), [1764f](#)
- Transurethral microwave thermotherapy (TUMT), [1755](#)
- Transurethral needle ablation (TUNA), [1755](#)
- Transurethral resection of the prostate (TURP), [1743](#), [1755](#), [1762](#), [1763t](#), [1764f](#)
- Transurethral resection syndrome, [1762](#), [1765c](#)
- Transvaginal surgical mesh, [1688](#)
- Transvaginal/transrectal electrical stimulation, [1614c](#)
- Transvaginal ultrasound, for ectopic pregnancy, [1669–1670](#)
- Transverse rectus abdominal myocutaneous (TRAM) flap, [1709](#), [1736](#), [1736f](#)
- Trapeze, [1152](#), [1176](#)
- Trastuzumab, [330](#), [1279](#), [1734](#)
- Trauma, [2191–2196](#)
  - chest, [589–598](#)
    - blunt trauma, [589–592](#)
    - penetrating trauma, [592–593](#)
    - traumatic pneumothorax, [593](#)
  - forensic evidence, [2191–2192](#)
  - genitourinary, [1625–1626](#)
    - bladder trauma, [1625–1626](#)
    - ureteral trauma, [1625](#)
    - urethral trauma, [1626](#)
  - injury prevention, [2192](#)
  - mechanical, [107–108](#)
    - ocular trauma, [1924–1926](#)
    - orbital, [1923–1924](#)
  - multiple, [2179](#), [2192–2196](#)
  - neurologic, [2055–2086](#)
  - renal, [1600–1602](#)
  - of upper respiratory airway, [510–524](#)
- Traumatic brain injuries (TBI), [2056](#), [2066](#)
  - body temperature maintaining, [2064](#)
  - closed (blunt), [2058](#)
  - home care checklist, [2069](#), [2069c](#)
  - management of, [2057–2058](#)

- mild, 2060
- multisystem assessment, 2063t
- nursing process, 2061–2069
- pathophysiology of, 2056–2057, 2057f
- penetrating, 2058, 2193
- prevention of, 2065–2066
- skin integrity, maintaining, 2066
- veterans considerations, 2057
- Traumatic pneumothorax, 593
- Travel, infectious diseases and, 2176
- Tremors, Parkinson's disease, 2123, 2123f
- Trench mouth. *See* Necrotizing gingivitis
- Trendelenburg position, 434, 434f, 1315
- Treponemal tests, 2169
- *Treponema pallidum*, 2169
- TRH. *See* Thyroid-releasing hormone
- Triage, 2179, 2185–2187, 2222–2223
  - assess and intervene, 2186–2187
  - categories during mass casualty incident, 2223t
  - emergent, 2185
  - nonurgent, 2185
  - protocols, 2185–2186
  - urgent, 2185
- Triamcinolone, 500t, 1050, 1483t
- Triamcinolone acetonide, 1820t
- Triamterene, 1395
  - for hypertension, 873t
- Triceps reflex, 1982–1983
- Trichiasis, 1897, 1901, 1927
- Trichloroacetic acid, 1681
- Trichomoniasis, 1679, 1752
- Tricuspid area, 668
- Tricuspid valve, 765
  - anatomy of, 766f
- Tricyclic antidepressants (TCAs), 217, 1115
  - body weight and, 1346c
  - for depression, 181
  - in fibromyalgia, 1091
  - overdose of, 2209t
- Trigeminal nerve (CN V), 2107t

- branches, distribution of, [2108f](#)
- microvascular decompression of, [2108–2109](#)
- Trigeminal neuralgia, [2107t](#), [2108–2109](#)
- Triglycerides, [672](#), [674](#), [727](#), [1211t](#)
- Triiodothyronine (T<sub>3</sub>), [1446](#), [1452](#). *See also* Thyroid gland
- Trimethoprim–sulfamethoxazole, [1025](#)
  - in impetigo, [1835](#)
  - for urinary tract infections, [1608t](#)
- Triptans, [2028–2029](#)
- Tropical sprue, [1296t](#)
- Troponin, [725](#), [739](#)
- Trousseau sign, [248](#), [249f](#), [252](#), [1446](#), [1473](#)
- Truth-telling, [28](#)
- Trypsin, [1208](#), [1210](#), [1211t](#), [1416](#), [1417](#)
- TSE. *See* Testicular self-examination
- TSH. *See* Thyroid-stimulating hormone
- Tubal embryo transfer (TET), [1668](#)
- Tubal ligation (female sterilization), [1659c](#), [1659f](#), [1660](#),
- Tuberculin (TB) skin test, [548](#), [1079](#)
- Tuberculosis (TB), [2147t](#). *See also* *Mycobacterium* sp.; *See also* pulmonary tuberculosis
  - HIV infection and, [1022](#)
  - immigration and, [2176](#)
- Tuberculous peritonitis, [1298](#)
- Tubo-ovarian abscess, [1685](#)
- TUIP. *See* Transurethral incision of prostate
- Tularemia, [2233t](#)
- Tumor
  - antigen–antibody complexes, [308](#)
  - benign vs. malignant, [303t](#)
  - brain, [2113–2118](#)
  - brain, primary
    - home care checklist, [2120c](#)
    - nursing process, [2118–2121](#)
    - types of, [2113–2114](#)
  - grading, [301](#), [309–312](#)
  - orbital and ocular, [1929–1931](#)
  - radiosensitive, [316](#)
  - removal, [2121](#)
  - spinal cord, [2121–2122](#)

- staging, [302](#), [309–312](#), [1855](#)
- surgical techniques for, [314t](#)
- Tumor-associated antigens (TAAs), [308](#), [1405](#), [1700](#)
- Tumor lysis syndrome, [329](#), [974](#)
  - management of, [362t](#)
  - manifestation of, [362t](#)
- Tumor necrosis factor-alpha (TNF- $\alpha$ )
  - for psoriasis, [1844](#)
- Tumors of head of pancreas, [1440–1442](#)
  - assessment and diagnostic findings, [1441](#)
  - clinical manifestations, [1441](#)
  - continuing and transitional care, [1442](#)
  - medical management, [1441](#)
  - nursing management, [1441–1442](#)
  - self-care, [1442](#)
- TURP. *See* Transurethral resection of the prostate
- T wave, [691](#), [694](#)
- Tympanic membrane, [1936](#), [1936f](#), [1937](#), [1937f](#), [1938](#), [1939](#), [1939f](#)
- Tympanic membrane (TM) rupture, [2231–2232](#)
- Tympanogram, [1942](#)
- Tympanoplasty, [1935](#), [1950](#)
- Type 1 diabetes, [1488](#), [1490](#)
- Type 2 diabetes, [1488](#), [1490–1491](#)
- Tyrosine kinase inhibitors, [332–333](#), [955](#), [1735](#)
- Tzanck smear, [1813](#)

## U

- U-500 insulin, [1502](#)
- Ulcerative colitis, [1220](#)
  - assessment and diagnostic findings, [1233](#)
  - clinical manifestations, [1306](#)
  - Crohn's disease and, [1303](#)
- Ulcerogenic tumors, [1442–1444](#)
- Ulnar shaft fracture, [1181](#)
- Ultrasound-guided core biopsy, of breast, [1715](#)
- Ultraviolet-A (UVA), [1844](#)
- Ultraviolet-B (UVB), [1844](#)

## W

- Wiskott–Aldrich syndrome (WAS), [1006t](#)

- Wolff–Parkinson–White (WPW) syndrome, [703](#)
- World Health Organization (WHO), [970](#)
- World Trade Center towers, destruction of, [2230](#)
- Wound-ostomy-contenance (WOC) nurse, [1354](#)

## X

- Xanthine oxidase inhibitors, [1090](#)
- Xenografts, [1883](#)
- Xerosis, [1816](#)
- Xerostomia, [517](#)
- X-linked inheritance, [123](#)
  - definition of, [123](#)

## Y

- Yankauer suction, [1240](#)

## Z

- Zafirlukast (Accolate), [502](#), [637t](#)
- Zenker diverticulum, [1255](#)
- Zidovudine, [1933](#)
- Zika virus, [2103](#)
- Zileuton, [497](#), [637](#)
- Zoledronic acid, [977](#)
- Zollinger–Ellison syndrome (ZES), [1271](#)

# Table of Contents

Cover	1
Title Page	2
Copyright	4
Dedication	6
Contributors	7
Reviewers	26
Preface	31
User's Guide	39
Contents	56
Case Studies in This Book	143
Special Charts in This Book	146
UNIT 1: Principles of Nursing Practice	158
Chapter 1: Professional Nursing Practice	161
Nursing	165
The Patient: Consumer of Nursing and Health Care	165
The Patient's Basic Needs: Maslow Hierarchy of Needs	165
Health	166
Wellness	167
Health Promotion	167
Health Care	168
Influences on Health Care Delivery	168
Population Demographics	169
Changing Patterns of Disease and Wellness	170
Advances in Technology and Genetics	171
Quality, Safety, and Evidence-Based Practice	173
Interprofessional Collaborative Practice	174
The Practice of Nursing	178
Critical Thinking	178
The Nursing Process	182



Ethical Nursing Care	210
Chapter 2: Medical-Surgical Nursing	232
The Practice of Nursing in Today's Health Care Delivery System	234
Medical-Surgical Nursing	235
The Nurse as Coordinator of Care Transitions	236
Critical-Care Nursing	238
Rehabilitation Nursing	239
• Nursing Process: The Patient with Self-Care Deficits in Activities of Daily Living	242
• Nursing Process: The Patient with Impaired Physical Mobility	249
Home Health Nursing	271
Discharge Planning for Transition to the Community or Home Care Setting	282
Continuing the Transition through Community Resources and Referrals	282
Chapter 3: Health Education and Health Promotion	287
Purpose of Health Education	289
Meeting Nursing Standards	290
Supporting Informed Decision Making and Self-Care	290
Promoting Adherence to the Therapeutic Regimen	291
The Nature of Teaching and Learning	295
Learning Readiness	296
The Learning Environment	299
Teaching Techniques and Resources	299
The Nursing Process in Patient Education	301
Assessment	304
Nursing Diagnosis	304
Planning	304
Implementation	308
Evaluation	309
Health Promotion	310
Definition	310
Health Promotion Models	312

Components of Health Promotion	314
Health Promotion Strategies Throughout the Lifespan	319
Adolescents	320
Young and Middle-Aged Adults	320
Gerontologic Considerations	324
Nursing Implications of Health Promotion	326
Chapter 4: Adult Health and Physical, Nutritional, and Cultural Assessment	333
The Role of the Nurse Conducting a Health Assessment	335
Effective Communication	335
Cultural Concepts	336
Cultural Competence	337
Ethical Use of Health Assessment Data	338
The Role of Technology	338
Assessment in the Home or Community	339
Health History	339
The Informant	340
Components of the Health History	341
Physical Assessment	363
Examination Considerations	363
Components of the Physical Examination	364
Nutritional Assessment	370
Lifespan Considerations	371
Components of Nutritional Assessment	372
Factors Influencing Nutritional Status in Various Situations	385
Analysis of Nutritional Status	385
Cultural Assessment	385
Culturally Mediated Considerations	386
Chapter 5: Stress and Inflammatory Responses	399
Fundamental Concepts	402
Constancy and Homeostasis	403
Stress and Adaptation	404
Overview of Stress	404

Types of Stressors	404
Stress as a Stimulus for Disease	405
Psychological Responses to Stress	406
Physiologic Response to Stress	408
Maladaptive Responses to Stress	414
Indicators of Stress	415
Stress at the Cellular Level	417
Control of the Steady State	418
Cellular Adaptation	419
Cellular Injury	422
Cellular Response to Injury: Inflammation	427
Cellular Healing	429
Nursing Management	430
Promoting a Healthy Lifestyle	434
Enhancing Coping Strategies	435
Educating About Relaxation Techniques	437
Educating About Stress Management	439
Promoting Family Health	439
Enhancing Social Support	441
Recommending Support and Therapy Groups	442
The Role of Stress in Health Patterns	442
Chapter 6: Genetics and Genomics in Nursing	449
Genomic Framework for Nursing Practice	454
Integrating Genetic and Genomic Knowledge	456
Genes and Their Role in Human Variation	456
Inheritance Patterns	464
Chromosomal Differences and Genetic Conditions	476
Genetic and Genomic Technologies in Practice	477
Genetic Testing	478
Genetic Screening	482
Population Screening	486
Testing and Screening for Adult-Onset Conditions	487
Single Gene Conditions	488
Genomic Conditions	488

The Nursing Role in Testing and Screening for Adult-Onset Conditions	492
Personalized Genomic Treatments	493
Pharmacogenomics	493
Ethical, Legal, and Social Issues Surrounding Genetics	497
Ethical Concerns	497
Legal Aspects of Personalized Health Care	499
Ancestry, Cultural, Social, and Spiritual Concerns Related to Genetic and Genomic Practice	500
Applications of Genetics and Genomics in Nursing Practice	503
Genetics and Genomics in Health Assessment	504
Genetic Counseling and Evaluation Services	511
Genetics and Genomics Tomorrow	518
Chapter 7: Disability and Chronic Illness	528
Disability	529
Definitions of Disability	530
Prevalence of Disability	530
Characteristics of Disability	531
Federal Legislation	542
Right of Access to Health Care	543
Barriers to Health Care	550
Federal Assistance Programs	553
Nursing Care of Patients with Disability	555
Nursing Considerations during Hospitalization	556
Health Promotion and Prevention	556
Significance of “People-First” Language	559
Gerontologic Considerations	559
Disability in Medical-Surgical Nursing Practice	560
Home, Community-Based, and Transitional Care	562
Chronic Disease and Chronic Illness	565
Multiple Chronic Conditions	565
Health Disparities and Chronic Disease	568
Definitions of Chronic Diseases or Conditions	570
Prevalence and Causes of Chronic Conditions	571

Prevention of Chronic Disease	576
Characteristics of Chronic Conditions	577
Implications of Managing Chronic Conditions	581
Veterans Considerations	583
Gerontologic Considerations	583
Nursing Care of Patients with Chronic Conditions	584
Home, Community-Based, and Transitional Care	585
Nursing Care for Special Populations with Chronic Illness	587
Chapter 8: Management of the Older Adult Patient	596
Overview of Aging	598
Demographics of Aging	598
Health Status of the Older Adult	598
Nursing Care of the Older Adult	600
Theories of Aging	601
Age-Related Changes	602
Physical Aspects of Aging	602
Psychosocial Aspects of Aging	620
Cognitive Aspects of Aging	626
Pharmacologic Aspects of Aging	628
Mental Health Problems in the Older Adult	633
Depression	634
Substance Use Disorder	636
Delirium	638
Alzheimer's Disease	638
Pathophysiology	641
Clinical Manifestations	642
Assessment and Diagnostic Findings	642
Medical Management	643
Nursing Management	644
Vascular Dementia	649
Additional Aspects of Health Care of the Older Adult	650
Geriatric Syndromes	650
Elder Neglect and Abuse	655

Social Services	656
Health Care Costs of Aging	657
Home Health Care	657
Hospice Services	657
Aging with a Disability	658
Ethical and Legal Issues Affecting the Older Adult	658
UNIT 2: Concepts and Principles of Patient Management	667
Chapter 9: Pain Management	670
Fundamental Concepts	674
Definition of Pain	674
Effects of Pain	674
Types and Categories of Pain	675
Pain Assessment	686
Performing the Comprehensive Pain Assessment: Patient Interview	687
Reassessing Pain	696
Pain Management	697
Pharmacologic Management of Pain: Multimodal Analgesia	697
Nonpharmacologic Methods of Pain Management	728
Nursing Implications of Pain Management	729
Chapter 10: Fluid and Electrolytes	743
Fundamental Concepts	746
Amount and Composition of Body Fluids	746
Regulation of Fluid within the Body Compartments	750
Systemic Routes of Gains and Losses	754
Laboratory Tests for Evaluating Fluid Status	756
Homeostatic Mechanisms	758
Gerontologic Considerations	762
Fluid Volume Disturbances	765
Hypovolemia	765
Pathophysiology	765
Clinical Manifestations	765

