**EDITED May 9, 2018 3:02 pm**

Research on Anemic populations and their conditions, co-morbidities, vitals, labs, meds, procedures, visit details, and demographics.

***The Prevalence of Anemia and Moderate Severe Anemia in the US Population (NHANES 2003-2012)***

\*\* notes: NHANES (n=41,771) Moderate and severe classifications compressed to one category of moderate-severe). Split into age groups, racial and gender categories. Pregnant women not included.

**Prevalence** *(GENERAL anemia formed from combining anemia and moderate-severe anemia categories. Pregnant women NOT included)*

1. Total sample 41,771
   1. Males – 20,864 (49.4%); Females 20,907 (50.6%)
2. # Anemics in sample = 3702
3. Of the 3702, twice as many females as males had anemia
   1. Females 2496 (67%); Males 1,206 (33%)

Anemia Age Categories (compressed)

* 0-14 (14.2% overall in this age group anemic)
  + Women n= 303 (12.14%)
  + Men n=223 (18.49%)
* 15-49
  + Women n= 1333 (53.4%)
  + Men n= (176) (14.6%)
* 50-79
  + Women (663) (26.5%)
  + Men (551) (45.%)
* 80-85
  + Women n=197 (8%)
  + Men n=256 (21%)

**Race/Gender categories**

White: n = 16,291

White Males: n = ~8048

White Females: n = ~8243

Black: n = 10,174

Black Males: n = ~4952

Black Females: n = ~5072

Hispanic: n = 12,756

Hispanic Males: n = ~6293

Hispanic Females: n = ~6446

Unspecified: n = 2717

**Race -** AA both genders higher rates of anemia, especially females; White lowest; Hispanics in middle

From a TOTAL population of **41,771**

1. Overall: Non-Hispanic **White**; N = 16,329 (39% of sample) // anemic - N= 969 (26%) white males = 1000
   1. Anemic Males N= 391
      1. 42.5% anemic
   2. Anemic Females N= 528
      1. 57.5% anemic
2. Overall: Non-Hispanic **Black**; N= 10,174 (24% of sample) // anemic - N=1699 (46%)
   1. Anemic Males N= 444
      1. 27% anemic
   2. Anemic Females N= 1186
      1. 73% anemic
3. Overall: **Hispanic;** N= 12,756 (30.5% of sample) // anemic - N=772 (18%)
   1. Anemic Males N=156
      1. 20.7% anemic
   2. Anemic Females N=597
      1. 79.3% anemic
4. Overall: **Others** N= 3096 (7% of sample) // anemic - N=262 (7%)

**Percentages by Age, Race, Gender (5/7/2018**

Males Anemic White N= 391 (12% of anemic population N=3302) [ .9% of overall N=41,771]

0-14 = .064 (n=25) .0005985 of overall population; 25/8048= .0031 of white male population

15-49 = .064 (n=25) .0005985 of overall population; 25/8048= .0031 of white male population

50-79 = .442 (n=173) .004142 of overall population; 173/8048= .0215 of white male population

80-85 = .43 (n= 168) .0040219 of overall population; 168/8048= .0209 of white male population

Male Anemic Black N=444 (%13.4 of anemic population N=3302) [ 1.0% of overall N=41,771]

0-14 = .243 (n=108) 108/4952 = .0218 of black male population

15-49 = .221 (n=98) 98/4952 = .0198 of black male population

50-79 = .47 (n=209) 209/4952 = .0422 of black male population

80-85 = .065 (n=29) 29/4952 = .0056 of black male population

Male Anemic Hispanic N=156 (4.7% of anemic population N=3302) [.3% of overall N=41,771]

0-14 = .282 (n=44) 44/6293= .007 of Hispanic male population

15-49 = .122 (n=19) 19/6293= .003 of Hispanic male population

50-79 = .5 (n=78) 78/6293= .0124 of Hispanic male population

80-85 = .096 (n =15) 15/6293= .0024 of Hispanic male population

Females Anemic White N=528 (16% of anemic population N=3302) [ 1.2% of overall N=41,771]

0-14 = .051 (n=27) 27/8243= .0033 of White female population

15-49 = .390 (n=206) 206/8243= .025 of White female population

50-79 = .337 (n=178) 178/8243= .0216 of White female population

80-85 = .221 (n=117) 117/8243= .0142 of White female population

Female Anemic Black N=1,186 (36% of anemic population N=3302) [2.8 % of overall N=41,771]

0-14 = .150 (n=178) 178/5072= .0351 of Black female population

15-49 = .559 (n=664) 664/5072= .1309 of Black female population

50-79 = .25 (n=297) 297/5072= .0586 of Black female population

80-85 = .039 (n=47) 47/5072= .0093 of Black female population

Female Anemic Hispanic N= 597 (%18 of anemic population N=3302) [1.4 % of overall N=41,771]

