

Additional file 3

Calculation: Probability of at Least One Trained Crew

Member Total employees = 84

- Trained for study procedure = 51
- Not trained = $84 - 51 = 33$
- Each ambulance is staffed by two people, randomly paired

1. Total number of possible pairs:

$$C(84, 2) = 84 \times 83 / 2 = 3486$$

2. Number of pairs without trained personnel:

$$C(33, 2) = 33 \times 32 / 2 = 528$$

3. Number of pairs with at least one trained person:

$$3486 - 528 = 2958$$

4. Probability:

$$P(\text{at least one trained}) = 2958 / 3486$$

$$= 493 / 581 \approx 0.8485$$

Result:

Approximately **84.9%** of ambulance missions will have at least one crew member trained in the procedure on board.