Assessment and Diagnostic Findings	765
Gerontologic Considerations	768
Medical Management	769
Nursing Management	773
Hypervolemia	775
Pathophysiology	775
Clinical Manifestations	776
Assessment and Diagnostic Findings	776
Medical Management	776
Nursing Management	778
Electrolyte Imbalances	780
Sodium Imbalances	780
Sodium Deficit (Hyponatremia)	783
Pathophysiology	783
Clinical Manifestations	784
Assessment and Diagnostic Findings	784
Medical Management	785
Nursing Management	786
Sodium Excess (Hypernatremia)	788
Pathophysiology	789
Clinical Manifestations	790
Assessment and Diagnostic Findings	790
Medical Management	790
Nursing Management	791
Potassium Imbalances	792
Potassium Deficit (Hypokalemia)	793
Pathophysiology	794
Clinical Manifestations	795
Assessment and Diagnostic Findings	795
Medical Management	797
Nursing Management	797
Potassium Excess (Hyperkalemia)	799
Pathophysiology	799
Clinical Manifestations	801

Assessment and Diagnostic Findings	801
Medical Management	801
Nursing Management	803
Calcium Imbalances	804
Calcium Deficit (Hypocalcemia)	805
Pathophysiology	806
Clinical Manifestations	806
Assessment and Diagnostic Findings	808
Medical Management	809
Nursing Management	810
Calcium Excess (Hypercalcemia)	811
Pathophysiology	811
Clinical Manifestations	812
Assessment and Diagnostic Findings	812
Medical Management	812
Nursing Management	814
Magnesium Imbalances	814
Magnesium Deficit (Hypomagnesemia)	815
Pathophysiology	816
Clinical Manifestations	817
Assessment and Diagnostic Findings	817
Medical Management	817
Nursing Management	818
Magnesium Excess (Hypermagnesemia)	818
Pathophysiology	818
Clinical Manifestations	819
Assessment and Diagnostic Findings	819
Medical Management	819
Nursing Management	820
Phosphorus Imbalances	820
Phosphorus Deficit (Hypophosphatemia)	821
Pathophysiology	822
Clinical Manifestations	823
Assessment and Diagnostic Findings	823



Medical Management	823
Nursing Management	824
Phosphorus Excess (Hyperphosphatemia)	825
Pathophysiology	825
Clinical Manifestations	826
Assessment and Diagnostic Findings	826
Medical Management	826
Nursing Management	827
Chloride Imbalances	827
Chloride Deficit (Hypochloremia)	828
Pathophysiology	828
Clinical Manifestations	828
Assessment and Diagnostic Findings	830
Medical Management	830
Nursing Management	830
Chloride Excess (Hyperchloremia)	830
Pathophysiology	830
Clinical Manifestations	831
Assessment and Diagnostic Findings	831
Medical Management	831
Nursing Management	831
Acid–Base Disturbances	832
Acute and Chronic Metabolic Acidosis (Base Bicarbonate Deficit)	834
Pathophysiology	835
Clinical Manifestations	836
Assessment and Diagnostic Findings	836
Medical Management	837
Acute and Chronic Metabolic Alkalosis (Base Bicarbonate Excess)	839
Pathophysiology	839
Clinical Manifestations	839
Assessment and Diagnostic Findings	840
Medical Management	841

Acute and Chronic Respiratory Acidosis (Carbonic Acid Excess)	841
Pathophysiology	841
Clinical Manifestations	842
Assessment and Diagnostic Findings	843
Medical Management	843
Acute and Chronic Respiratory Alkalosis (Carbonic Acid Deficit)	844
Pathophysiology	844
Clinical Manifestations	845
Assessment and Diagnostic Findings	845
Medical Management	845
Mixed Acid–Base Disorders	846
Compensation	846
Blood Gas Analysis	846
Parenteral Fluid Therapy	847
Purpose	847
Types of Intravenous Solutions	848
Isotonic Fluids	848
Hypotonic Fluids	852
Hypertonic Fluids	853
Other Intravenous Therapies	853
Nursing Management of the Patient Receiving Intravenous Therapy	854
Managing Systemic Complications	854
Managing Local Complications	856
Promoting Home, Community-Based, and Transitional Care	863
Chapter 11: Shock, Sepsis, and Multiple Organ Dysfunction Syndrome	874
Overview of Shock	877
Normal Cellular Function	878
Pathophysiology	878
Stages of Shock	881
Compensatory Stage	882

Clinical Manifestations	883
Medical Management	884
Nursing Management	885
Progressive Stage	890
Pathophysiology	891
Clinical Manifestations	891
Medical Management	893
Nursing Management	894
Irreversible Stage	896
Medical Management	897
Nursing Management	897
General Management Strategies in Shock	898
Fluid Replacement	898
Vasoactive Medication Therapy	901
Nutritional Support	902
Hypovolemic Shock	907
Pathophysiology	907
Medical Management	908
Nursing Management	912
Cardiogenic Shock	913
Pathophysiology	914
Clinical Manifestations	914
Assessment and Diagnostic Findings	915
Medical Management	915
Nursing Management	920
Distributive Shock	922
Sepsis and Septic Shock	925
Pathophysiology	927
Medical Management	929
Nursing Management	933
Neurogenic Shock	936
Medical Management	936
Nursing Management	937
Anaphylactic Shock	937

Medical Management	938
Nursing Management	938
Multiple Organ Dysfunction Syndrome	939
Pathophysiology	940
Clinical Manifestations	940
Medical Management	941
Nursing Management	941
Promoting Home, Community-Based, and Transitional Care	942
Educating Patients About Self-Care	942
Continuing and Transitional Care	942
Chapter 12: Management of Patients with Oncologic Disorders	951
Epidemiology	954
Pathophysiology of the Malignant Process	955
Carcinogenesis	957
Proliferative Patterns	958
Role of the Immune System	965
Detection and Prevention of Cancer	967
Primary Prevention	967
Secondary Prevention	967
Tertiary Prevention	970
Diagnosis of Cancer	970
Tumor Staging and Grading	971
Anatomic Stage Group	980
Management of Cancer	980
Surgery	980
Diagnostic Surgery	981
Surgery as Primary Treatment	982
Prophylactic Surgery	985
Palliative Surgery	986
Reconstructive Surgery	986
Nursing Management	986
Radiation Therapy	987
Radiation Dosage	988

Administration of Radiation	989
Toxicity	992
Nursing Management	994
Protecting Caregivers	994
Chemotherapy	995
Cell Kill and the Cell Cycle	995
Classification of Chemotherapeutic Agents	996
Adjunct Chemotherapeutic Agents	996
Administration of Chemotherapeutic Agents	997
Nursing Management	1009
Protecting Caregivers	1013
Hematopoietic Stem Cell Transplantation	1014
Types of Hematopoietic Stem Cell Transplantation	1014
Nursing Management	1019
Immunotherapy and Targeted Therapy	1021
Immunotherapy	1021
Targeted Therapies	1028
Nursing Management	1030
Complementary, Alternative, and Integrative Health Therapies	1036
COVID-19 Considerations	1037
Nursing Care of the Patient with Cancer	1037
Maintaining Tissue Integrity	1037
Promoting Nutrition	1072
Relieving Pain	1075
Decreasing Fatigue	1077
Improving Body Image and Self-Esteem	1080
Addressing Sexuality	1081
Assisting in the Grieving Process	1081
Management of Psychosocial Distress	1082
Monitoring and Managing Potential Complications	1082
Promoting Home, Community-Based, and Transitional Care	1089
Gerontologic Considerations	1092

Cancer Survivorship	1093
Providing Care to the Patient with Advanced Cancer	1095
Chapter 13: Palliative and End-of-Life Care	1115
Palliative Care and End-of-Life Care	1117
The Evolution of End-of-Life Care	1119
Settings for Palliative Care and End-of-Life Care	1121
Institution-Based Palliative Care	1123
Outpatient-Based Palliative Care	1126
Community-Based Palliative Care	1127
Hospice Care	1127
Communication in Palliative Care	1132
Advanced Care Planning	1136
Symptom Assessment and Management	1138
Expected Physiologic Changes	1138
Time of Death	1152
Providing Psychosocial and Spiritual Support	1153
Hope and Meaning in Illness	1154
Providing Culturally Sensitive Care at the End-of-Life	1155
Spiritual Care	1156
Grief, Mourning, and Bereavement	1159
Special Issues for the Nurse in End-of-Life Care	1164
Medically Administered Nutrition and Hydration	1164
Palliative Sedation at the End-of-Life	1165
Clinicians' Attitudes toward Death	1171
Patient and Family Concerns	1171
Professional Caregiver Issues	1173
Supporting Ourselves	1174
UNIT 3: Perioperative Concepts and Nursing Management	1185
Chapter 14: Preoperative Nursing Management	1188
Perioperative Nursing	1190
Advances in Surgical and Anesthesia Approaches	1191
Surgical Classifications	1191
Preadmission Testing	1192

Special Considerations during the Perioperative Period	1195
Gerontologic Considerations	1197
Bariatric Patients	1197
Patients with Disability	1198
Patients Undergoing Ambulatory Surgery	1199
Patients Undergoing Emergency Surgery	1199
Required Preoperative Documents	1200
Preoperative Assessment	1203
Nutritional and Fluid Status	1205
Dentition	1208
Drug or Alcohol Use	1208
Respiratory Status	1212
Cardiovascular Status	1213
Hepatic and Renal Function	1213
Endocrine Function	1213
Immune Function	1214
Previous Medication Use	1217
Psychosocial Factors	1218
Spiritual and Cultural Beliefs	1219
Preoperative Nursing Interventions	1220
Providing Patient Education	1220
Providing Psychosocial Interventions	1229
Maintaining Patient Safety	1230
Managing Nutrition and Fluids	1230
Preparing the Bowel	1231
Preparing the Skin	1231
Immediate Preoperative Nursing Interventions	1232
Administering Medication	1233
Maintaining the Preoperative Record	1234
Preoperative Patient Warming	1235
Attending to Family Needs	1236
Expected Patient Outcomes	1237
Chapter 15: Intraoperative Nursing Management	1241
The Surgical Team	1243

The Patient	1245
The Circulating Nurse	1249
The Scrub Role	1250
The Surgeon	1251
The Registered Nurse First Assistant	1251
The Anesthesiologist and CRNA	1251
Safety and Infection Prevention	1252
The Surgical Environment	1252
Prevention of OR Fires	1253
Surgical Attire	1253
Principles of Surgical Asepsis and Sterile Technique	1255
Health Hazards Associated with the Surgical Environment	1258
Robotics	1260
The Surgical Experience	1260
Types of Anesthesia and Sedation	1260
Potential Intraoperative Complications	1271
Anesthesia Awareness	1271
Nausea and Vomiting	1272
Anaphylaxis	1272
Hypoxia and Other Respiratory Complications	1273
Hypothermia	1273
Malignant Hyperthermia	1274
Pathophysiology	1274
Clinical Manifestations	1275
Medical Management	1275
Nursing Management	1275
• Nursing Process: The Patient during Surgery	1276
Chapter 16: Postoperative Nursing Management	1287
Care of the Patient in the Postanesthesia Care Unit	1288
Phases of Postanesthesia Care	1288
Admitting the Patient to the Postanesthesia Care Unit	1289
Nursing Management in the Postanesthesia Care Unit	1290
Preparing the Postoperative Patient for Direct	1303



Discharge	
Care of the Hospitalized Postoperative Patient	1306
Receiving the Patient in the Clinical Unit	1306
Nursing Management After Surgery	1306
• Nursing Process: The Hospitalized Patient Recovering from Surgery	1310
<b>UNIT 4: Gas Exchange and Respiratory Function</b>	<b>1351</b>
Chapter 17: Assessment of Respiratory Function	1354
Anatomic and Physiologic Overview	1356
Anatomy of the Respiratory System	1356
Function of the Respiratory System	1363
Gerontologic Considerations	1376
Assessment	1376
Health History	1376
Physical Assessment of the Respiratory System	1391
Assessment of Respiratory Function in the Patient Who Is Acutely or Critically Ill	1415
Diagnostic Evaluation	1420
Pulmonary Function Tests	1420
Arterial Blood Gas Studies	1422
Venous Blood Gas Studies	1423
Pulse Oximetry	1423
End-Tidal Carbon Dioxide	1425
Cultures	1425
Sputum Studies	1426
Imaging Studies	1426
Endoscopic Procedures	1431
Biopsy	1436
Chapter 18: Management of Patients with Upper Respiratory Tract Disorders	1441
Upper Airway Infections	1443
Rhinitis	1443
Pathophysiology	1444
Clinical Manifestations	1446

Medical Management	1449
Nursing Management	1450
Viral Rhinitis (Common Cold)	1450
Clinical Manifestations	1451
Medical Management	1451
Nursing Management	1454
Rhinosinusitis	1455
Acute Rhinosinusitis	1455
Pathophysiology	1455
Clinical Manifestations	1456
Assessment and Diagnostic Findings	1457
Complications	1457
Medical Management	1458
Nursing Management	1458
Chronic Rhinosinusitis and Recurrent Acute Rhinosinusitis	1461
Pathophysiology	1461
Clinical Manifestations	1462
Assessment and Diagnostic Findings	1462
Complications	1463
Medical Management	1464
Nursing Management	1464
Pharyngitis	1465
Acute Pharyngitis	1465
Pathophysiology	1466
Clinical Manifestations	1466
Assessment and Diagnostic Findings	1467
Medical Management	1467
Nursing Management	1468
Chronic Pharyngitis	1469
Clinical Manifestations	1469
Medical Management	1470
Nursing Management	1470
Tonsillitis and Adenoiditis	1470

Clinical Manifestations	1471
Assessment and Diagnostic Findings	1471
Medical Management	1472
Nursing Management	1472
Peritonsillar Abscess	1473
Clinical Manifestations	1474
Assessment and Diagnostic Findings	1474
Medical Management	1475
Nursing Management	1475
Laryngitis	1476
Clinical Manifestations	1476
Medical Management	1476
Nursing Management	1477
• Nursing Process: The Patient with Upper Airway Infection	1478
Obstruction and Trauma of the Upper Respiratory Airway	1482
Obstructive Sleep Apnea	1482
Pathophysiology	1483
Clinical Manifestations	1483
Assessment and Diagnostic Findings	1484
Medical Management	1485
Nursing Management	1486
Epistaxis	1487
Medical Management	1487
Nursing Management	1488
Nasal Obstruction	1490
Medical Management	1490
Nursing Management	1491
Fractures of the Nose	1491
Clinical Manifestations	1491
Assessment and Diagnostic Findings	1491
Medical Management	1492
Nursing Management	1492
Laryngeal Obstruction	1493

Clinical Manifestations	1494
Assessment and Diagnostic Findings	1494
Medical Management	1494
Cancer of the Larynx	1494
Clinical Manifestations	1495
Assessment and Diagnostic Findings	1496
Medical Management	1497
• Nursing Process: The Patient Undergoing Laryngectomy	1504
Chapter 19: Management of Patients with Chest and Lower Respiratory Tract Disorders	1525
Inflammatory and Infectious Pulmonary Disorders	1529
Atelectasis	1530
Pathophysiology	1530
Clinical Manifestations	1532
Assessment and Diagnostic Findings	1533
Prevention	1533
Management	1536
Acute Tracheobronchitis	1538
Pathophysiology	1538
Clinical Manifestations	1538
Medical Management	1538
Nursing Management	1539
Pneumonia	1539
Classification	1540
Pathophysiology	1546
Risk Factors	1547
Clinical Manifestations	1551
Assessment and Diagnostic Findings	1552
Prevention	1553
Medical Management	1553
Gerontologic Considerations	1558
COVID-19 Considerations	1559
Complications	1564
• Nursing Process: The Patient with Bacterial Pneumonia	1566