0-14 = .125 (n=75) 75/6446= .0116 of Hispanic female population

15-49 = .596 (n=356) 356/6446= .0552 of Hispanic female population

50-79 = .234 (n=140) 140/6446= .0217 of Hispanic female population

80-85 = .043 (n=26) 26/6446= .0040 of Hispanic female population

Male Anemic (no race or age due to analytic approach) %15 of anemic popln1.2% of overall. N=501 xxxxxx

**Pregnancy**

1. Anemia across the board was 8.8% (general) and 3.5% for severe.
2. AA pregnant women highest 24%
3. White pregnant females 3.1%
4. Hispanic pregnant females 9.2%
5. “Other” pregnant females 15.6%

**Lab values**

1. Mean Hb levels 14.2 g/dl
2. Median 14.1 g/dl
3. Females lower than males (13.4 versus 14.9 g/dl)

***From other sources***

**Diagnosis/Causation**

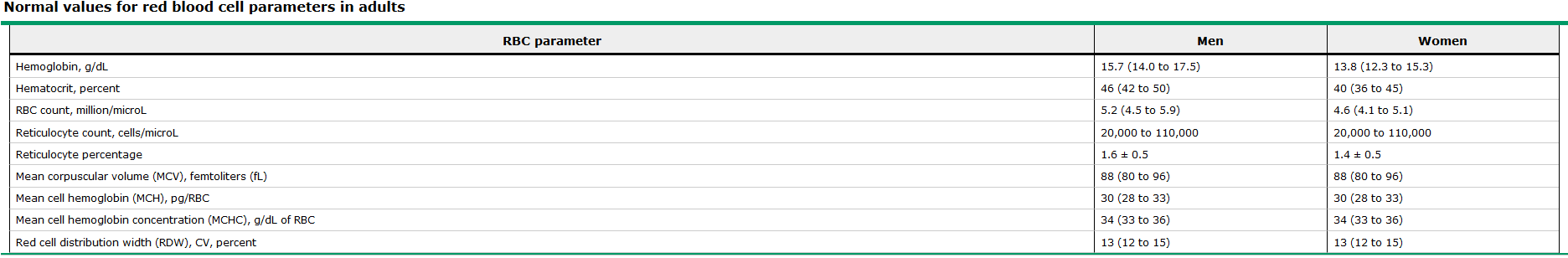
1. Iron deficiency
2. Chronic conditions:
   1. Associated with CHF (17%)
   2. Anemia of chronic inflammation (ACI)
   3. Sickle Cell disease
   4. Renal insufficiency (well known in renal failure/dialysis)McClellan
   5. Anemia was present in 47.7% of 5222 pre dialysis patients with chronic kidney disease. McClellan
   6. Women with chronic kidney disease markedly more likely to be anemic than men. McClellan
   7. Premenopausal higher than post menopausal. McClellan
   8. Diabetes with renal disease at higher riskMcClellan
   9. Anemia highest in patients with renal disease caused by: diabetes (54%); vascular disease (44%); HTN (42%); multiple myeloma (42%) and glomular nephritis (39%)McClellan
3. Race/ethnicity (3 times more common in AA that whites)
4. Post surgical
5. Cancers – various
6. Thalassemia
7. Hyperspleenism
8. Hemolytic anemia
9. HIV/AIDS
10. Diabetics in general (23% unrecognized on testing).Thomas

**Signs & Symptoms –** *2 categories 1.) decreased O2 delivery and 2.) hypovolemia*

1. Decreased O2 delivery:
   1. Fatigue
   2. SOB/exertional dyspnea
   3. Palpitations
   4. Cognitive performance decline (adults & children)
2. Slows psychomotor development (children)
3. Pre-term labor
4. Abnormally low birth weights
5. Maternal mortality
6. Left ventricular hypertrophy in renal insufficiency patients

**Lab values (Normal & Abnormal)**

1. ***Normal:***

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1. ***Abnormal*** (not valid in certain popl’ns like athletes and those at high altitudes)
   1. <13.5 g/dL (<135 g/L) or a HCT <41.0 percent represents anemia in men <12.0 g/dL (<120 g/L) or <36.0 percent, represents anemia in women
2. (eGFR) of less than 60 ml/min/1.73m2

**Vitals**

**Meds**

1. Oral iron supplements
2. B-12
3. IV infusions

**Procedures**

**LABS**

1. HGB
2. HCT
3. Erthyrocytes
4. Red cell indices
5. WBC platelet & reticulocyte counts
6. Blood smear
7. serum ferritin, serum iron and iron-binding capacity
8. Dependent on dx

**Procedures as in orders/treatments????? (not sure)**

**Visit Details**

**?????**