

Oxygen Administration by Non-rebreather Mask

Bag-Valve-Mask Ventilation of an Apneic Adult Patient

Data -

For every 10 critically ill patients whose oxygen saturation drops below 90%, **expect 2–5 additional deaths** compared to those with saturations above 90%, depending on how low and how long the saturation remains below this threshold.^[1-2] The risk increases sharply as saturation falls further below 90%.

In large randomized trials, such as TRAUMOX2, the overall 30-day mortality in trauma patients was about 16%, but the trial did not specifically stratify mortality by SpO₂ <90% in the prehospital phase. However, observational data and smaller studies consistently show that **patients with SpO₂ <90% have roughly 1.5 times the odds of death compared to those with higher saturations.**^[1-2]

It is important to note that while hypoxemia is common in prehospital trauma (up to 38% of patients experience SpO₂ ≤90%), the absolute risk of mortality depends on injury severity and other clinical factors.^[3] The association is strongest for sustained or repeated episodes of hypoxemia.

References:

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