HEALTH CARE CLAIMS & UTILIZATION INSIGHTS REPORT (2011-2021)

Introduction & Objective

This report summarizes a 10-year analysis (2011–2021) of healthcare claims, patient demographics, observations, provider behaviour, and cost drivers.

The goal is to provide concise, insight-driven findings for executives, focusing on:

1. Cost & claims trends
2. High-cost patient profiling
3. Clinical utilization patterns
4. Practitioner & service provider insights
5. Action-ready recommendations

---

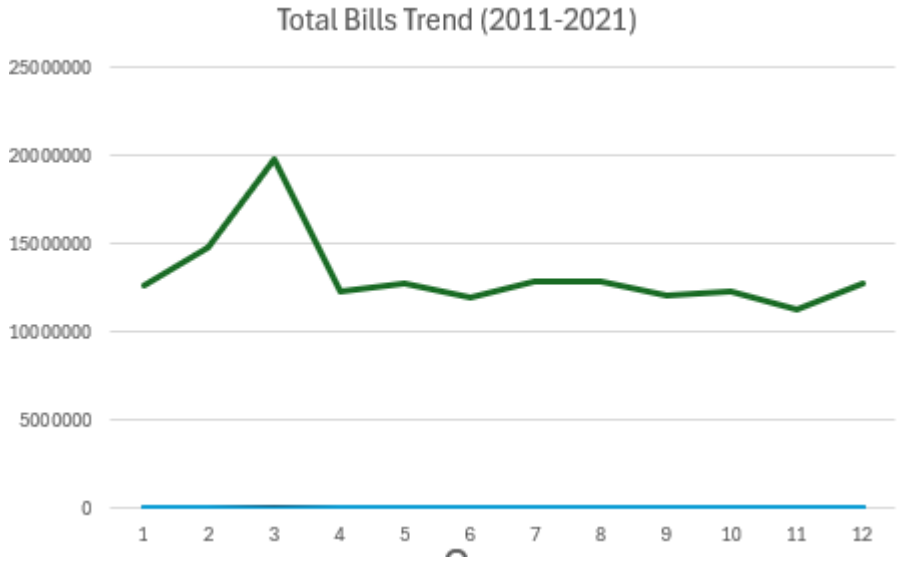
1. Claims & Financial Overview (2011–2021)

Across ten years, overall billed amounts remained stable, averaging $120 per claim per month. Although there is year-to-year fluctuation, the system does not show major structural financial shifts.

Key Insights

Seasonal variation:

- March consistently shows the highest claim volume, while September–November show the lowest.
- Strong correlation: Claim line counts move in parallel with billed amounts → indicates stable clinical and billing behaviour.
- No systemic cost jumps: No evidence of price inflation, coding changes, or structural financing shocks.



2. Cost Driver Analysis

2.1 High-Cost Procedures & Service Categories

Prenatal care is the highest cumulative cost cluster, with fetal heart auscultation + uterine fundal height checks exceeding $34M over 10 years. This represents high frequency and steady utilization.

Major Cost Drivers:

a. Cardiology Interventions (High Cost, Low Volume)

- Cardioversion, thrombectomy, PCI, CABG
- Average cost: $24K–$49K per episode
- Small number of events, but major financial impact.

b. Chronic Condition Recurrence Drivers

- Immunotherapy sessions, dialysis treatments
- Regularly recurring visits → large cumulative cost.

c. High Volume, Low Cost

- Vaccinations, routine primary care exams
- 40% of utilization but minimal financial share.

d. Zero-Cost Procedures

- Documentation-based visits, capitated-care claims
- Should be excluded from cost modelling.

2.2 Provider Performance Insights

The top 5 hospitals (e.g., Queen Elizabeth Hospital, Whitehorse General Hospital) generate $4.5M–$9.8M each in claim value, indicating heavy reliance on a small number of acute care centres.

Key Findings

- High-Cost Rural Providers: Average cost per claim line > $4,500 in remote clinics indicates expensive delivery due to logistics, limited local resources, and travel-based care models.

- Primary Care Backbone: Walk-in/primary care clinics deliver massive volumes at low cost per encounter → essential for managing access and reducing ED load.

- Mental Health & Rehabilitation: Moderate cost contributions but vital for long-term outcomes → should be tracked beyond financial metrics.

- Zero-Cost Providers: Represent non-fee billing structures; track separately for utilization and population management.

2.3 Patient Cost & Utilization Distribution

a. Cost Concentration
   - Top 10% of patients = 51.64% of total cost
   - Top 20% = ~75% of total cost
   - Lower 5 deciles contribute <5% → minimal financial impact.

➔ This indicates strong concentration of cost in a very narrow population group.

CostDecile	NumPatients	TotalNetValue	PctOfTotalCost	TotalClaimLines
1	132	82585712.15	0.521738	37579
2	132	35654479.79	0.225248	19320
3	132	17944777.05	0.113366	15837
4	132	8715597.42	0.055061	14307
5	132	5412249.27	0.034192	12241
6	132	3491179.6	0.022055	10336
7	132	2098901.55	0.013259	9317
8	131	1246801.98	0.007876	8902
9	131	750322.08	0.00474	7342
10	131	389582.79	0.002461	5346

Table 1: Cost Distribution

b. Demographic Insights (Decile 1 Only-the highest)

- Males 65+
- Highest cost per patient
- Highest claim intensity
- Drives ~60% of total Decile 1 cost with only 34 patients

Related conditions: cardiac disease, renal failure, ICU care.