Aspiration	1572
Pathophysiology	1572
Prevention	1573
Pulmonary Tuberculosis	1576
Transmission and Risk Factors	1576
Pathophysiology	1577
Clinical Manifestations	1580
Assessment and Diagnostic Findings	1581
Gerontologic Considerations	1583
Medical Management	1583
Nursing Management	1586
Lung Abscess	1588
Pathophysiology	1589
Clinical Manifestations	1589
Assessment and Diagnostic Findings	1589
Prevention	1590
Medical Management	1590
Nursing Management	1591
Sarcoidosis	1592
Pathophysiology	1592
Clinical Manifestations	1592
Assessment and Diagnostic Findings	1592
Medical Management	1593
Nursing Management	1593
Pleural Disorders	1593
Pleurisy	1594
Clinical Manifestations	1594
Assessment and Diagnostic Findings	1594
Medical Management	1594
Nursing Management	1594
Pleural Effusion	1595
Pathophysiology	1595
Clinical Manifestations	1596
Assessment and Diagnostic Findings	1596

Medical Management	1596
Nursing Management	1597
Empyema	1598
Pathophysiology	1598
Clinical Manifestations	1598
Assessment and Diagnostic Findings	1598
Medical Management	1599
Nursing Management	1599
Acute Respiratory Failure	1600
Pathophysiology	1600
Clinical Manifestations	1601
Medical Management	1601
Nursing Management	1601
• Nursing Process: The Patient Receiving Mechanical Ventilation	1618
Acute Respiratory Distress Syndrome	1639
Pathophysiology	1640
Clinical Manifestations	1641
Assessment and Diagnostic Findings	1642
Medical Management	1642
Nursing Management	1643
COVID-19 Considerations	1644
Pulmonary Vascular Disorders	1646
Pulmonary Edema (Noncardiogenic)	1646
Pulmonary Hypertension	1646
Pathophysiology	1646
Clinical Manifestations	1647
Assessment and Diagnostic Findings	1648
Medical Management	1648
Nursing Management	1650
Pulmonary Heart Disease (Cor Pulmonale)	1650
Pulmonary Embolism	1650
Occupational Lung Disease: Pneumoconioses	1650
Veterans Considerations	1652

Chest Tumors	1653
Lung Cancer (Bronchogenic Carcinoma)	1653
Pathophysiology	1653
Classification and Staging	1653
Risk Factors	1654
Clinical Manifestations	1656
Assessment and Diagnostic Findings	1657
Medical Management	1659
Surgical Management: Thoracotomy	1659
Nursing Management of the Patient Having a Thoracotomy	1659
Radiation Therapy	1672
Chemotherapy	1675
Immunotherapy	1676
Palliative Care	1676
Complications	1676
Nursing Management	1677
Gerontologic Considerations	1678
Tumors of the Mediastinum	1678
Clinical Manifestations	1678
Assessment and Diagnostic Findings	1679
Medical Management	1681
Chest Trauma	1681
Blunt Trauma	1681
Pathophysiology	1681
Assessment and Diagnostic Findings	1682
Medical Management	1682
Sternal and Rib Fractures	1683
Clinical Manifestations	1683
Assessment and Diagnostic Findings	1683
Medical Management	1684
Flail Chest	1684
Pathophysiology	1684
Medical Management	1685

Pulmonary Contusion	1686
Pathophysiology	1686
Clinical Manifestations	1687
Assessment and Diagnostic Findings	1687
Medical Management	1687
Penetrating Trauma	1688
Medical Management	1688
Pneumothorax	1689
Types of Pneumothorax	1689
Clinical Manifestations	1691
Medical Management	1692
Cardiac Tamponade	1699
Subcutaneous Emphysema	1700
Chapter 20: Management of Patients with Chronic Pulmonary Disease	1709
Chronic Obstructive Pulmonary Disease	1711
Pathophysiology	1712
Risk Factors	1716
Clinical Manifestations	1718
Assessment and Diagnostic Findings	1721
Complications	1724
Medical Management	1724
Nursing Management	1748
Bronchiectasis	1778
Pathophysiology	1779
Clinical Manifestations	1779
Assessment and Diagnostic Findings	1779
Medical Management	1780
Nursing Management	1781
Asthma	1781
Pathophysiology	1783
Clinical Manifestations	1784
Assessment and Diagnostic Findings	1785
Prevention	1786



Complications	1786
Medical Management	1787
Nursing Management	1799
Status Asthmaticus	1801
Pathophysiology	1802
Clinical Manifestations	1802
Assessment and Diagnostic Findings	1802
Medical Management	1803
Nursing Management	1804
Cystic Fibrosis	1805
Pathophysiology	1805
Clinical Manifestations	1806
Assessment and Diagnostic Findings	1806
Medical Management	1807
Nursing Management	1810
<b>UNIT 5: Cardiovascular and Circulatory Function</b>	<b>1818</b>
Chapter 21: Assessment of Cardiovascular Function	1821
Anatomic and Physiologic Overview	1825
Anatomy of the Heart	1825
Function of the Heart	1830
Gerontologic Considerations	1837
Gender Considerations	1837
Assessment of the Cardiovascular System	1838
Health History	1841
Physical Assessment	1855
Diagnostic Evaluation	1876
Laboratory Tests	1876
Chest X-Ray and Fluoroscopy	1882
Electrocardiography	1882
Cardiac Stress Testing	1889
Radionuclide Imaging	1891
Additional Imaging	1894
Echocardiography	1896
Cardiac Catheterization	1898

Electrophysiologic Testing	1904
Hemodynamic Monitoring	1905
Chapter 22: Management of Patients with Arrhythmias and Conduction Problems	1922
Arrhythmias	1925
Normal Electrical Conduction	1926
Influences on Heart Rate and Contractility	1926
The Electrocardiogram	1927
Obtaining an Electrocardiogram	1927
Components of the Electrocardiogram	1932
Analyzing the Electrocardiogram Rhythm Strip	1935
Determining Heart Rate from the Electrocardiogram	1935
Determining Heart Rhythm from the Electrocardiogram	1935
Normal Sinus Rhythm	1937
Types of Arrhythmias	1938
Sinus Node Arrhythmias	1938
Atrial Arrhythmias	1942
Junctional Arrhythmias	1958
Ventricular Arrhythmias	1961
Conduction Abnormalities	1967
• Nursing Process: The Patient with an Arrhythmia	1972
Adjunct Modalities and Management	1975
Cardioversion and Defibrillation	1976
Electrical Cardioversion	1980
Defibrillation	1981
Electrophysiology Studies	1981
Pacemaker Therapy	1983
Pacemaker Design and Types	1984
Pacemaker Generator Functions	1986
Complications of Pacemaker Use	1990
Pacemaker Surveillance	1995
Implantable Cardioverter Defibrillator	1996
Nursing Management	2000
Chapter 23: Management of Patients with Coronary Vascular	2012

Disorders	
Coronary Artery Disease	2014
Coronary Atherosclerosis	2014
Pathophysiology	2014
Clinical Manifestations	2017
Risk Factors	2018
Prevention	2021
Gender	2029
Angina Pectoris	2030
Pathophysiology	2030
Clinical Manifestations	2031
Assessment and Diagnostic Findings	2032
Medical Management	2032
• Nursing Process: The Patient with Angina Pectoris	2038
Acute Coronary Syndrome and Myocardial Infarction	2042
Pathophysiology	2042
Clinical Manifestations	2043
Assessment and Diagnostic Findings	2043
Medical Management	2049
Cardiac Rehabilitation	2052
• Nursing Process: The Patient with Acute Coronary Syndrome	2054
Invasive Coronary Artery Procedures	2062
Percutaneous Coronary Interventions	2062
Percutaneous Transluminal Coronary Angioplasty	2062
Coronary Artery Stent	2065
Complications	2066
Postprocedure Care	2067
Surgical Procedures: Coronary Artery Revascularization	2069
Traditional Coronary Artery Bypass Graft	2071
Alternative Coronary Artery Bypass Graft Techniques	2073
Complications of Coronary Artery Bypass Graft	2074
Nursing Management	2075
Chapter 24: Management of Patients with Structural,	2109

Infectious, and Inflammatory Cardiac Disorders	
Valvular Disorders	2112
Mitral Valve Prolapse	2114
Pathophysiology	2115
Clinical Manifestations	2115
Assessment and Diagnostic Findings	2115
Medical Management	2115
Nursing Management	2116
Mitral Regurgitation	2116
Pathophysiology	2117
Clinical Manifestations	2117
Assessment and Diagnostic Findings	2118
Medical Management	2118
Mitral Stenosis	2118
Pathophysiology	2118
Clinical Manifestations	2119
Assessment and Diagnostic Findings	2119
Prevention	2119
Medical Management	2120
Aortic Regurgitation	2120
Pathophysiology	2120
Clinical Manifestations	2120
Assessment and Diagnostic Findings	2121
Prevention	2121
Medical Management	2121
Aortic Stenosis	2122
Pathophysiology	2122
Clinical Manifestations	2122
Assessment and Diagnostic Findings	2123
Prevention	2123
Medical Management	2123
Nursing Management: Valvular Heart Disorders	2124
Surgical Management: Valve Repair and Replacement Procedures	2125

Valvuloplasty	2125
Commissurotomy	2125
Annuloplasty	2128
Leaflet Repair	2128
Valve Replacement	2129
Mechanical Valves	2133
Tissue Valves	2133
Nursing Management: Valvuloplasty and Valve Replacement	2134
Cardiomyopathy	2136
Pathophysiology	2136
Clinical Manifestations	2141
Assessment and Diagnostic Findings	2142
Medical Management	2142
Surgical Management	2143
• Nursing Process: The Patient with Cardiomyopathy	2153
Infectious Diseases of the Heart	2160
Rheumatic Endocarditis	2160
Infective Endocarditis	2161
Pathophysiology	2162
Clinical Manifestations	2163
Assessment and Diagnostic Findings	2163
Prevention	2164
Medical Management	2165
Surgical Management	2165
Nursing Management	2165
Myocarditis	2166
Pathophysiology	2166
Clinical Manifestations	2167
Assessment and Diagnostic Findings	2167
Medical Management	2168
Nursing Management	2168
Pericarditis	2168
Pathophysiology	2169

Clinical Manifestations	2169
Assessment and Diagnostic Findings	2170
Medical Management	2171
Nursing Management	2171
• Nursing Process: The Patient with Pericarditis	2173
Chapter 25: Management of Patients with Complications from Heart Disease	2182
Heart Failure	2184
Pathophysiology	2186
Clinical Manifestations	2189
Assessment and Diagnostic Findings	2194
Medical Management	2199
Gerontologic Considerations	2211
• Nursing Process: The Patient with Heart Failure	2213
Complications from Heart Disease	2230
Cardiogenic Shock	2230
Thromboembolism	2231
Pericardial Effusion and Cardiac Tamponade	2231
Clinical Manifestations	2232
Assessment and Diagnostic Findings	2232
Medical Management	2232
Cardiac Arrest	2234
Clinical Manifestations	2234
Emergency Assessment and Management: Cardiopulmonary Resuscitation	2235
Chapter 26: Assessment and Management of Patients with Vascular Disorders and Problems of Peripheral Circulation	2247
Anatomic and Physiologic Overview	2250
Anatomy of the Vascular System	2252
Function of the Vascular System	2254
Pathophysiology of the Vascular System	2258
Gerontologic Considerations	2259
Assessment of the Vascular System	2260
Health History	2260
Physical Assessment	2261

Diagnostic Evaluation	2262
Doppler Ultrasound Flow Studies	2262
Exercise Testing	2268
Duplex Ultrasonography	2268
Computed Tomography Scanning	2269
Angiography	2270
Magnetic Resonance Angiography	2271
Contrast Phlebography (Venography)	2271
Lymphoscintigraphy	2271
Arterial Disorders	2272
Arteriosclerosis and Atherosclerosis	2272
Pathophysiology	2272
Risk Factors	2274
Prevention	2277
Clinical Manifestations	2278
Medical Management	2278
Nursing Management	2279
Peripheral Artery Disease	2290
Clinical Manifestations	2293
Assessment and Diagnostic Findings	2294
Medical Management	2294
Nursing Management	2297
Nursing Care of the Postoperative Patient	2298
Upper Extremity Arterial Disease	2299
Clinical Manifestations	2299
Assessment and Diagnostic Findings	2299
Medical Management	2300
Nursing Management	2300
Aortoiliac Disease	2300
Medical Management	2301
Nursing Management	2301
Aneurysms	2302
Thoracic Aortic Aneurysm	2303
Clinical Manifestations	2303

Assessment and Diagnostic Findings	2304
Medical Management	2304
Abdominal Aortic Aneurysm	2305
Pathophysiology	2305
Clinical Manifestations	2305
Assessment and Diagnostic Findings	2306
Gerontologic Considerations	2306
Medical Management	2307
Nursing Management	2307
Other Aneurysms	2309
Aortic Dissection	2310
Pathophysiology	2310
Clinical Manifestations	2310
Assessment and Diagnostic Findings	2310
Medical Management	2311
Nursing Management	2311
Arterial Embolism and Arterial Thrombosis	2311
Pathophysiology	2311
Clinical Manifestations	2311
Assessment and Diagnostic Findings	2312
Medical Management	2312
Nursing Management	2315
Raynaud's Phenomenon and Other Acrosyndromes	2315
Clinical Manifestations	2316
Medical Management	2317
Nursing Management	2317
Venous Disorders	2317
Venous Thromboembolism	2318
COVID-19 Considerations	2318
Pathophysiology	2318
Deep Vein Thrombosis	2320
Pathophysiology	2321
Clinical Manifestations	2321
Assessment and Diagnostic Findings	2324



Prevention	2324
Medical Management	2324
Nursing Management	2326
Pulmonary Embolism	2335
Pathophysiology	2335
Clinical Manifestations	2336
Assessment and Diagnostic Findings	2336
Medical Management	2337
Nursing Management	2340
Chronic Venous Insufficiency/Postthrombotic Syndrome	2344
Clinical Manifestations	2344
Complications	2345
Management	2345
Leg Ulcers	2349
Pathophysiology	2349
Clinical Manifestations	2349
Assessment and Diagnostic Findings	2351
Medical Management	2351
• Nursing Process: The Patient with Leg Ulcers	2357
Varicose Veins	2360
Pathophysiology	2360
Clinical Manifestations	2361
Assessment and Diagnostic Findings	2361
Prevention and Medical Management	2361
Nursing Management	2363
Lymphatic Disorders	2365
Lymphangitis and Lymphadenitis	2365
Lymphedema	2366
Medical Management	2366
Nursing Management	2368
Cellulitis	2368
Pathophysiology	2368
Clinical Manifestations	2368
Medical Management	2369

Nursing Management	2369
Chapter 27: Assessment and Management of Patients with Hypertension	2378
Hypertension	2380
Pathophysiology	2383
Clinical Manifestations	2386
Assessment and Diagnostic Findings	2387
Medical Management	2390
• Nursing Process: The Patient with Hypertension	2409
Hypertensive Crises	2416
Hypertensive Emergency	2417
Hypertensive Urgency	2417
UNIT 6: Hematologic Function	2423
Chapter 28: Assessment of Hematologic Function and Treatment Modalities	2426
Anatomic and Physiologic Overview	2429
Bone Marrow	2429
Blood	2430
Reticuloendothelial System (RES)	2441
Hemostasis	2441
Gerontologic Considerations	2445
Assessment	2446
Health History	2446
Physical Assessment	2448
Diagnostic Evaluation	2448
Hematologic Studies	2448
Bone Marrow Aspiration and Biopsy	2454
Therapeutic Approaches to Hematologic Disorders	2457
Splenectomy	2457
Therapeutic Apheresis	2458
Hematopoietic Stem Cell Transplantation	2458
Therapeutic Phlebotomy	2459
Blood Component Therapy	2459
Procuring Blood and Blood Products	2464

