

Statewide Educational Intervention Dramatically Increases Capnography use in North Carolina



Presented by:
Antonio R. Fernandez, PhD, NRP, FAHA
September 22, 2016



Study Authors

- **Antonio R. Fernandez, PhD, NRP, FAHA** - EMS Performance Improvement Center, Department of Emergency Medicine, University of North Carolina – Chapel Hill, Chapel Hill, North Carolina, USA
- **Michael Mastropole, BS, EMT-B** - EMS Performance Improvement Center, Department of Emergency Medicine, University of North Carolina – Chapel Hill, Chapel Hill, North Carolina, USA
- **David Ezzell, MPA, EMT-P** - North Carolina Office of Emergency Medical Services, North Carolina Department of Health and Human Services, Raleigh, North Carolina, USA
- **Jennifer Kagarise Wilson, BA, EMT-B** - EMS Performance Improvement Center, Department of Emergency Medicine, University of North Carolina – Chapel Hill, Chapel Hill, North Carolina, USA
- **James Winslow, MD, MPH, FACEP** - North Carolina Office of Emergency Medical Services, North Carolina Department of Health and Human Services, Raleigh, North Carolina, USA; 3 Department of Emergency Medicine, Wake Forest School of Medicine, Winston-Salem, North Carolina, USA



Background

The use of capnography can greatly assist EMS providers in objectively evaluating the patient's respiratory status as well as providing early identification of return of spontaneous circulation.



Background

- In January 2014, the North Carolina Office of EMS (NCOEMS) noted an apparent trend of decreasing reports of capnography use, statewide. Use of capnography had decreased 37.9% over the previous two years.
- In 2015, with the goal of increasing capnography use, the NCOEMS partnered the EMS Performance Improvement Center (EMSPIC) to deploy a statewide continuing education course focused on the utilization of capnography.
- The project was funded by The Duke Endowment.



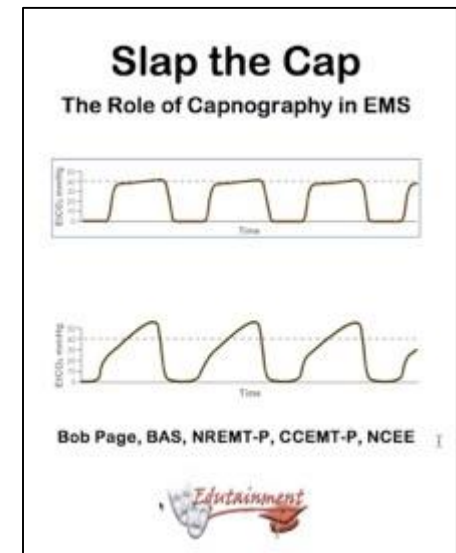
Study Objectives

The objective of this study was to evaluate the impact of a statewide continuing education course, focused on the utilization of capnography, on the frequency of capnography use in North Carolina.



Methods

- In 2015, The NCOEMS and the EMSPIC recruited an internationally renowned EMS educator to provide critically acclaimed capnography training to EMS providers throughout NC.
- From March to October 2015, Bob Page delivered his “Slap the Cap” course in 12 venues in the state as well as during the NC State EMS Conference.



Methods

- There was no fee to attend the course and every credentialed EMS professional in NC received an email invitation from NCOEMS to attend.
- For all course attendees, assessments of capnography use were performed. Comparisons were made evaluating capnography use for each NC EMS provider in attendance for a 6 month period before the course and 6 months following course attendance.



Methods

- This analysis was performed using patient care reports (PCRs) submitted to Prehospital Medical Information System (PreMIS)
- Statewide assessments of capnography use were also performed comparing use in 2014 and 2015.
- Data analysis was completed using Microsoft® Excel (Redmond, WA) and STATA® 12.1 (College Station, TX).

