

139. Key: B

The unconditional probabilities for the number of people in the car who are hospitalized are 0.49, 0.42 and 0.09 for 0, 1 and 2, respectively. If the number of people hospitalized is 0 or 1, then the total loss will be less than 1. However, if two people are hospitalized, the probability that the total loss will be less than 1 is 0.5. Thus, the expected number of people in the car who are hospitalized, given that the total loss due to hospitalizations from the accident is less than 1 is

$$\frac{0.49}{0.49 + 0.42 + 0.09 \cdot 0.5} \cdot 0 + \frac{0.42}{0.49 + 0.42 + 0.09 \cdot 0.5} \cdot 1 + \frac{0.09 \cdot 0.5}{0.49 + 0.42 + 0.09 \cdot 0.5} \cdot 2 = 0.534$$