Blood Donation	2464
Directed Donation	2465
Standard Donation	2465
Autologous Donation	2466
Intraoperative Blood Salvage	2466
Hemodilution	2467
Complications of Blood Donation	2467
Blood Processing	2467
Transfusion	2469
Pretransfusion Assessment	2469
Patient Education	2472
Transfusion Procedures	2473
Complications	2473
Nursing Management of Transfusion Reactions	2485
Pharmacologic Alternatives to Blood Transfusions	2487
Chapter 29: Management of Patients with Nonmalignant Hematologic Disorders	2494
Anemia	2497
Pathophysiology	2497
Clinical Manifestations	2500
Assessment and Diagnostic Findings	2501
Medical Management	2502
Gerontologic Considerations	2502
• Nursing Process: The Patient with Anemia	2503
Hypoproliferative Anemias	2509
Iron Deficiency Anemia	2509
Clinical Manifestations	2510
Assessment and Diagnostic Findings	2510
Medical Management	2511
Nursing Management	2512
Anemias in Renal Disease	2514
Anemia of Inflammation	2514
Aplastic Anemia	2515
Pathophysiology	2515

Clinical Manifestations	2515
Assessment and Diagnostic Findings	2515
Medical Management	2516
Nursing Management	2517
Megaloblastic Anemias	2517
Pathophysiology	2517
Clinical Manifestations	2519
Assessment and Diagnostic Findings	2519
Medical Management	2520
Nursing Management	2520
Hemolytic Anemias	2521
Sickle Cell Disease	2522
Clinical Manifestations	2523
Assessment and Diagnostic Findings	2527
Medical Management	2527
• Nursing Process: The Patient with Sickle Cell Crisis	2532
Thalassemias	2538
Glucose-6-Phosphate Dehydrogenase Deficiency	2539
Clinical Manifestations	2540
Assessment and Diagnostic Findings	2540
Medical Management	2540
Nursing Management	2541
Immune Hemolytic Anemias	2541
Clinical Manifestations	2542
Assessment and Diagnostic Findings	2542
Medical Management	2542
Nursing Management	2543
Hereditary Hemochromatosis	2544
Clinical Manifestations	2544
Assessment and Diagnostic Findings	2544
Medical Management	2545
Nursing Management	2545
Polycythemia	2545
Secondary Polycythemia	2546

Management	2546
Neutropenia	2546
Clinical Manifestations	2547
Medical Management	2550
Nursing Management	2551
Lymphopenia	2551
Bleeding Disorders	2552
Clinical Manifestations	2554
Medical Management	2554
Nursing Management	2555
Thrombocytopenia	2559
Clinical Manifestations	2559
Assessment and Diagnostic Findings	2559
Medical Management	2560
Nursing Management	2560
Immune Thrombocytopenic Purpura	2560
Pathophysiology	2560
Clinical Manifestations	2561
Assessment and Diagnostic Findings	2561
Medical Management	2561
Nursing Management	2563
Platelet Defects	2564
Clinical Manifestations	2567
Medical Management	2568
Nursing Management	2568
Inherited Bleeding Disorders	2568
Hemophilia	2568
Clinical Manifestations	2569
Medical Management	2570
Nursing Management	2571
Gerontologic Considerations	2573
von Willebrand Disease	2573
Clinical Manifestations	2574
Assessment and Diagnostic Findings	2574

Management	2575
Acquired Bleeding Disorders	2576
Liver Disease	2576
Vitamin K Deficiency	2577
Heparin-Induced Thrombocytopenia	2577
Disseminated Intravascular Coagulation	2578
Pathophysiology	2578
Clinical Manifestations	2579
Assessment and Diagnostic Findings	2582
Medical Management	2583
Nursing Management	2584
Secondary Thrombocytosis	2584
Thrombotic Disorders	2584
Hyperhomocysteinemia	2591
Antithrombin Deficiency	2592
Protein C Deficiency	2592
Protein S Deficiency	2593
Activated Protein C Resistance and Factor V Leiden Mutation	2593
Antiphospholipid Antibody Syndrome	2594
Malignancy	2594
Medical Management	2595
Nursing Management	2595
Chapter 30: Management of Patients with Hematologic Neoplasms	2605
Clonal Stem Cell Disorders	2608
Leukemia	2608
Acute Myeloid Leukemia	2609
Clinical Manifestations	2612
Assessment and Diagnostic Findings	2613
Medical Management	2614
Complications	2616
Nursing Management	2617
Chronic Myeloid Leukemia	2617

Clinical Manifestations	2618
Medical Management	2618
Nursing Management	2619
Acute Lymphocytic Leukemia	2620
Clinical Manifestations	2621
Medical Management	2622
Nursing Management	2624
Chronic Lymphocytic Leukemia	2624
Veterans Considerations	2624
Pathophysiology	2625
Clinical Manifestations	2626
Medical Management	2628
Nursing Management	2629
• Nursing Process: The Patient with Acute Leukemia	2630
MYELODYSPLASTIC SYNDROMES (MDSs)	2638
Clinical Manifestations	2638
Assessment and Diagnostic Findings	2639
Medical Management	2639
Nursing Management	2642
Myeloproliferative Neoplasms	2643
Polycythemia Vera	2643
Clinical Manifestations	2643
Assessment and Diagnostic Findings	2644
Complications	2644
Medical Management	2645
Nursing Management	2647
Essential Thrombocythemia	2648
Clinical Manifestations	2649
Assessment and Diagnostic Findings	2650
Complications	2650
Medical Management	2650
Nursing Management	2651
Primary Myelofibrosis	2651
Medical Management	2652

Nursing Management	2655
Lymphoma	2656
Hodgkin Lymphoma	2656
Pathophysiology	2656
Clinical Manifestations	2658
Assessment and Diagnostic Findings	2659
Medical Management	2660
Nursing Management	2662
Non-Hodgkin Lymphomas	2662
Clinical Manifestations	2665
Assessment and Diagnostic Findings	2666
Medical Management	2666
Nursing Management	2668
MULTIPLE MYELOMA	2669
Pathophysiology	2669
Clinical Manifestations	2671
Assessment and Diagnostic Findings	2672
Medical Management	2675
Complications	2676
Gerontologic Considerations	2682
Nursing Management	2683
UNIT 7: Immunologic Function	2692
Chapter 31: Assessment of Immune Function	2696
Anatomic and Physiologic Overview	2699
Anatomy of the Immune System	2699
Function of the Immune System	2700
Advances in Immunology	2722
Genetic Engineering	2722
Stem Cells	2723
Cancer and Immunotherapy	2723
Assessment of the Immune System	2723
Health History	2724
Physical Assessment	2737
Diagnostic Evaluation	2738



Nursing Management	2738
Chapter 32: Management of Patients with Immune Deficiency Disorders	2745
PRIMARY IMMUNE DEFICIENCIES DISEASES	2748
Pathophysiology	2748
Clinical Manifestations	2749
Assessment and Diagnostic Findings	2749
Prevention	2749
Medical Management	2749
Nursing Management	2753
Acquired Immune Deficiency	2754
HIV Infection and AIDS	2754
Epidemiology	2756
HIV Transmission	2758
Gerontologic Considerations	2759
Prevention of HIV Infection	2760
Reducing the Risk of Transmission to Health Care Providers	2765
Pathophysiology	2770
Stages of HIV Infection	2771
Assessment and Diagnostic Findings in HIV Infection	2774
Treatment of HIV Infection	2777
Clinical Manifestations	2792
Medical Management	2801
Complementary, Alternative, and Integrative Health Therapies	2804
Supportive Care	2805
• Nursing Process: The Patient with HIV Infection	2806
Emotional and Ethical Concerns	2830
Chapter 33: Assessment and Management of Patients with Allergic Disorders	2839
Physiologic Overview	2841
Function of Immunoglobulins	2842
Function of Antigens	2843
Function of Chemical Mediators	2843

Hypersensitivity	2846
Assessment	2850
Diagnostic Evaluation	2852
Complete Blood Count with Differential	2852
Eosinophil Count	2852
Total Serum Immunoglobulin E Levels	2852
Skin Tests	2853
Provocative Testing	2856
Serum-Specific IgE Test	2856
Allergic Disorders	2856
Anaphylaxis	2857
Pathophysiology	2857
Clinical Manifestations	2858
Prevention	2859
Medical Management	2860
Nursing Management	2861
Allergic Rhinitis	2864
Pathophysiology	2864
Clinical Manifestations	2865
Assessment and Diagnostic Findings	2865
Medical Management	2865
• Nursing Process: The Patient with Allergic Rhinitis	2879
Contact Dermatitis	2885
Clinical Manifestations	2885
Assessment and Diagnostic Findings	2885
Atopic Dermatitis	2886
Medical Management	2887
Nursing Management	2887
Drug Hypersensitivity	2888
Pseudoallergic Drug Reactions	2891
Urticaria and Angioedema	2891
Hereditary Angioedema	2893
Clinical Manifestations	2894
Medical Management	2894

Cold Urticaria	2894
Clinical Manifestations	2895
Medical Management	2895
Nursing Management	2895
Food Allergy	2896
Clinical Manifestations	2896
Assessment and Diagnostic Findings	2896
Medical Management	2897
Nursing Management	2898
Latex Allergy	2899
Clinical Manifestations	2900
Assessment and Diagnostic Findings	2903
Medical Management	2903
Nursing Management	2908
Chapter 34: Assessment and Management of Patients with Inflammatory Rheumatic Disorders	2916
Rheumatic Diseases	2917
Pathophysiology	2918
Clinical Manifestations	2920
Assessment and Diagnostic Findings	2921
Medical Management	2921
Nursing Management	2939
Gerontologic Considerations	2939
Diffuse Connective Tissue Diseases	2950
Rheumatoid Arthritis	2950
Pathophysiology	2951
Clinical Manifestations	2951
Assessment and Diagnostic Findings	2952
Medical Management	2953
Nursing Management	2956
Systemic Lupus Erythematosus	2960
Pathophysiology	2961
Clinical Manifestations	2961
Assessment and Diagnostic Findings	2964

Medical Management	2965
Nursing Management	2966
Primary Sjögren's Syndrome	2968
Pathophysiology	2968
Clinical Manifestations	2968
Assessment and Diagnostic Findings	2968
Medical Management	2969
Nursing Management	2969
Scleroderma	2970
Pathophysiology	2970
Clinical Manifestations	2970
Assessment and Diagnostic Findings	2971
Medical Management	2971
Nursing Management	2971
Polymyositis	2972
Pathophysiology	2972
Clinical Manifestations	2972
Assessment and Diagnostic Findings	2972
Medical Management	2973
Nursing Management	2973
Polymyalgia Rheumatica and Giant Cell Arteritis	2973
Pathophysiology	2973
Clinical Manifestations	2974
Assessment and Diagnostic Findings	2974
Medical Management	2974
Nursing Management	2975
Spondyloarthropathies	2975
Ankylosing Spondylitis	2976
Reactive Arthritis (Reiter's Syndrome)	2976
Psoriatic Arthritis	2977
Medical Management	2977
Nursing Management	2978
Metabolic and Endocrine Diseases Associated with Rheumatic Disorders	2978

Gout	2978
Pathophysiology	2979
Clinical Manifestations	2980
Medical Management	2980
Nursing Management	2981
Fibromyalgia	2982
Pathophysiology	2982
Assessment and Diagnostic Findings	2982
Medical Management	2983
Nursing Management	2983
Miscellaneous Disorders	2983
<b>UNIT 8: Musculoskeletal Function</b>	<b>2989</b>
Chapter 35: Assessment of Musculoskeletal Function	2992
Anatomic and Physiologic Overview	2994
Structure and Function of the Skeletal System	2995
Structure and Function of the Articular System	3001
Structure and Function of the Skeletal Muscle System	3002
Gerontologic Considerations	3005
Assessment	3006
Health History	3010
Physical Assessment	3014
Diagnostic Evaluation	3022
X-Ray Studies	3022
Computed Tomography	3025
Magnetic Resonance Imaging	3026
Arthrography	3026
Bone Densitometry	3027
Bone Scan	3028
Arthroscopy	3028
Arthrocentesis	3029
Electromyography	3030
Biopsy	3030
Laboratory Studies	3031
Chapter 36: Management of Patients with Musculoskeletal	3034

Disorders	
Low Back Pain	3036
Gerontologic Considerations	3036
Pathophysiology	3036
Clinical Manifestations	3037
Assessment and Diagnostic Findings	3037
Medical Management	3038
Nursing Management	3039
Common Upper Extremity Disorders	3046
Bursitis and Tendonitis	3046
Loose Bodies	3047
Impingement Syndrome	3047
Carpal Tunnel Syndrome	3048
Ganglion	3050
Dupuytren Disease	3050
Nursing Management of the Patient Undergoing Surgery of the Hand or Wrist	3051
Common Foot Problems	3052
Callus	3055
Corn	3055
Hammer Toe	3055
Onychocryptosis	3056
Pes Cavus	3058
Hallux Valgus	3058
Morton Neuroma	3058
Pes Planus	3059
Plantar Fasciitis	3059
Nursing Management of the Patient Undergoing Foot Surgery	3059
Osteoarthritis (Degenerative Joint Disease)	3061
Pathophysiology	3061
Clinical Manifestations	3062
Assessment and Diagnostic Findings	3064
Medical Management	3064

Nursing Management	3065
The Patient Undergoing Arthroplasty	3066
Preoperative and Intraoperative Nursing Management	3069
Total Hip Arthroplasty	3071
Nursing Management	3072
Total Knee Arthroplasty	3096
Nursing Management	3096
Metabolic Bone Disorders	3097
Osteoporosis	3097
Prevention	3098
COVID-19 Considerations	3099
Gerontologic Considerations	3100
Pathophysiology	3101
Risk Factors	3103
Assessment and Diagnostic Findings	3106
Medical Management	3107
• Nursing Process: The Patient with a Spontaneous Vertebral Fracture Related to Osteoporosis	3114
Osteomalacia	3116
Pathophysiology	3116
Gerontologic Considerations	3117
Assessment and Diagnostic Findings	3117
Medical Management	3118
Paget Disease of the Bone	3118
Pathophysiology	3118
Clinical Manifestations	3119
Assessment and Diagnostic Findings	3119
Medical Management	3119
Gerontologic Considerations	3120
Musculoskeletal Infections	3121
Osteomyelitis	3121
Pathophysiology	3121
Clinical Manifestations	3122
Assessment and Diagnostic Findings	3122

Prevention	3123
Medical Management	3123
• Nursing Process: The Patient with Osteomyelitis	3125
Septic (Infectious) Arthritis	3129
Clinical Manifestations	3129
Assessment and Diagnostic Findings	3130
Medical Management	3130
Nursing Management	3130
Bone Tumors	3131
Benign Bone Tumors	3131
Malignant Bone Tumors	3132
Pathophysiology	3132
Clinical Manifestations	3133
Assessment and Diagnostic Findings	3133
Medical Management	3134
Nursing Management	3135
Chapter 37: Management of Patients with Musculoskeletal Trauma	3149
Contusions, Strains, and Sprains	3151
Management	3153
Joint Dislocations	3153
Medical Management	3154
Nursing Management	3154
Injuries to the Tendons, Ligaments, and Menisci	3154
Rotator Cuff Tears	3154
Lateral and Medial Epicondylitis	3155
Lateral and Medial Collateral Ligament Injury	3159
Medical Management	3159
Nursing Management	3160
Cruciate Ligament Injury	3160
Meniscal Injuries	3161
Rupture of the Achilles Tendon	3162
Fractures	3163
Types of Fractures	3163



Clinical Manifestations	3165
Emergency Management	3166
Medical Management	3166
Nursing Management	3169
Fracture Healing and Complications	3172
The Patient with a Cast, Splint, or Brace	3185
Casts	3185
Splints and Braces	3188
Nursing Management	3189
Nursing Management of the Patient with an Immobilized Upper Extremity	3196
Nursing Management of the Patient with an Immobilized Lower Extremity	3197
Nursing Management of the Patient with a Body or Spica Cast	3198
The Patient with an External Fixator	3199
Management	3202
The Patient in Traction	3205
Principles of Effective Traction	3206
Types of Traction	3207
Skin Traction	3208
Skeletal Traction	3210
Nursing Management of the Patient in Traction	3215
Fractures of Specific Sites	3217
Clavicle	3217
Humeral Neck	3221
Humeral Shaft	3222
Elbow	3223
Proximal Radius	3224
Radial and Ulnar Shafts	3224
Wrist	3225
Hand	3226
Pelvis	3227
Acetabulum	3231
Hip	3231

