

Unit 3 booklet Math 1112  
Hospital statistics; Solutions to exercises:

Page 4-6 Census and Bed/Bassinette occupancy

1.  $250+30-38+2 = 242 + 2 = 244$       2. Daily Inpatient Census = IPSD (see Horton, page 26) therefore average daily inpatient census is  $3200/30 = 106.667$ ;
3. a. 469, b. 475      4. a. 24, b. 24
5. Numerator = 388; denominator =  $14 * 30 \text{ days} = 420$ . Bassinette occupancy =  $388/420 = 92.38\%$
6. Bed occupancy for July =  $5710 / (250*16 + 200*15) = 81.57\%$ .
- 7a. 95.075%    b. 92.84%    c. 94.913%    d. 94.246%    e. 15    f. 211    g. 54.311%

Page 8 – practice with admissions data on spreadsheet appendix 2

- 1a. 58    b. 59    c. 420    d. 47/91    e.  $82/105 = 78.09\%$     f. Feb 19     $78/91 = 85.71\%$     g.  $1660/28 = 59.29$  bums in beds on average.    h.  $61+12-14 = 59$  bums in beds on March 1<sup>st</sup> end of day

Page 10-11. LOS

- 1a. 2    b. 13    c. 184;    2. 6;    3a.  $4785/895 = 5.35$     b.  $330/86 = 3.84$     c.  $4820/(180*30) = 89.26\%$
4. a.  $240/(57+0) = 4.21$       b.  $325/(80+1) = 4.01$     c.  $845/(163+10) = 4.88$   
d.  $352/(93+1) = 3.74$       e.  $(845+369+325+240)/(63+93+80+57+10+1+1+0) = 1779/405 = 4.39$
5. a. 20316    b.  $23129/6567 = 3.52$     c.  $64978/18864 = 3.44$     d.  $107242/113790 = 94.24\%$

Page 14-17; Dead Discharges

- 1) a.  $(36+5)/(691+60) = 41/751 = .0546$     b.  $(30+4)/(691+60-6-1) = 34/744 = 0.0457$     c.  $(4+1)/60 = 0.083$
- 2) a.  $41/516 = 0.0795$     b.  $31/516-10 = 0.0613$     c.  $2/38 = 0.0526$     d.  $20/256 = 0.0784$     e. psychiatric (2.22%)
- 3)  $2/84 = 2.38\%$ ;
- 4) a.  $19/(483+19) = 3.8\%$     b.  $14/497 = 2.82\%$     c.  $3/98 = 3.06\%$     d.  $16/404 = 3.96\%$     e.  $(2+1)/(88+2+1) = 3.3\%$
- 5)  $2/238 = 0.84\%$ ;
- 6) a.  $35/704 = 4.97\%$     b.  $29/698 = 4.15\%$     c.  $2/57 = 3.51\%$     d. fetal death rate =  $3/(55+3) = 5.17\%$
- 7)  $5/188 = 2.66\%$ ;
- 8) a.  $2/1854 = 0.11\%$     b.  $12/1852 = 0.65\%$     c.  $40/1849 = 2.16\%$     d.  $31/1840 = 1.68\%$
- 9) a.  $0/298 = 0\%$     b.  $4/260 = 1.54\%$     c.  $9/262 = 3.44\%$     d.  $7/260 = 2.69\%$

Page 19-23: Autopsy:

1. d -20%
2.  $21/44 = 47.73\%$  (21 hospital inpatient autopsies – coroner cases aren't relevant here)
3.  $(21)/(44-3) = 51.22\%$  (numerator: 21 hospital inpatient autopsies; denominator 44 deaths – 3 that were coroner's cases – and therefore removed)
4. a.  $4/9 = 44.44\%$  (do not include Fetal autopsy in numerator)  
b.  $4/9 = 44.44\%$ ;  
c.  $(4+1)/(9+1) = 50\%$  (added in the OP autopsy in numerator and denominator)
5. a.  $(3+3)/(6+3) = 66.66\%$     b.  $3/6 = 50\%$ ;
6.  $1/2 = 50\%$ ;
7. a.  $(4+3+4)/(7+6+9 - 1 - 2) = 11/19 = 57.89\%$     b.  $(4+3+4)/(7+6+9) = 11/22 = 50\%$ ;  
c.  $(4+3+4 + 2+2+2)/(7+6+9 - 1 - 2+2+2+2) = 17/25 = 68\%$
8. a.  $(5+1+2)/(9+1+2) = 66.67\%$     b.  $(5+1)/(9+1) = 60\%$     c. no information is given about the number of coroner's cases.
9.  $1/3 = 33.33\%$
10. In this question you need to think about the setup in the following way. Each PCU (or department), which stands for patient care unit is part of the A&C statistics except for NB. When I ask for any autopsy rate I am asking for the sum of all departments + NB.

- a.  $0/1 = 0\%$    b.  $14/39 = 35.90\%$    c.  $14/(39-3) = 38.89\%$    d.  $8/(27-1) = 30.77\%$    e.  $2/5 = 40\%$   
f.  $(14+4)/(39+4-3) = 18/40 = 45\%$

Page 25-26 Other Discharge Rates

- 1) a.  $7000/200 = 35$    b.  $(0.82 \times 365)/8.5 = 35.21$   
2) a.  $9180/250 = 36.72$ ;  
b. Bed occupancy =  $\{69\,608/250 \times 365\} = 0.76283$ ;  
Bed occupancy \* 365 = 278.432;   Bed turnover indirect =  $278.432/7.64 = 36.44$   
c.  $1245/15 = 83$    d.  $323.07/3.926 = 82.29$   
3) a.  $8/28 = 28.57\%$    b.  $6/28 = 21.43\%$   
4)  $20/200 = 10\%$