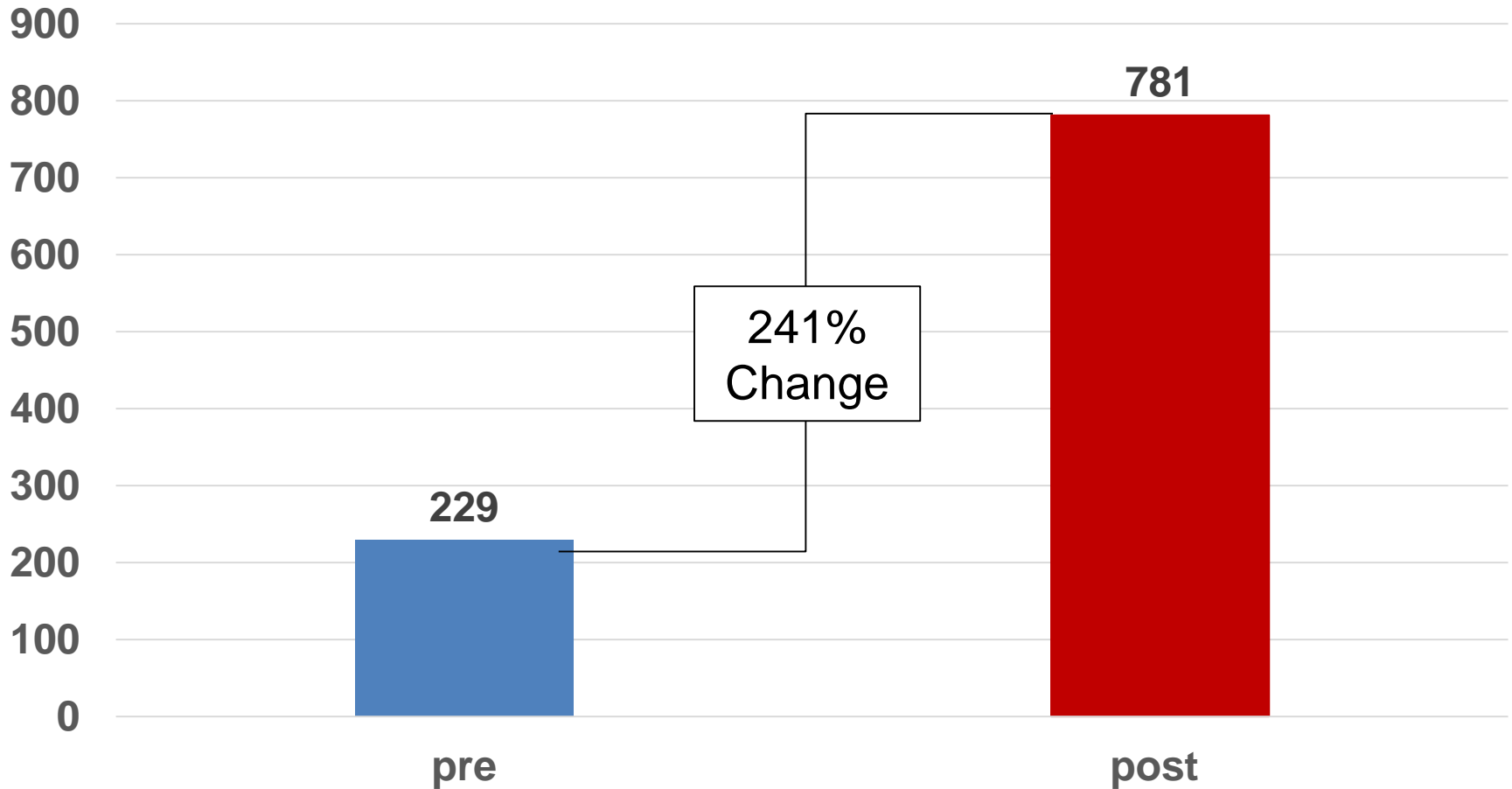


Results

- In 2015, there were 37,295 credentialed EMS professionals in NC.
- There were 552 (1.5%) EMS professionals who attended the capnography courses.
- Class size ranged from 12 to 93 attendees. Overall, there was a 241.0% increase in capnography use among those who attended the course when comparing their capnography use 6 months before the class to 6 months following.