Clinical Manifestations	3232
Gerontologic Considerations	3233
Medical Management	3234
Nursing Management	3235
Femoral Shaft	3238
Assessment and Diagnostic Findings	3255
Management	3255
Tibia and Fibula	3256
Assessment and Diagnostic Findings	3256
Management	3256
Rib	3257
Gerontologic Considerations	3258
Thoracolumbar Spine	3258
Sports-Related Musculoskeletal Injuries	3259
Management	3259
Occupation-Related Musculoskeletal Disorders	3260
Occupation-Related Musculoskeletal Disorders in Nursing Personnel	3260
Amputation	3261
Level of Amputation	3263
Complications	3265
Medical Management	3265
Rehabilitation	3266
• Nursing Process: The Patient Undergoing an Amputation	3269
<b>UNIT 9: Digestive and Gastrointestinal Function</b>	<b>3300</b>
Chapter 38: Assessment of Digestive and Gastrointestinal Function	3303
Anatomic and Physiologic Overview	3305
Function of the Digestive System	3308
Gerontologic Considerations	3314
Assessment of the Gastrointestinal System	3314
Health History	3315
Physical Assessment	3320

Diagnostic Evaluation	3324
Serum Laboratory Studies	3324
Stool Tests	3325
Breath Tests	3326
Abdominal Ultrasonography	3326
Genetic Testing	3327
Imaging Studies	3330
Endoscopic Procedures	3335
Manometry and Electrophysiologic Studies	3343
Gastric Analysis, Gastric Acid Stimulation Test, and pH Monitoring	3344
Laparoscopy (Peritoneoscopy)	3345
Chapter 39: Management of Patients with Oral and Esophageal Disorders	3350
Disorders of the Oral Cavity	3352
Dental Plaque and Caries	3353
Prevention	3360
Dental Health and Disease	3361
Periapical Abscess	3362
Clinical Manifestations	3362
Medical Management	3362
Nursing Management	3363
Disorders of the Jaw	3363
Temporomandibular Disorders	3363
Clinical Manifestations	3363
Assessment and Diagnostic Findings	3364
Medical Management	3364
Jaw Disorders Requiring Surgical Management	3364
Nursing Management	3364
Disorders of the Salivary Glands	3365
Parotitis	3365
Sialadenitis	3365
Salivary Calculus (Sialolithiasis)	3366
Neoplasms	3366

Cancer of the Oral Cavity and Pharynx	3367
Pathophysiology	3367
Clinical Manifestations	3367
Assessment and Diagnostic Findings	3368
Human Papillomavirus Prevention	3368
Medical Management	3368
Nursing Management	3368
Nursing Management of the Patient With Disorders of the Oral Cavity	3369
Promoting Mouth Care	3369
Ensuring Adequate Food and Fluid Intake	3370
Supporting a Positive Self-Image	3370
Minimizing Pain and Discomfort	3371
Preventing Infection	3371
Promoting Home, Community-Based, and Transitional Care	3371
Neck Dissection	3373
• Nursing Process: The Patient Undergoing a Neck Dissection	3375
Delivering Nutrition Enterally	3384
Nursing Management	3384
Gastrostomy and Jejunostomy	3397
• Nursing Process: The Patient with a Gastrostomy or Jejunostomy	3399
Disorders of the Esophagus	3403
Achalasia	3404
Clinical Manifestations	3404
Assessment and Diagnostic Findings	3404
Management	3404
Esophageal Spasm	3405
Clinical Manifestations	3406
Assessment and Diagnostic Findings	3406
Management	3406
Hiatal Hernia	3406
Clinical Manifestations	3407

Assessment and Diagnostic Findings	3407
Management	3407
Diverticulum	3408
Clinical Manifestations	3408
Assessment and Diagnostic Findings	3409
Management	3409
Perforation	3409
Clinical Manifestations	3409
Assessment and Diagnostic Findings	3409
Management	3410
Foreign Bodies	3410
Chemical Burns	3411
Gastroesophageal Reflux Disease	3411
Clinical Manifestations	3412
Assessment and Diagnostic Findings	3412
Management	3412
Barrett Esophagus	3412
Clinical Manifestations	3412
Assessment and Diagnostic Findings	3413
Management	3413
Benign Tumors of the Esophagus	3413
• Nursing Process: The Patient with a Noncancerous Disorder of the Esophagus	3417
Cancer of the Esophagus	3421
Pathophysiology	3421
Clinical Manifestations	3421
Assessment and Diagnostic Findings	3422
Medical Management	3422
Nursing Management	3423
Chapter 40: Management of Patients with Gastric and Duodenal Disorders	3432
Gastritis	3434
Pathophysiology	3434
Clinical Manifestations	3435

Assessment and Diagnostic Findings	3436
Medical Management	3436
Nursing Management	3437
Peptic Ulcer Disease	3443
Pathophysiology	3445
Clinical Manifestations	3446
Assessment and Diagnostic Findings	3447
Medical Management	3447
• Nursing Process: The Patient with Peptic Ulcer Disease	3456
Gastric Cancer	3460
Pathophysiology	3462
Clinical Manifestations	3462
Assessment and Diagnostic Findings	3462
Medical Management	3463
Gerontologic Considerations	3467
• Nursing Process: The Patient with Gastric Cancer	3468
Tumors of the Small Intestine	3474
Clinical Manifestations	3475
Assessment and Diagnostic Findings	3475
Management	3475
Chapter 41: Management of Patients with Intestinal and Rectal Disorders	3480
Abnormalities of Fecal Elimination	3482
Constipation	3482
Pathophysiology	3483
Clinical Manifestations	3483
Assessment and Diagnostic Findings	3484
Complications	3484
Gerontologic Considerations	3485
Medical Management	3486
Nursing Management	3486
Diarrhea	3487
Pathophysiology	3491
Clinical Manifestations	3492

Assessment and Diagnostic Findings	3492
Complications	3492
Gerontologic Considerations	3492
Medical Management	3493
Nursing Management	3493
Fecal Incontinence	3493
Pathophysiology	3494
Clinical Manifestations	3494
Assessment and Diagnostic Findings	3494
Medical Management	3494
Nursing Management	3495
Irritable Bowel Syndrome (IBS)	3496
Pathophysiology	3497
Clinical Manifestations	3497
Assessment and Diagnostic Findings	3497
Medical Management	3499
Nursing Management	3499
Disorders of Malabsorption	3500
Celiac Disease	3501
Pathophysiology	3501
Clinical Manifestations	3504
Assessment and Diagnostic Findings	3504
Medical Management	3504
Nursing Management	3504
Acute Abdomen	3506
Peritonitis	3506
Pathophysiology	3506
Clinical Manifestations	3507
Assessment and Diagnostic Findings	3507
Medical Management	3507
Nursing Management	3508
Appendicitis	3508
Pathophysiology	3508
Clinical Manifestations	3509

Assessment and Diagnostic Findings	3509
Complications	3510
Gerontologic Considerations	3510
Medical Management	3510
Nursing Management	3511
Diverticular Disease	3511
Pathophysiology	3512
Clinical Manifestations	3513
Assessment and Diagnostic Findings	3513
Gerontologic Considerations	3513
Medical Management	3514
Nursing Management	3515
Intestinal Obstruction	3516
Small Bowel Obstruction	3518
Pathophysiology	3518
Clinical Manifestations	3518
Assessment and Diagnostic Findings	3519
Medical Management	3519
Nursing Management	3520
Large Bowel Obstruction	3520
Pathophysiology	3520
Clinical Manifestations	3521
Assessment and Diagnostic Findings	3521
Medical Management	3521
Nursing Management	3521
Inflammatory Bowel Disease	3522
Crohn's Disease (Regional Enteritis)	3522
Pathophysiology	3522
Clinical Manifestations	3525
Assessment and Diagnostic Findings	3525
Complications	3525
Ulcerative Colitis	3525
Pathophysiology	3526
Clinical Manifestations	3526



Assessment and Diagnostic Findings	3526
Complications	3527
Management of Inflammatory Bowel Disease	3527
Medical Management	3527
• Nursing Process: Management of the Patient with Inflammatory Bowel Disease	3533
Delivering Nutrition Parenterally	3539
Nursing Management	3539
• Nursing Process: The Patient Receiving Parenteral Nutrition	3545
Management of the Patient Requiring an Ostomy	3550
Preoperative Nursing Management	3559
Postoperative Nursing Management	3559
Colorectal Neoplasms	3567
Colorectal Cancer	3567
Pathophysiology	3569
Clinical Manifestations	3570
Assessment and Diagnostic Findings	3571
Complications	3572
Gerontologic Considerations	3572
Prevention	3572
Medical Management	3573
• Nursing Process: The Patient Having Surgery for Colorectal Cancer	3584
Polyps of the Colon and Rectum	3592
Disorders of the Anorectum	3593
Proctitis	3593
Anorectal Abscess	3594
Anal Fistula	3594
Anal Fissure	3595
Hemorrhoids	3596
Pilonidal Sinus or Cyst	3597
Nursing Management of Patients with Anorectal Disorders	3598
UNIT 10: Metabolic and Endocrine Function	3609

Chapter 42: Assessment and Management of Patients with Obesity	3613
Obesity	3614
Epidemiology of Obesity	3615
Obesity Risks	3616
Pathophysiology	3619
Assessment of Obesity	3621
Diagnostic Evaluation	3627
Medical Management	3628
Gerontologic Considerations	3638
Veterans Considerations	3639
COVID-19 Considerations	3641
Nursing Management	3641
The Patient Undergoing Bariatric Surgery	3645
Surgical Procedures	3647
• Nursing Process: The Patient Undergoing Bariatric Surgery	3649
Chapter 43: Assessment and Management of Patients with Hepatic Disorders	3671
Assessment of the Liver	3673
Anatomic and Physiologic Overview	3673
Anatomy of the Liver	3674
Functions of the Liver	3676
Gerontologic Considerations	3679
Assessment	3680
Health History	3680
Physical Assessment	3683
Diagnostic Evaluation	3686
Liver Function Tests	3686
Liver Biopsy	3687
Other Diagnostic Tests	3691
Manifestations of Hepatic Dysfunction	3691
Jaundice	3692
Hemolytic Jaundice	3692

Hepatocellular Jaundice	3693
Obstructive Jaundice	3693
Hereditary Hyperbilirubinemia	3694
Portal Hypertension	3694
Ascites	3694
Pathophysiology	3695
Clinical Manifestations	3696
Assessment and Diagnostic Findings	3697
Medical Management	3697
Nursing Management	3701
Esophageal Varices	3702
Pathophysiology	3703
Clinical Manifestations	3706
Assessment and Diagnostic Findings	3706
Medical Management	3707
Surgical Management	3713
Nursing Management	3716
Hepatic Encephalopathy and Coma	3718
Pathophysiology	3718
Clinical Manifestations	3719
Assessment and Diagnostic Findings	3720
Medical Management	3721
Nursing Management	3723
Other Manifestations of Hepatic Dysfunction	3726
Edema and Bleeding	3726
Vitamin Deficiency	3727
Metabolic Abnormalities	3727
Pruritus and Other Skin Changes	3728
Viral Hepatitis	3728
Hepatitis A Virus	3730
Clinical Manifestations	3730
Assessment and Diagnostic Findings	3731
Prevention	3731
Medical Management	3732

Nursing Management	3734
Hepatitis B Virus	3735
Gerontologic Considerations	3736
Clinical Manifestations	3736
Assessment and Diagnostic Findings	3736
Prevention	3737
Medical Management	3739
Nursing Management	3740
Hepatitis C Virus	3741
Hepatitis D Virus	3744
Hepatitis E Virus	3744
Hepatitis G Virus and GB Virus-C	3744
Nonviral Hepatitis	3745
Toxic Hepatitis	3745
Drug-Induced Hepatitis	3746
Acute Liver Failure	3746
Hepatic Cirrhosis	3748
Pathophysiology	3749
Clinical Manifestations	3749
Assessment and Diagnostic Findings	3753
Medical Management	3754
Nursing Management	3756
Cancer of the Liver	3781
Primary Liver Tumors	3782
Liver Metastases	3782
Clinical Manifestations	3783
Assessment and Diagnostic Findings	3783
Medical Management	3784
Surgical Management	3785
Nursing Management	3787
Liver Transplantation	3789
Surgical Procedure	3791
Complications	3793
Nursing Management	3795

Liver Abscesses	3800
Pathophysiology	3801
Clinical Manifestations	3801
Assessment and Diagnostic Findings	3801
Medical Management	3801
Nursing Management	3802
Chapter 44: Management of Patients with Biliary Disorders	3808
Anatomic and Physiologic Overview	3810
The Gallbladder	3810
The Pancreas	3811
The Exocrine Pancreas	3811
The Endocrine Pancreas	3812
Endocrine Control of Carbohydrate Metabolism	3813
Gerontologic Considerations	3813
Disorders of the Gallbladder	3813
Cholecystitis	3814
Cholelithiasis	3815
Pathophysiology	3815
Clinical Manifestations	3817
Assessment and Diagnostic Findings	3818
Medical Management	3823
• Nursing Process: The Patient Undergoing Surgery for Gallbladder Disease	3832
Disorders of the Pancreas	3838
Acute Pancreatitis	3839
Gerontologic Considerations	3839
Pathophysiology	3840
Clinical Manifestations	3841
Assessment and Diagnostic Findings	3841
Medical Management	3843
Nursing Management	3846
Chronic Pancreatitis	3850
Clinical Manifestations	3859
Assessment and Diagnostic Findings	3859

Medical Management	3860
Pancreatic Cysts	3862
Cancer of the Pancreas	3863
Clinical Manifestations	3864
Assessment and Diagnostic Findings	3864
Medical Management	3865
Nursing Management	3866
Tumors of the Head of the Pancreas	3867
Clinical Manifestations	3868
Assessment and Diagnostic Findings	3869
Medical Management	3869
Nursing Management	3871
Pancreatic Islet Tumors	3873
Surgical Management	3873
Nursing Management	3873
Hyperinsulinism	3874
Ulcerogenic Tumors	3874
Chapter 45: Assessment and Management of Patients with Endocrine Disorders	3880
Assessment of the Endocrine System	3884
Anatomic and Physiologic Overview	3884
Glands of the Endocrine System	3884
Function and Regulation of Hormones	3884
Classification and Action of Hormones	3885
Assessment	3887
Health History	3887
Physical Assessment	3887
Diagnostic Evaluation	3887
Blood Tests	3888
Urine Tests	3888
Additional Diagnostic Studies	3888
The Pituitary Gland	3891
Anatomic and Physiologic Overview	3891
Anterior Pituitary	3892

Posterior Pituitary	3892
Pathophysiology	3893
Anterior Pituitary	3893
Posterior Pituitary	3893
Pituitary Tumors	3894
Clinical Manifestations	3894
Assessment and Diagnostic Findings	3895
Medical Management	3895
Diabetes Insipidus	3896
Clinical Manifestations	3896
Assessment and Diagnostic Findings	3896
Medical Management	3897
Nursing Management	3897
Syndrome of Inappropriate Antidiuretic Hormone Secretion	3898
Medical Management	3898
Nursing Management	3898
The Thyroid Gland	3898
Anatomic and Physiologic Overview	3899
Thyroid Hormone	3899
Calcitonin	3900
Pathophysiology	3901
Assessment	3902
Physical Examination	3902
Diagnostic Evaluation	3903
Thyroid Tests	3903
Nursing Implications	3905
Hypothyroidism	3906
Clinical Manifestations	3907
Medical Management	3910
Nursing Management	3912
Gerontologic Considerations	3921
Hyperthyroidism	3922
Clinical Manifestations	3922

