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Advanced paramedic care for respiratory distress saves lives, according to world's largest study

Ottawa, May 23, 2007 – Training all paramedics to give intravenous drugs and insert breathing tubes in people with respiratory distress could save up to 20,000 lives each year in Canada and the United States, according to the largest study of its kind, to be published tomorrow in the *New England Journal of Medicine*.

“We found that training paramedics to provide advanced care to people in respiratory distress decreased the rate of death from 14.3 per cent to 12.4 per cent, and although this may seem like a small amount, when you consider that more than 2 million Canadians and Americans are transported by ambulance each year for this condition, the impact is substantial,” said lead author Dr. Ian Stiell, a Senior Scientist at the Ottawa Health Research Institute, Professor and Chair of Emergency Medicine at the University of Ottawa, and Emergency Department Physician at The Ottawa Hospital.

The current study is the second of four parts of the Ontario Prehospital Advanced Life Support (OPALS) study, funded by the Ontario Ministry of Health and Long-term Care. Advanced Life Support (ALS) training for paramedics was introduced throughout Ontario in 1998 and OPALS was initiated to determine its impact on survival and quality of life in patients with cardiac arrest, respiratory distress (shortness of breath), major trauma, and chest pain. Before implementation of ALS, paramedic care for respiratory distress was limited to giving oxygen and in some cases providing inhalers and medications that dissolve under the tongue. The current study included more than 8,000 Ontarians in 18 urban communities attended by paramedics for respiratory distress either before or after implementation of ALS.

Additional findings include:

- Patients in the ALS phase were more likely to arrive at the hospital in improved condition (45.8 per cent compared to 24.5 per cent).
- Patients in the ALS phase were more likely to achieve the highest score in a test of brain function (62.5 per cent compared to 52.3 per cent).
- Cities with a population of more than 100,000 were more likely to experience benefits of ALS compared to smaller cities.

Respiratory distress is the second most common complaint of adults transported by ambulance in the United States. The most common causes of respiratory distress in this setting include congestive heart failure, pneumonia, chronic obstructive pulmonary disease, and asthma.

“This study proves that advanced care paramedics can make an important difference for those suffering from life-threatening respiratory difficulties,” said Chief Anthony Di Monte of the Ottawa Paramedic Service. He also emphasized the importance of research in this area, stating “It is crucial to have world-renowned research groups, like the one led by Dr. Stiell, validating the advanced medical procedures that are undertaken by paramedics.”

Limitations of the study include the fact that it was designed as a controlled comparison of patients before and after adoption of ALS, rather than as a randomized trial. This means that non-ALS changes in paramedic care, including increased use of inhalers and oral drugs, may have also influenced results. This study remains, however, the largest and best-controlled evaluation of ALS for respiratory distress in the world.

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