

Unit 9 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 = $14 * 30$ 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 1st 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) $20/200 = 10\%$