Assessment and Diagnostic Findings	3925
Medical Management	3925
Gerontologic Considerations	3932
• Nursing Process: The Patient with Hyperthyroidism	3934
Thyroid Tumors	3940
Endemic (Iodine-Deficient) Goiter	3940
Nodular Goiter	3941
Thyroid Cancer	3941
Assessment and Diagnostic Findings	3943
Medical Management	3943
Nursing Management	3944
The Parathyroid Glands	3947
Anatomic and Physiologic Overview	3947
Pathophysiology	3948
Hyperparathyroidism	3948
Clinical Manifestations	3949
Assessment and Diagnostic Findings	3949
Medical Management	3950
Nursing Management	3951
Complications: Hypercalcemic Crisis	3952
Hypoparathyroidism	3953
Clinical Manifestations	3954
Assessment and Diagnostic Findings	3954
Medical Management	3954
Nursing Management	3955
The Adrenal Glands	3956
Anatomic and Physiologic Overview	3956
Adrenal Medulla	3957
Adrenal Cortex	3957
Pheochromocytoma	3958
Clinical Manifestations	3959
Assessment and Diagnostic Findings	3959
Medical Management	3961
Nursing Management	3963



Adrenocortical Insufficiency (Addison's Disease)	3964
Clinical Manifestations	3964
Assessment and Diagnostic Findings	3965
Medical Management	3965
Nursing Management	3966
Cushing's Syndrome	3968
Clinical Manifestations	3969
Assessment and Diagnostic Findings	3972
Medical Management	3973
• Nursing Process: The Patient with Cushing's Syndrome	3975
Primary Aldosteronism	3980
Clinical Manifestations	3981
Assessment and Diagnostic Findings	3981
Medical Management	3981
Nursing Management	3982
Corticosteroid Therapy	3983
Side Effects	3983
Therapeutic Uses of Corticosteroids	3984
Dosage	3985
Tapering	3985
Nursing Management	3985
Chapter 46: Management of Patients with Diabetes	3994
Diabetes	3995
Epidemiology	3995
Classification	3996
COVID-19 Considerations	3997
Pathophysiology	3998
Prevention	4000
Clinical Manifestations	4001
Assessment and Diagnostic Findings	4001
Gerontologic Considerations	4001
Medical Management	4001
Nursing Management	4021
Acute Complications of Diabetes	4035

Hypoglycemia (Insulin Reactions)	4035
Gerontologic Considerations	4035
Clinical Manifestations	4035
Assessment and Diagnostic Findings	4035
Management	4036
Diabetic Ketoacidosis	4038
Pathophysiology	4038
Prevention	4039
Clinical Manifestations	4041
Assessment and Diagnostic Findings	4041
Management	4041
Hyperglycemic Hyperosmolar Syndrome	4044
Clinical Manifestations	4045
Assessment and Diagnostic Findings	4046
Management	4046
• Nursing Process: The Patient with Diabetic Ketoacidosis or Hyperglycemic Hyperosmolar Syndrome	4047
Long-Term Complications of Diabetes	4050
Macrovascular Complications	4051
Role of Diabetes in Macrovascular Diseases	4052
Management	4052
Microvascular Complications	4053
Diabetic Retinopathy	4053
Clinical Manifestations	4055
Assessment and Diagnostic Findings	4056
Medical Management	4056
Nursing Management	4057
Nephropathy	4059
Clinical Manifestations	4059
Assessment and Diagnostic Findings	4059
Management	4060
Diabetic Neuropathies	4061
Peripheral Neuropathy	4062
Clinical Manifestations	4062

Management	4062
Autonomic Neuropathies	4063
Clinical Manifestations	4063
Management	4066
Foot and Leg Problems	4066
Medical Management	4069
Nursing Management	4069
Special Issues in Diabetes Care	4069
Patients with Diabetes Who Are Undergoing Surgery	4069
Management of Patients with Diabetes Who Are Hospitalized	4070
Self-Care Issues	4074
Hyperglycemia During Hospitalization	4074
Hypoglycemia During Hospitalization	4075
Common Alterations in Diet	4076
Hygiene	4078
Stress	4079
Gerontologic Considerations	4079
Nursing Management	4080
<b>UNIT 11: Kidney and Urinary Tract Function</b>	<b>4085</b>
Chapter 47: Assessment of Kidney and Urinary Function	4088
Anatomic and Physiologic Overview	4090
Anatomy of the Kidney and Urinary Systems	4090
Physiology of the Kidney and Urinary Systems	4095
Gerontologic Considerations	4103
Assessment of the Kidney and Urinary Systems	4106
Health History	4107
Physical Assessment	4112
Diagnostic Evaluation	4119
Urinalysis and Urine Culture	4120
Specific Gravity	4126
Osmolality	4127
Renal Function Tests	4127
Diagnostic Imaging	4128

Urologic Endoscopic Procedures	4134
Biopsy	4135
Chapter 48: Management of Patients with Kidney Disorders	4139
Fluid and Electrolyte Imbalances in Kidney Disorders	4142
Clinical Manifestations	4143
Gerontologic Considerations	4143
Kidney Disorders	4144
Chronic Kidney Disease	4144
Pathophysiology	4147
Stages of Chronic Kidney Disease	4147
Clinical Manifestations	4148
Assessment and Diagnostic Findings	4149
Medical Management	4149
Gerontologic Considerations	4149
Nephrosclerosis	4150
Pathophysiology	4150
Assessment and Diagnostic Findings	4150
Medical Management	4150
Primary Glomerular Diseases	4150
Acute Nephritic Syndrome	4151
Pathophysiology	4151
Clinical Manifestations	4153
Assessment and Diagnostic Findings	4154
Complications	4154
Medical Management	4155
Nursing Management	4155
Chronic Glomerulonephritis	4156
Pathophysiology	4156
Clinical Manifestations	4156
Assessment and Diagnostic Findings	4157
Medical Management	4157
Nursing Management	4158
Nephrotic Syndrome	4159
Pathophysiology	4160

Clinical Manifestations	4160
Assessment and Diagnostic Findings	4161
Complications	4161
Medical Management	4161
Nursing Management	4161
Polycystic Kidney Disease	4162
Pathophysiology	4162
Clinical Manifestations	4162
Assessment and Diagnostic Findings	4162
Medical Management	4163
Renal Cancer	4163
Clinical Manifestations	4164
Assessment and Diagnostic Findings	4164
Medical Management	4165
Nursing Management	4166
Kidney Disease	4167
Acute Kidney Injury	4168
COVID-19 Considerations	4168
Pathophysiology	4168
Classifications of Acute Kidney Injury	4169
Categories of Acute Kidney Injury	4169
Phases of Acute Kidney Injury	4170
Clinical Manifestations	4173
Assessment and Diagnostic Findings	4173
Prevention	4174
Gerontologic Considerations	4177
Medical Management	4177
Nursing Management	4180
End-Stage Kidney Disease or Chronic Kidney Disease	4182
Pathophysiology	4182
Clinical Manifestations	4182
Assessment and Diagnostic Findings	4183
Complications	4186
Medical Management	4187

Nursing Management	4189
Gerontologic Considerations	4202
Renal Replacement Therapy (RRT)	4202
Dialysis	4203
Hemodialysis (HD)	4203
Dialyzers	4205
Vascular Access	4206
Complications	4209
COVID-19 Considerations	4210
Nursing Management	4211
Continuous Renal Replacement Therapy	4221
Continuous Venovenous Hemofiltration	4222
Continuous Venovenous Hemodialysis	4222
Peritoneal Dialysis (PD)	4223
Procedure	4225
Complications	4228
Approaches	4230
Nursing Management	4232
Special Considerations: Nursing Management of the Patient on Dialysis Who Is Hospitalized	4235
Kidney Surgery	4239
Management of Patients Undergoing Kidney Surgery	4240
Preoperative Considerations	4240
Perioperative Concerns	4241
Postoperative Management	4241
Nursing Management	4241
Kidney Transplantation	4251
Preoperative Management	4253
Medical Management	4253
Nursing Management	4255
Postoperative Management	4255
Medical Management	4256
COVID-19 Considerations	4259
Nursing Management	4260

Renal Trauma	4264
Medical Management	4267
Nursing Management	4268
Chapter 49: Management of Patients with Urinary Disorders	4275
Infections of the Urinary Tract	4278
Lower Urinary Tract Infections	4278
Pathophysiology	4279
Clinical Manifestations	4283
Gerontologic Considerations	4283
Assessment and Diagnostic Findings	4285
Medical Management	4286
• Nursing Process: The Patient with a Lower Urinary Tract Infection	4290
Upper Urinary Tract Infections	4294
Acute Pyelonephritis	4294
Clinical Manifestations	4294
Assessment and Diagnostic Findings	4295
Medical Management	4295
Chronic Pyelonephritis	4295
Clinical Manifestations	4295
Assessment and Diagnostic Findings	4296
Complications	4296
Medical Management	4296
Nursing Management	4296
Adult Voiding Dysfunction	4298
Urinary Incontinence	4298
Types of Urinary Incontinence	4300
Gerontologic Considerations	4301
Assessment and Diagnostic Findings	4301
Medical Management	4302
Nursing Management	4306
Urinary Retention	4309
Pathophysiology	4310
Assessment and Diagnostic Findings	4310

Complications	4310
Nursing Management	4311
Neurogenic Bladder	4312
Pathophysiology	4312
Assessment and Diagnostic Findings	4312
Complications	4312
Medical Management	4313
Urinary Catheters	4313
Indwelling Catheters	4314
Suprapubic Catheters	4315
Nursing Management	4318
Urolithiasis and Nephrolithiasis	4322
Pathophysiology	4322
Clinical Manifestations	4325
Assessment and Diagnostic Findings	4325
Medical Management	4326
• Nursing Process: The Patient with Renal Calculi	4332
Genitourinary Trauma	4335
Specific Injuries	4335
Ureteral Trauma	4335
Bladder Trauma	4335
Urethral Trauma	4336
Medical Management	4336
Nursing Management	4336
Urinary Tract Cancers	4337
Cancer of the Bladder	4337
Clinical Manifestations	4337
Assessment and Diagnostic Findings	4337
Medical Management	4338
Urinary Diversions	4341
Ileal Conduit	4341
Complications	4343
Nursing Management	4343
Orthotopic Neobladder	4348



Surgical Management	4349
Complications	4350
Nursing Management	4350
Other Continent Urinary Diversion Procedures	4352
• Nursing Process: The Patient Undergoing Urinary Diversion Surgery	4354
<b>UNIT 12: Reproductive Function</b>	<b>4366</b>
Chapter 50: Assessment and Management of Patients with Female Physiologic Processes	4370
CHALLENGES in Women's Health	4373
Assessment of the Female Reproductive System	4374
Anatomic and Physiologic Overview	4374
Anatomy of the Female Reproductive System	4374
Function of the Female Reproductive System	4378
Assessment	4386
Health History	4386
Physical Assessment	4398
Diagnostic Evaluation	4404
Cytologic Test for Cancer (Pap Smear)	4404
Colposcopy and Cervical Biopsy	4405
Cryotherapy and Laser Therapy	4405
Cone Biopsy and Loop Electrosurgical Excision Procedure	4405
Endometrial (Aspiration) Biopsy	4406
Dilation and Curettage	4406
Endoscopic Examinations	4407
Other Diagnostic Procedures	4409
Management of Female Physiologic Processes	4411
Menstruation	4411
Psychosocial Considerations	4411
Cultural Considerations	4412
Menstrual Disorders	4412
Premenstrual Syndrome	4412
Clinical Manifestations	4413

Medical Management	4415
Nursing Management	4415
Dysmenorrhea	4416
Assessment and Diagnostic Findings	4416
Management	4416
Amenorrhea	4417
Abnormal Uterine Bleeding	4417
Dyspareunia	4418
Contraception	4419
Contraindications	4419
Abstinence	4421
Long-Acting Reversible Contraceptive (LARC) Methods	4421
Sterilization	4422
Hormonal Contraception	4423
Mechanical Barriers	4427
Coitus Interruptus or Withdrawal	4430
Fertility Awareness–Based Methods	4430
Emergency Contraception	4431
Nursing Management	4432
Abortion	4432
Spontaneous Abortion	4432
Habitual Abortion	4433
Medical Management	4433
Nursing Management	4434
Induced Abortion	4434
Medical Management	4436
Nursing Management	4437
Infertility	4438
Diagnostic Findings	4438
Medical Management	4439
Nursing Management	4443
Preconception/Periconception Health Care	4444
Ectopic Pregnancy	4445
Clinical Manifestations	4446

Assessment and Diagnostic Findings	4447
Medical Management	4447
• Nursing Process: The Patient with an Ectopic Pregnancy	4449
Perimenopause	4451
Nursing Management	4451
Menopause	4452
Postmenopausal Bleeding	4452
Clinical Manifestations	4452
Psychological Considerations	4455
Medical Management	4455
Nursing Management	4458
Chapter 51: Management of Patients with Female Reproductive Disorders	4465
Vulvovaginal Infections	4468
Candidiasis	4470
Clinical Manifestations	4470
Medical Management	4473
Bacterial Vaginosis	4473
Clinical Manifestations	4474
Medical Management	4474
Trichomoniasis	4474
Clinical Manifestations	4475
Medical Management	4475
Gerontologic Considerations	4475
• Nursing Process: The Patient with a Vulvovaginal Infection	4477
Human Papillomavirus	4480
Pathophysiology	4480
Medical Management	4481
Prevention	4482
Herpes Virus Type 2 Infection (Herpes Genitalis, Herpes Simplex Virus)	4482
Pathophysiology	4483
Clinical Manifestations	4483
Medical Management	4484

• Nursing Process: The Patient with a Genital Herpes Infection	4485
Endocervicitis and Cervicitis	4488
Chlamydia and Gonorrhea	4488
Medical Management	4489
Nursing Management	4489
Pelvic Inflammatory Disease	4490
Pathophysiology	4491
Clinical Manifestations	4491
Complications	4491
Medical Management	4492
Nursing Management	4493
Human Immune Deficiency Virus Infection and Acquired Immune Deficiency Syndrome	4494
Structural Disorders	4495
Fistulas of the Vagina	4495
Clinical Manifestations	4496
Assessment and Diagnostic Findings	4496
Medical Management	4497
Pelvic Organ Prolapse: Cystocele, Rectocele, Enterocele	4497
Clinical Manifestations	4498
Medical Management	4499
Uterine Prolapse	4500
Medical Management	4503
Nursing Management	4503
Benign Disorders	4505
Vulvitis and Vulvodynia	4505
Medical Management	4506
Vulvar Cysts	4506
Medical Management	4506
Vulvar Dystrophy	4507
Medical Management	4507
Nursing Management	4507
Ovarian Cysts	4508

Medical Management	4509
Benign Tumors of the Uterus: Fibroids (Leiomyomas, Myomas)	4509
Clinical Manifestations	4509
Medical Management	4510
Endometriosis	4511
Pathophysiology	4512
Clinical Manifestations	4512
Assessment and Diagnostic Findings	4513
Medical Management	4513
Nursing Management	4514
Chronic Pelvic Pain	4515
Adenomyosis	4515
Endometrial Hyperplasia	4515
Malignant Conditions	4516
Cancer of the Cervix	4516
Clinical Manifestations	4517
Assessment and Diagnostic Findings	4518
Medical Management	4519
Cancer of the Uterus (Endometrium)	4521
Pathophysiology	4522
Assessment and Diagnostic Findings	4522
Medical Management	4523
Cancer of the Vulva	4523
Clinical Manifestations	4523
Medical Management	4524
Nursing Management	4525
Cancer of the Vagina	4528
Medical Management	4529
Cancer of the Fallopian Tubes	4529
Cancer of the Ovary	4529
Epidemiology	4530
Pathophysiology	4530
Clinical Manifestations	4531

