Chapter 5

5-1. a. \((1 - 0.8593) = 0.1407\)
   
b. at least 10 persons with \(p = 0.0226\)
   
c. virtually zero

5-2. probability of observing 10 or more cases: \(1 - 0.9618 = 0.0382\); probability of observing 3 or less: \(0.2426\) (from Poisson with mean = 5.165).

5-3. 0.0146; 0.6057 (= 0.7073 - 0.1016)

5-4. no, over 90% of the population would have no hospital expenditure.

5-5. The rate for Harris County is 5.88 per 100,000; the probability of observing 173 or fewer is virtually zero (using normal approximation), indicating that the national rate might not apply to Harris County.

5-6. probability is 0.0116 (= 1 - 0.9884); would investigate further.

5-10. \(z = -1.3441; \Pr (x < 7 ) = 0.0895;\) yes, it is normal distributed; can be verified by a normal probability plot.

5-11. Probability is virtually zero; those exposed may be older than those not exposed; 15 (= 79 - 64) firefighters who were exposed but not included in the study may not have any adverse symptoms.