- Females (35–49)
- Significant cost contributor due to high population size
- Consistent cost levels (~$600k–$720k per band)

- Younger High-Cost Patients (18–49)
- Exist but with lower claim line intensity
- Often acute/catastrophic events or rare diseases.

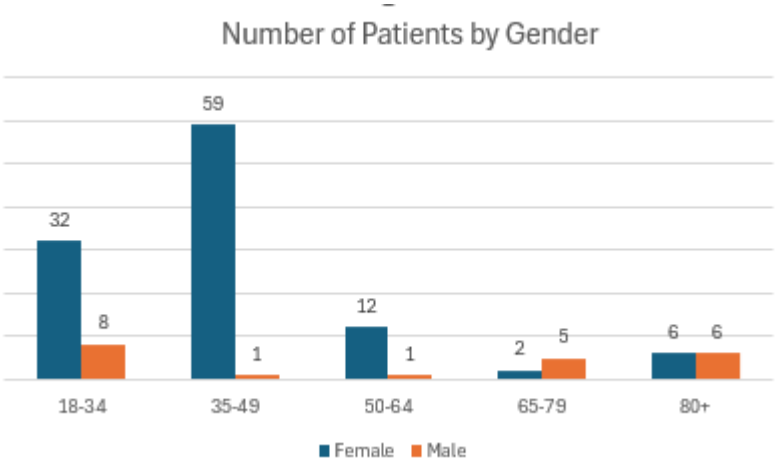


Figure 1: Number of patients by gender

2.4 Cost Bands vs DALY & QALY

Cost patterns align with disease burden and health value:

Key Relationships

- Higher Cost → Higher DALY: Indicates cost is appropriately allocated to sicker patients.

- Higher Cost → Higher QALY Gains: High-cost interventions generate meaningful quality-of-life improvements.

Interpretation by Cost Band

- 1K–50K bands: Rising-risk populations → best opportunity for preventive and early-intervention programs.

- 50K+ patients: High DALY burden + strong QALY return → should be priority for precision case management, complex-care coordination, and post-discharge monitoring.

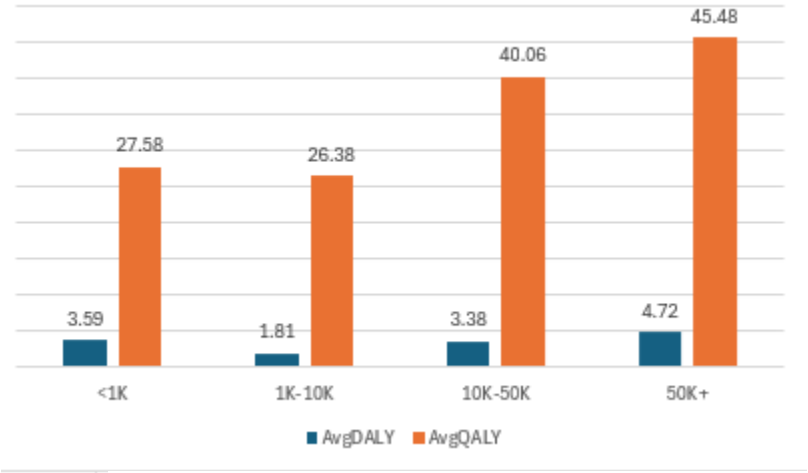


Figure 2: Average DALY and Average QALY by Cost Band

3. Utilization Patterns & Clinical Activity

Encounter Types (AMB, EMER, IMP)
AMB (Ambulatory) = 80%–95% of all encounters yearly
Except pandemic years where inpatient/ED spikes occurred.

Observation Activity (100,000+ observations
Grouped into:

- Vital Signs (largest volume) – strong triage protocol adherence
- Lab Panels: renal/metabolic + hematology dominate
- COVID Testing: distinct surge period
- Specialized Observations: oncology, neonatal, etc.

High Utilization Patients: Some patients generate extreme observation volumes → key input for resource planning, especially chronic disease groups.

Provider Workload

- Top 10 physicians deliver >25% of total encounters
- Top 5 providers = 20%+ of all encounters
  Indicates:
- Operational dependency
- Large patient catchment
- Centralized care patterns

- Walk-in providers often show low unique patient counts and high repeat visits.

PractitionerName	NumEncounters	NumUniquePatients
Dr. Whitney Wyman	15117	96
Dr. Almet Carter	14917	117
Dr. Ludivina Steuber	11328	86
Dr. Octavio Schaefer	9216	31
Dr. Lesley Fisher	8447	35
Dr. Darrick Franecki	8136	70
Dr. Margery Paucek	8017	5
Dr. Caitly Medhurs	7414	71
Dr. Houston Schiller	6977	54

Dr. Harris Blanda	6488	33

Table 2: Top 10 Highest Encounter Number Practitioners

RECOMMENDATIONS:

- Target the top 10-20% high-cost patients with specialized care models to reduce avoidable complications and improve outcomes.
- Realign provider and hospital resources toward ambulatory care growth and balanced clinician workload.
- Launch preventive analytics and early-intervention programs for mid-cost rising-risk patients to stop escalation into ultra-high-cost care.