Assessment and Diagnostic Findings	4531
Medical Management	4531
Nursing Management	4533
Hysterectomy	4534
Preoperative Management	4534
Postoperative Management	4535
• Nursing Process: The Patient Undergoing a Hysterectomy	4536
Radiation Therapy	4541
Methods of Radiation Therapy	4541
Nursing Considerations for Radiation Safety	4543
Chapter 52: Assessment and Management of Patients with Breast Disorders	4549
Breast Assessment	4551
Anatomic and Physiologic Overview	4551
Assessment	4551
Health History	4551
Physical Assessment: Female Breast	4552
Physical Assessment: Male Breast	4557
Diagnostic Evaluation	4558
Breast Self-Examination	4558
Mammography	4559
Contrast Mammography	4560
Ultrasonography	4560
Magnetic Resonance Imaging	4563
Procedures for Tissue Analysis	4564
Conditions Affecting the Nipple	4567
Nipple Discharge	4567
Fissure	4567
Breast Infections	4568
Mastitis	4568
Lactational Abscess	4568
Benign Conditions of the Breast	4568
Breast Pain	4568

Nursing Management	4568
Cysts	4569
Fibroadenomas	4570
Benign Proliferative Breast Disease	4570
Atypical Hyperplasia	4570
Lobular Carcinoma In Situ	4570
Other Benign Conditions	4570
Malignant Conditions of the Breast	4571
Types of Breast Cancer	4571
Ductal Carcinoma In Situ	4571
Medical Management	4571
Invasive Cancer	4571
Risk Factors	4573
Protective Factors	4573
Breast Cancer Prevention Strategies in the Patient Who Is at High Risk	4574
Clinical Manifestations	4575
Assessment and Diagnostic Findings	4576
Staging	4576
Prognosis	4576
Surgical Management	4577
Nursing Management	4579
• Nursing Process: The Patient Undergoing Surgery for Breast Cancer	4582
Radiation Therapy	4594
Side Effects	4595
Nursing Management	4595
Systemic Treatments	4595
Chemotherapy	4595
Side Effects	4597
Nursing Management	4597
Hormonal Therapy	4599
Targeted Therapy	4600
Treatment of Recurrent and Metastatic Breast Cancer	4601

Nursing Management	4602
Reconstructive Procedures After Mastectomy	4602
Tissue Expander Followed by Permanent Implant	4603
Tissue Transfer Procedures	4604
Nipple–Areola Reconstruction	4605
Prosthetics	4606
Special Issues in Breast Cancer Management	4606
Implications of Genetic Testing	4606
Pregnancy and Breast Cancer	4607
Quality of Life and Survivorship	4607
Gerontologic Considerations	4608
Breast Health of Women with Disability	4608
Reconstructive Breast Surgery	4609
Reduction Mammoplasty	4609
Augmentation Mammoplasty	4609
Mastopexy	4610
Diseases of the Male Breast	4610
Gynecomastia	4610
Male Breast Cancer	4610
Chapter 53: Assessment and Management of Patients with Male Reproductive Disorders	4616
Assessment of the Male Reproductive System	4619
Anatomic and Physiologic Overview	4619
Gerontologic Considerations	4621
Assessment	4622
Health History	4622
Physical Assessment	4624
Diagnostic Evaluation	4625
Prostate-Specific Antigen Test	4625
Ultrasonography	4626
Prostate Fluid or Tissue Analysis	4626
Tests of Male Sexual Function	4626
Disorders of Male Sexual Function	4627
Erectile Dysfunction	4627



Assessment and Diagnostic Findings	4627
Medical Management	4628
Nursing Management	4637
Disorders of Ejaculation	4638
Infections of the Male Genitourinary Tract	4640
Prostatic Disorders	4641
Prostatitis	4642
Clinical Manifestations	4642
Medical Management	4642
Nursing Management	4643
Benign Prostatic Hyperplasia (Enlarged Prostate)	4643
Pathophysiology	4644
Clinical Manifestations	4644
Assessment and Diagnostic Findings	4645
Medical Management	4645
Cancer of the Prostate	4647
Clinical Manifestations	4648
Assessment and Diagnostic Findings	4648
Medical Management	4649
The Patient Undergoing Prostate Surgery	4664
Surgical Procedures	4664
Complications	4665
• Nursing Process: Patient Undergoing Prostatectomy	4674
Disorders Affecting the Testes and Adjacent Structures	4685
Orchitis	4685
Epididymitis	4685
Pathophysiology	4685
Clinical Manifestations	4686
Assessment and Diagnostic Findings	4686
Medical Management	4686
Nursing Management	4686
Testicular Torsion	4687
Testicular Cancer	4687
Classification of Testicular Tumors	4687

Risk Factors	4688
Clinical Manifestations	4689
Assessment and Diagnostic Findings	4689
Medical Management	4692
Nursing Management	4693
Hydrocele	4694
Varicocele	4695
Vasectomy	4695
Nursing Management	4696
Vasovasostomy (Sterilization Reversal)	4697
Semen Cryopreservation (Sperm Banking)	4697
Disorders Affecting the Penis	4697
Phimosis	4698
Cancer of the Penis	4698
Clinical Manifestations	4699
Assessment and Diagnostic Findings	4699
Prevention	4699
Medical Management	4699
Priapism	4700
Peyronie Disease	4701
Urethral Stricture	4701
Circumcision	4702
Chapter 54: Assessment and Management of Patients Who Are LGBTQ	4708
Sexuality and Gender Identity	4711
Sexuality	4711
Gender Identity	4712
Statistics on LGBTQ Populations	4713
Health Risks	4715
Assessment	4716
Gerontologic Considerations	4719
Assessment and Management of Patients Seeking Gender Reassignment	4720
Medical Management	4721

• Nursing Process: The Patient Undergoing Gender Reassignment Surgery	4736
UNIT 13: Integumentary Function	4750
Chapter 55: Assessment of Integumentary Function	4753
Anatomic and Physiologic Overview	4755
Anatomy of the Skin, Hair, Nails, and Glands of the Skin	4755
Functions of the Skin	4760
Gerontologic Considerations	4763
Assessment	4764
Health History	4765
Physical Assessment	4766
Skin Consequences of Select Systemic Diseases	4793
Diagnostic Evaluation	4795
Skin Biopsy	4795
Patch Testing	4795
Skin Scrapings	4796
Tzanck Smear	4796
Wood Light Examination	4796
Clinical Photographs	4796
Nursing Implications	4796
Chapter 56: Management of Patients with Dermatologic Disorders	4799
Skin Care	4801
Protecting the Skin	4801
Preventing Secondary Infection	4802
Wound Dressing Care	4802
Autolytic Débridement	4806
Categories of Dressings	4806
Medical Management	4811
Nursing Management	4814
Pressure Injury	4815
• Nursing Process: The Patient with Pressure Injury	4817
Pruritus	4837

General Pruritus	4838
Gerontologic Considerations	4839
Pathophysiology	4839
Medical Management	4839
Nursing Management	4840
Perineal and Perianal Pruritus	4840
Management	4841
Secretory Disorders	4841
Hidradenitis Suppurativa	4842
Pathophysiology	4842
Clinical Manifestations	4842
Management	4842
Seborrheic Dermatitis	4843
Clinical Manifestations	4843
Medical Management	4844
Nursing Management	4844
Acne Vulgaris	4845
Pathophysiology	4845
Clinical Manifestations	4845
Assessment and Diagnostic Findings	4846
Medical Management	4846
Nursing Management	4851
Infectious Dermatoses	4852
Bacterial Skin Infections	4853
Impetigo	4853
Clinical Manifestations	4853
Medical Management	4854
Nursing Management	4854
Folliculitis, Furuncles, and Carbuncles	4855
Medical Management	4856
Nursing Management	4857
Viral Skin Infections	4858
Herpes Zoster	4858
Clinical Manifestations	4858

Medical Management	4859
Nursing Management	4861
Herpes Simplex	4861
COVID-19 Considerations	4862
Fungal (Mycotic) Skin Infections	4863
Parasitic Skin Infestations	4863
Pediculosis: Lice Infestation	4863
Clinical Manifestations	4864
Medical Management	4868
Nursing Management	4869
Scabies	4869
Clinical Manifestations	4870
Gerontologic Considerations	4870
Assessment and Diagnostic Findings	4871
Medical Management	4871
Nursing Management	4871
Noninfectious Inflammatory Dermatoses	4872
Irritant Contact Dermatitis	4872
Clinical Manifestations	4872
Management	4873
COVID-19 Considerations	4873
Psoriasis	4875
Pathophysiology	4875
Clinical Manifestations	4876
Complications	4876
Assessment and Diagnostic Findings	4877
Medical Management	4877
Nursing Management	4881
Generalized Exfoliative Dermatitis	4883
Clinical Manifestations	4883
Assessment and Diagnostic Findings	4883
Medical Management	4884
Nursing Management	4884
Blistering Diseases	4885

Pemphigus Vulgaris	4885
Assessment and Diagnostic Findings	4886
Management	4886
Bullous Pemphigoid	4887
Assessment and Diagnostic Findings	4887
Management	4887
Dermatitis Herpetiformis	4888
Assessment and Diagnostic Findings	4888
Management	4888
• Nursing Process: Care of the Patient with a Blistering Disease	4889
Toxic Epidermal Necrolysis and Stevens–Johnson Syndrome	4893
Clinical Manifestations	4893
Complications	4894
Assessment and Diagnostic Findings	4894
Medical Management	4894
• Nursing Process: Care of the Patient with Toxic Epidermal Necrolysis or Stevens–Johnson Syndrome	4896
Skin Tumors	4900
Benign Skin Tumors	4900
Cysts	4900
Seborrheic and Actinic Keratoses	4901
Verrucae: Warts	4901
Angiomas	4902
Pigmented Nevi: Moles	4902
Keloids	4902
Dermatofibroma	4902
Neurofibromatosis: Von Recklinghausen Disease	4903
Malignant Skin Tumors	4903
Basal Cell Carcinoma and Squamous Cell Carcinoma	4903
Clinical Manifestations	4904
Medical Management	4905
Nursing Management	4907
Melanoma	4910

Clinical Manifestations	4910
Assessment and Diagnostic Findings	4911
Medical Management	4912
Nursing Management	4913
Metastatic Skin Tumors	4921
Kaposi Sarcoma	4921
Plastic, Reconstructive, and Cosmetic Procedures	4922
Wound Coverage: Grafts and Flaps	4922
Skin Grafts	4922
Flaps	4923
Cosmetic Procedures	4923
Chemical Face Peeling	4923
Dermabrasion	4924
Facial Reconstructive Surgery	4924
Rhytidectomy	4925
Laser Treatment of Cutaneous Lesions	4925
Nursing Management	4926
Chapter 57: Management of Patients with Burn Injury	4935
Overview of Burn Injury	4936
Incidence	4937
Gerontologic Considerations	4937
Prevention	4939
Outlook for Survival and Recovery	4940
Severity	4941
Pathophysiology	4947
Management of Burn Injury	4959
Emergent/Resuscitative Phase	4959
On-the-Scene Care	4959
Medical Management	4964
Nursing Management	4967
Acute/Intermediate Phase	4969
Medical Management	4969
Nursing Management	4995
Rehabilitation Phase	5003

Psychological Support	5004
Abnormal Wound Healing	5007
• Nursing Process: Care of the Patient during the Rehabilitation Phase	5009
Outpatient Burn Care	5013
UNIT 14: Sensory Function	5023
Chapter 58: Assessment and Management of Patients with Eye and Vision Disorders	5027
Assessment of the Eye	5030
Anatomic and Physiologic Overview	5030
Assessment	5035
Ocular History	5035
Visual Acuity	5038
External Eye Examination	5041
Diagnostic Evaluation	5042
Direct Ophthalmoscopy	5042
Indirect Ophthalmoscopy	5043
Slit-Lamp Examination	5043
Tonometry	5043
Color Vision Testing	5043
Amsler Grid	5044
Ultrasonography	5045
Optical Coherence Tomography	5045
Fundus Photography	5045
Laser Scanning	5045
Angiography	5045
Perimetry Testing	5046
Impaired Vision	5047
Refractive Errors	5047
Vision Impairment and Blindness	5048
Assessment and Diagnostic Testing	5049
Gerontologic Considerations	5049
Medical Management	5050
Nursing Management	5055



Ocular Medication Administration	5059
Common Ocular Medications	5061
Topical Anesthetic Agents	5061
Mydriatic and Cycloplegic Agents	5061
Medications Used to Treat Glaucoma	5062
Anti-Infective Medications	5062
Corticosteroids and Nonsteroidal Anti-Inflammatory Drugs	5063
Antiallergy Medications	5063
Ocular Irrigants and Lubricants	5063
Nursing Management	5064
Glaucoma	5065
Physiology	5068
Pathophysiology	5069
Classification of Glaucoma	5069
Clinical Manifestations	5069
Assessment and Diagnostic Findings	5073
Medical Management	5073
Nursing Management	5078
Cataracts	5080
Pathophysiology	5081
Clinical Manifestations	5081
Assessment and Diagnostic Findings	5081
Medical Management	5082
Nursing Management	5088
Corneal Disorders	5091
Corneal Dystrophies	5091
Keratoconus	5091
Fuchs Endothelial Dystrophy	5092
Corneal Surgeries	5092
Phototherapeutic Keratectomy	5092
Penetrating Keratoplasty	5093
Additional Keratoplasty Surgeries	5094
Keratoprosthesis	5095

Nursing Management	5095
Refractive Surgeries	5096
Laser Vision Correction Photorefractive Keratectomy	5096
Phakic Intraocular Lenses	5097
Conductive Keratoplasty	5097
Retinal Disorders	5098
Retinal Detachment	5098
Clinical Manifestations	5099
Assessment and Diagnostic Findings	5099
Surgical Management	5100
Nursing Management	5101
Retinal Vascular Disorders	5101
Central Retinal Vein Occlusion	5102
Branch Retinal Vein Occlusion	5102
Central Retinal Artery Occlusion	5102
Age-Related Macular Degeneration	5103
Medical Management	5106
Nursing Management	5106
Orbital and Ocular Trauma	5107
Orbital Trauma	5107
Soft Tissue Injury and Hemorrhage	5107
Orbital Fractures	5107
Foreign Bodies	5108
Ocular Trauma	5109
Assessment and Diagnostic Findings	5109
Medical Management	5110
Infectious and Inflammatory Conditions	5113
Dry Eyes	5113
Clinical Manifestations	5113
Assessment and Diagnostic Findings	5113
Management	5113
Conjunctivitis	5116
Clinical Manifestations	5116
Assessment and Diagnostic Findings	5116

Types of Conjunctivitis	5116
Medical Management	5119
Uveitis	5122
Medical Management	5122
Orbital Cellulitis	5123
Medical Management	5123
Orbital and Ocular Tumors	5123
Benign Tumors of the Orbit	5123
Benign Tumors of the Eyelids	5124
Benign Tumors of the Conjunctiva	5124
Malignant Tumors of the Orbit	5125
Malignant Tumors of the Eyelid	5125
Malignant Tumors of the Conjunctiva	5126
Malignant Tumors of the Globe	5126
Surgical Procedures and Enucleation	5127
Orbital Surgeries	5127
Enucleation	5127
Ocular Prostheses	5128
Medical Management	5129
Nursing Management	5129
Ocular Consequences of Systemic Disease	5131
Diabetic Retinopathy	5131
Cytomegalovirus Retinitis	5131
Medical Management	5132
Hypertension-Related Eye Changes	5132
Chapter 59: Assessment and Management of Patients with Hearing and Balance Disorders	5138
Assessment of the Ear	5141
Anatomic and Physiologic Overview	5141
Anatomy of the External Ear	5141
Anatomy of the Middle Ear	5142
Anatomy of the Inner Ear	5143
Function of the Ears	5145
Assessment	5146

