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Title: The impact of paramedics' education on controlled oxygen prescribing for patients with acute exacerbations of COPD during ambulance transfers on outcomes

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Body: Introduction Oxygen is a drug and should be administered with caution and only when indicated using the principle of target oxygen saturation (British Thoracic Society-BTS emergency oxygen guidelines, 2008) particularly in those at risk of Type 2 Respiratory Failure (T2 RF) like COPD patients. Aims To reduce complications of excessive use of oxygen during ambulance transfer in patients with acute exacerbation of COPD. Methods Ambulance paramedics within Salford, UK were offered education on the BTS acute oxygen therapy guidelines that included lectures and written material with supplementary access to on-line training. The education focused on the principle of using target O₂ saturations and controlled oxygen delivery to guide oxygen therapy in patients transferred to hospital with suspected exacerbation of COPD. Results Total of 63 paramedics were trained. Over the 3 months evaluation period post training, 75 (21 males) patients with COPD exacerbations were transferred by ambulance to the local hospital, 10 of whom were transferred by trained paramedics. No differences were noted between the 2 groups of patients in relation to first blood gas results (PH, PCO₂, PO₂), length of stay and number of 30 days readmissions. Fewer patients in the trained paramedics group needed NIV within 24 hours of admission, were admitted to ITU, or died in hospital. Conclusions A simple programme of paramedics' education on the appropriate use of oxygen in patients at risk of T2RF according to guidelines may have a favourable impact on important patients' safety and outcomes like in-hospital death, admission to ITU or the need for NIV.