Inspection of the External Ear	5146
Otoscope Examination	5146
Evaluation of Gross Auditory Acuity	5148
Cultural Considerations	5151
Diagnostic Evaluation	5152
Audiometry	5152
Tympanogram	5155
Auditory Brain Stem Response Audiometry	5155
Electronystagmography	5156
Platform Posturography	5156
Sinusoidal Harmonic Acceleration	5156
Middle Ear Endoscopy	5156
Hearing Loss	5157
Clinical Manifestations	5159
Prevention	5161
Gerontologic Considerations	5162
Medical Management	5163
Nursing Management	5164
Conditions of the External Ear	5166
Cerumen Impaction	5166
Management	5167
Foreign Bodies	5167
Management	5167
External Otitis (Otitis Externa)	5168
Clinical Manifestations	5168
Medical Management	5168
Nursing Management	5169
Malignant External Otitis	5169
Masses of the External Ear	5170
Conditions of the Middle Ear	5170
Tympanic Membrane Perforation	5170
Medical Management	5171
Acute Otitis Media	5171
Clinical Manifestations	5171

Medical Management	5172
Serous Otitis Media	5173
Clinical Manifestations	5173
Management	5173
Chronic Otitis Media	5174
Clinical Manifestations	5174
Medical Management	5175
• Nursing Process: The Patient Undergoing Mastoid Surgery	5177
Otosclerosis	5181
Clinical Manifestations	5182
Medical Management	5182
Middle Ear Masses	5183
Conditions of the Inner Ear	5184
Motion Sickness	5184
Clinical Manifestations	5184
Management	5184
Ménière's Disease	5185
Clinical Manifestations	5185
Assessment and Diagnostic Findings	5185
Medical Management	5186
Benign Paroxysmal Positional Vertigo	5188
Tinnitus	5195
Labyrinthitis	5195
Clinical Manifestations	5196
Management	5196
Ototoxicity	5197
Acoustic Neuroma	5197
Assessment and Diagnostic Findings	5197
Management	5198
Aural Rehabilitation	5198
Hearing Aids	5199
Implanted Hearing Devices	5204
Hearing Guide Dogs	5207

UNIT 15: Neurologic Function	5212
Chapter 60: Assessment of Neurologic Function	5216
Anatomic and Physiologic Overview	5218
Cells of the Nervous System	5218
Neurotransmitters	5219
The Central Nervous System	5220
The Peripheral Nervous System	5231
Motor and Sensory Pathways of the Nervous System	5242
Assessment of the Nervous System	5247
Health History	5247
Physical Assessment	5250
Gerontologic Considerations	5265
Diagnostic Evaluation	5268
Computed Tomography Scanning	5268
Magnetic Resonance Imaging	5269
Positron Emission Tomography	5271
Single-Photon Emission Computed Tomography	5272
Cerebral Angiography	5273
Myelography	5274
Noninvasive Carotid Flow Studies	5274
Transcranial Doppler	5275
Electroencephalography	5275
Electromyography	5278
Nerve Conduction Studies	5279
Evoked Potential Studies	5279
Lumbar Puncture and Examination of Cerebrospinal Fluid	5280
Promoting Home, Community-Based, and Transitional Care	5281
Chapter 61: Management of Patients with Neurologic Dysfunction	5284
Altered Level of Consciousness	5286
Pathophysiology	5286
Clinical Manifestations	5287

Assessment and Diagnostic Findings	5287
Medical Management	5287
• Nursing Process: The Patient with an Altered Level of Consciousness	5288
Increased Intracranial Pressure	5296
Pathophysiology	5296
Clinical Manifestations	5298
Assessment and Diagnostic Findings	5298
Complications	5299
Medical Management	5299
• Nursing Process: The Patient with Increased Intracranial Pressure	5304
Intracranial Surgery	5311
Supratentorial and Infratentorial Approaches	5313
Preoperative Management	5313
Medical Management	5313
Nursing Management	5313
Postoperative Management	5314
Reducing Cerebral Edema	5314
Relieving Pain and Preventing Seizures	5314
Monitoring Intracranial Pressure	5314
• Nursing Process: The Patient Who Has Undergone Intracranial Surgery	5315
Transsphenoidal Approach	5320
Complications	5320
Preoperative Management	5320
Medical Management	5321
Nursing Management	5321
Postoperative Management	5321
Medical Management	5321
Nursing Management	5321
Other Neurologic Dysfunctions	5321
Delirium	5322
Dementia	5322
Pseudobulbar Affect	5322

Seizure Disorders	5323
Pathophysiology	5326
Clinical Manifestations	5327
Assessment and Diagnostic Findings	5328
Nursing Management	5328
The Epilepsies	5329
Pathophysiology	5329
Epilepsy in Women	5330
Gerontologic Considerations	5331
Prevention	5331
Medical Management	5331
• Nursing Process: The Patient with Epilepsy	5334
Status Epilepticus	5337
Medical Management	5337
Nursing Management	5337
Headache	5337
Pathophysiology	5338
Clinical Manifestations	5339
Assessment and Diagnostic Findings	5340
Prevention	5341
Medical Management	5341
Nursing Management	5342
Chapter 62: Management of Patients with Cerebrovascular Disorders	5346
Ischemic Stroke	5349
COVID-19 Considerations	5350
Pathophysiology	5351
Clinical Manifestations	5352
Assessment and Diagnostic Findings	5359
Prevention	5360
Medical Management	5362
• Nursing Process: The Patient Recovering from an Ischemic Stroke	5378
Hemorrhagic Stroke	5400



Pathophysiology	5401
Clinical Manifestations	5403
Assessment and Diagnostic Findings	5404
Prevention	5404
Complications	5405
Medical Management	5408
• Nursing Process: The Patient with a Hemorrhagic Stroke	5410
Chapter 63: Management of Patients with Neurologic Trauma	5422
Head Injuries	5425
Pathophysiology	5426
Clinical Manifestations	5428
Veterans Considerations	5429
Assessment and Diagnostic Findings	5429
Gerontologic Considerations	5429
Medical Management	5430
Brain Injury	5431
Types of Brain Injury	5432
Medical Management	5436
• Nursing Process: The Patient with a Traumatic Brain Injury	5441
Spinal Cord Injury (SCI)	5464
Pathophysiology	5464
Veterans Considerations	5465
Clinical Manifestations	5465
Assessment and Diagnostic Findings	5468
Emergency Management	5470
Medical Management (Acute Phase)	5472
Management of Acute Complications of Spinal Cord Injury	5475
• Nursing Process: The Patient with Acute Spinal Cord Injury	5477
Medical Management of Long-Term Complications of SCI	5487
• Nursing Process: The Patient with Tetraplegia or Paraplegia	5489

Chapter 64: Management of Patients with Neurologic Infections, Autoimmune Disorders, and Neuropathies	5506
Infectious Neurologic Disorders	5508
Meningitis	5508
Pathophysiology	5508
Clinical Manifestations	5509
Assessment and Diagnostic Findings	5511
Prevention	5511
Medical Management	5511
Nursing Management	5512
Brain Abscess	5514
Pathophysiology	5514
Clinical Manifestations	5514
Assessment and Diagnostic Findings	5514
Medical Management	5515
Nursing Management	5516
Herpes Simplex Encephalitis	5517
Pathophysiology	5517
Clinical Manifestations	5517
Assessment and Diagnostic Findings	5517
Medical Management	5518
Nursing Management	5518
Arthropod-Borne Virus Encephalitis	5519
Pathophysiology	5519
Clinical Manifestations	5519
Assessment and Diagnostic Findings	5520
Medical Management	5520
Nursing Management	5520
Creutzfeldt–Jakob and Variant Creutzfeldt–Jakob Diseases	5521
Pathophysiology	5521
Clinical Manifestations	5522
Assessment and Diagnostic Findings	5522
Medical Management	5522

Nursing Management	5522
Autoimmune Processes	5523
Multiple Sclerosis	5523
Pathophysiology	5525
Clinical Manifestations	5525
Gerontologic Considerations	5527
Assessment and Diagnostic Findings	5527
Medical Management	5528
• Nursing Process: The Patient with MS	5532
Myasthenia Gravis	5540
Pathophysiology	5540
Clinical Manifestations	5541
Assessment and Diagnostic Findings	5541
Medical Management	5542
Complications	5544
Nursing Management	5544
Guillain–Barré Syndrome	5547
Pathophysiology	5547
Clinical Manifestations	5548
Assessment and Diagnostic Findings	5549
Medical Management	5549
• Nursing Process: The Patient with GBS	5550
Cranial Nerve Disorders	5556
Trigeminal Neuralgia	5560
Medical Management	5561
Nursing Management	5562
Bell’s Palsy	5563
Medical Management	5564
Nursing Management	5565
Disorders of the Peripheral Nervous System	5565
Peripheral Neuropathies	5565
Mononeuropathy	5566
Chapter 65: Management of Patients with Oncologic or Degenerative Neurologic Disorders	5571

Oncologic Disorders of the Brain and Spinal Cord	5573
Brain Tumors	5573
Types of Primary Brain Tumors	5574
Gerontologic Considerations	5577
Clinical Manifestations	5578
Assessment and Diagnostic Findings	5581
Medical Management	5583
Nursing Management	5585
Cerebral Metastases	5586
Medical Management	5586
• Nursing Process: The Patient with Nervous System Metastases or Primary Brain Tumor	5588
Spinal Cord Tumors	5594
Assessment and Diagnostic Findings	5594
Medical Management	5595
Nursing Management	5595
Degenerative Disorders	5597
Parkinson's Disease	5598
Pathophysiology	5598
Clinical Manifestations	5600
Assessment and Diagnostic Findings	5602
Medical Management	5602
• Nursing Process: The Patient with Parkinson's Disease	5608
Huntington Disease	5615
Pathophysiology	5616
Clinical Manifestations	5616
Assessment and Diagnostic Findings	5617
Medical Management	5617
Amyotrophic Lateral Sclerosis	5621
Clinical Manifestations	5621
Assessment and Diagnostic Findings	5622
Management	5622
Muscular Dystrophies	5624
Medical Management	5624

Nursing Management	5625
Degenerative Disc Disease	5627
Pathophysiology	5627
Gerontologic Considerations	5628
Clinical Manifestations	5628
Assessment and Diagnostic Findings	5628
Medical Management	5628
Herniation of a Cervical Intervertebral Disc	5629
Clinical Manifestations	5630
Medical Management	5630
• Nursing Process: The Patient Undergoing a Cervical Discectomy	5632
Herniation of a Lumbar Disc	5635
Clinical Manifestations	5637
Assessment and Diagnostic Findings	5637
Medical Management	5637
Nursing Management	5638
Post-Polio Syndrome	5641
Pathophysiology	5641
Assessment and Diagnostic Findings	5641
Management	5642
UNIT 16: Acute Community-Based Challenges	5648
Chapter 66: Management of Patients with Infectious Diseases	5651
The Infectious Process	5654
The Chain of Infection	5654
Colonization, Infection, and Infectious Disease	5662
Infection Control and Prevention	5664
Preventing Infection in Health Care Settings	5664
Preventing Infection in the Community	5680
Home-Based Care of the Patient with an Infectious Disease	5684
Reducing Risk to the Patient	5684
Reducing Risk to Household Members	5687
Nursing Management	5689

Diarrheal Diseases	5693
Transmission	5693
Causes	5694
• Nursing Process: The Patient with Infectious Diarrhea	5710
Sexually Transmitted Infections	5713
Syphilis	5714
Stages of Syphilis	5714
Assessment and Diagnostic Findings	5714
Medical Management	5715
Nursing Management	5715
Chlamydia trachomatis and Neisseria gonorrhoeae Infections	5715
Clinical Manifestations	5716
Complications	5716
Assessment and Diagnostic Findings	5717
Medical Management	5717
Nursing Management	5717
• Nursing Process: The Patient with a Sexually Transmitted Infection	5719
Emerging Infectious Diseases	5721
COVID-19	5722
Pathophysiology	5722
Risk Factors	5723
Clinical Manifestations	5723
Medical Management	5726
Nursing Management	5726
Zika Virus	5727
West Nile Virus	5728
Ebola Virus Disease	5728
Pathophysiology	5729
Clinical Manifestations	5729
Medical Management	5729
Nursing Management	5729
Legionnaires Disease	5730

Pathophysiology	5731
Risk Factors	5731
Clinical Manifestations	5731
Assessment and Diagnostic Findings	5731
Medical Management	5731
Nursing Management	5732
Pertussis	5732
Pathophysiology	5732
Clinical Manifestations	5732
Assessment and Diagnostic Findings	5732
Medical Management	5733
Nursing Management	5733
Travel and Immigration	5733
Immigration and Acquired Immune Deficiency Syndrome	5734
Immigration and Tuberculosis	5734
Immigration and Vector-Borne Diseases	5734
Chapter 67: Emergency Nursing	5741
Issues in Emergency Nursing Care	5743
Documentation of Consent and Privacy	5743
Limiting Exposure to Health Risks	5744
COVID-19 Considerations	5745
Violence in the Emergency Department	5745
Providing Holistic Care	5746
Patient-Focused Interventions	5747
Family-Focused Interventions	5747
Caring for Emergency Personnel	5749
COVID-19 Considerations	5750
Emergency Nursing and the Continuum of Care	5750
Discharge Planning	5751
Community and Transitional Services	5751
Gerontologic Considerations	5752
Obesity Considerations	5752
Principles of Emergency Care	5753

Triage	5753
COVID-19 Considerations	5755
Assess and Intervene	5755
Airway Obstruction	5757
Pathophysiology	5757
Clinical Manifestations	5757
Assessment and Diagnostic Findings	5757
Management	5758
Hemorrhage	5761
Management	5761
Hypovolemic Shock	5763
Wounds	5764
Management	5764
Trauma	5765
Collection of Forensic Evidence	5766
Injury Prevention	5766
Multiple Trauma	5767
Assessment and Diagnostic Findings	5767
Management	5768
Intra-Abdominal Injuries	5770
Assessment and Diagnostic Findings	5770
Management	5774
Crush Injuries	5774
Assessment and Diagnostic Findings	5775
Management	5775
Fractures	5775
Management	5775
Environmental Emergencies	5776
Heat-Induced Illnesses	5776
Gerontologic Considerations	5777
Assessment and Diagnostic Findings	5778
Management	5778
Frostbite	5779
Assessment and Diagnostic Findings	5779



Management	5779
Hypothermia	5780
Assessment and Diagnostic Findings	5781
Management	5781
Nonfatal Drowning	5782
Management	5783
Decompression Sickness	5783
Assessment and Diagnostic Findings	5784
Management	5784
Animal and Human Bites	5784
Snakebites	5785
Clinical Manifestations	5785
Management	5786
Spider Bites	5787
Tick Bites	5788
Poisoning	5789
Ingested (Swallowed) Poisons	5789
Carbon Monoxide Poisoning	5791
Clinical Manifestations	5791
Management	5791
Skin Contamination Poisoning (Chemical Burns)	5792
Food Poisoning	5792
Substance Use Disorder (SUD)	5794
Acute Alcohol Intoxication	5795
Alcohol Withdrawal Syndrome	5807
Violence, Abuse, and Neglect	5809
Family Violence, Abuse, and Neglect	5809
Gerontologic Considerations	5809
Clinical Manifestations	5809
Assessment and Diagnostic Findings	5810
Management	5811
Sexual Assault	5812
Assessment and Diagnostic Findings	5812
Management	5813

Human Trafficking	5815
Psychiatric Emergencies	5816
Patients Who Are Overactive	5816
Patients with Posttraumatic Stress Disorder (PTSD)	5817
Veterans Considerations	5817
Patients Who Are Underactive or Depressed	5817
Patients Who Are Suicidal	5818
Chapter 68: Disaster Nursing	5824
Disaster Planning	5827
Federal, State, and Local Responses to Disasters	5828
Federal Agencies	5828
State and Local Agencies	5834
The Incident Command System	5835
Hospital Emergency Preparedness Plans	5835
COVID-19 Considerations	5836
Components of the Emergency Operations Plan	5837
Initiating the Emergency Operations Plan	5839
Preparedness and Response	5853
Recognition and Awareness	5853
Personal Protective Equipment (PPE)	5855
Decontamination	5860
Natural Disasters	5861
Outbreaks, Epidemics, and Pandemics	5863
Weapons of Terror	5864
Blast Injury	5865
Biologic Weapons	5868
Chemical Weapons	5874
Nuclear Radiation Exposure	5881
Appendix A: Diagnostic Studies and Interpretation	5893
Index	5921