Results

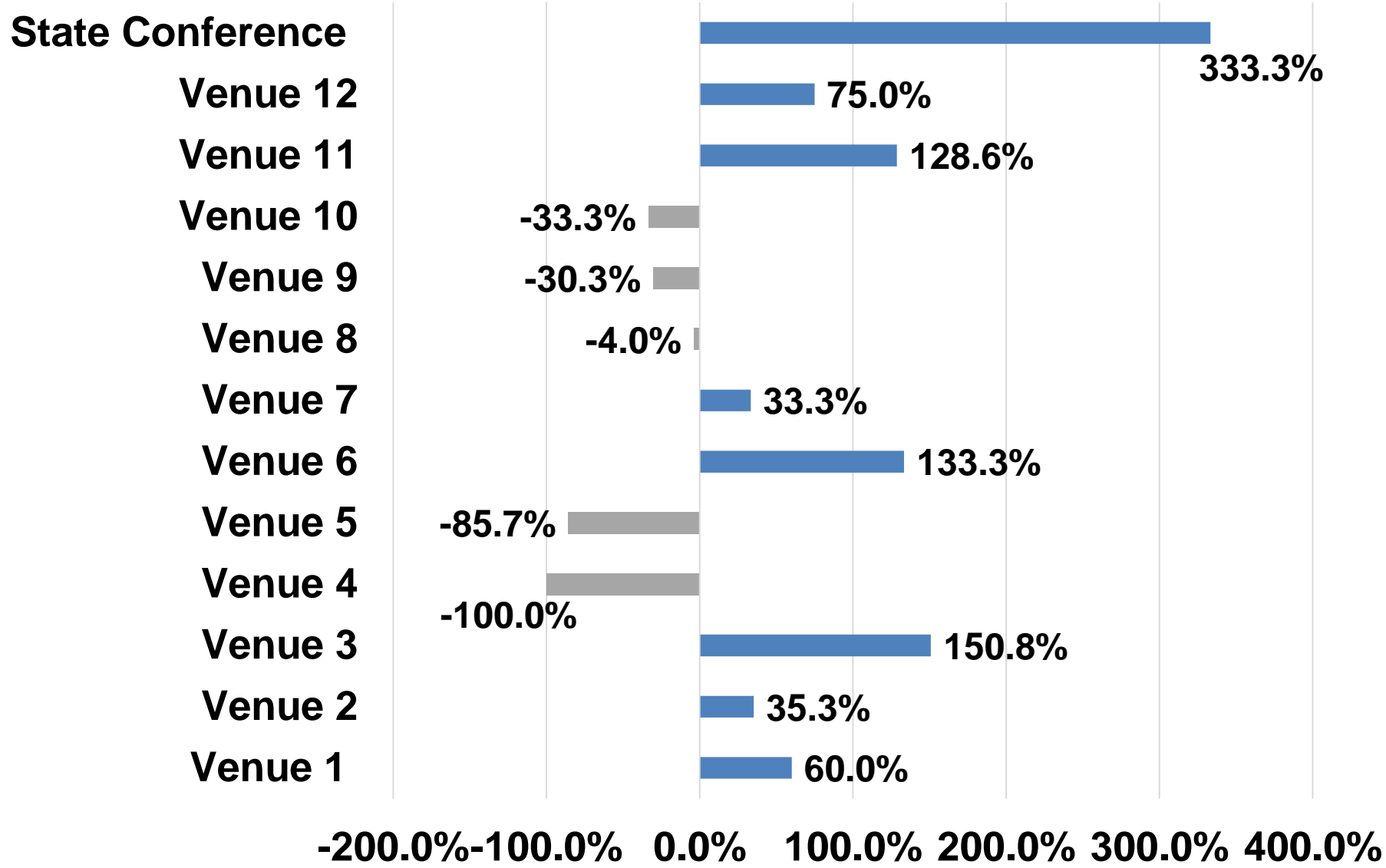


Results

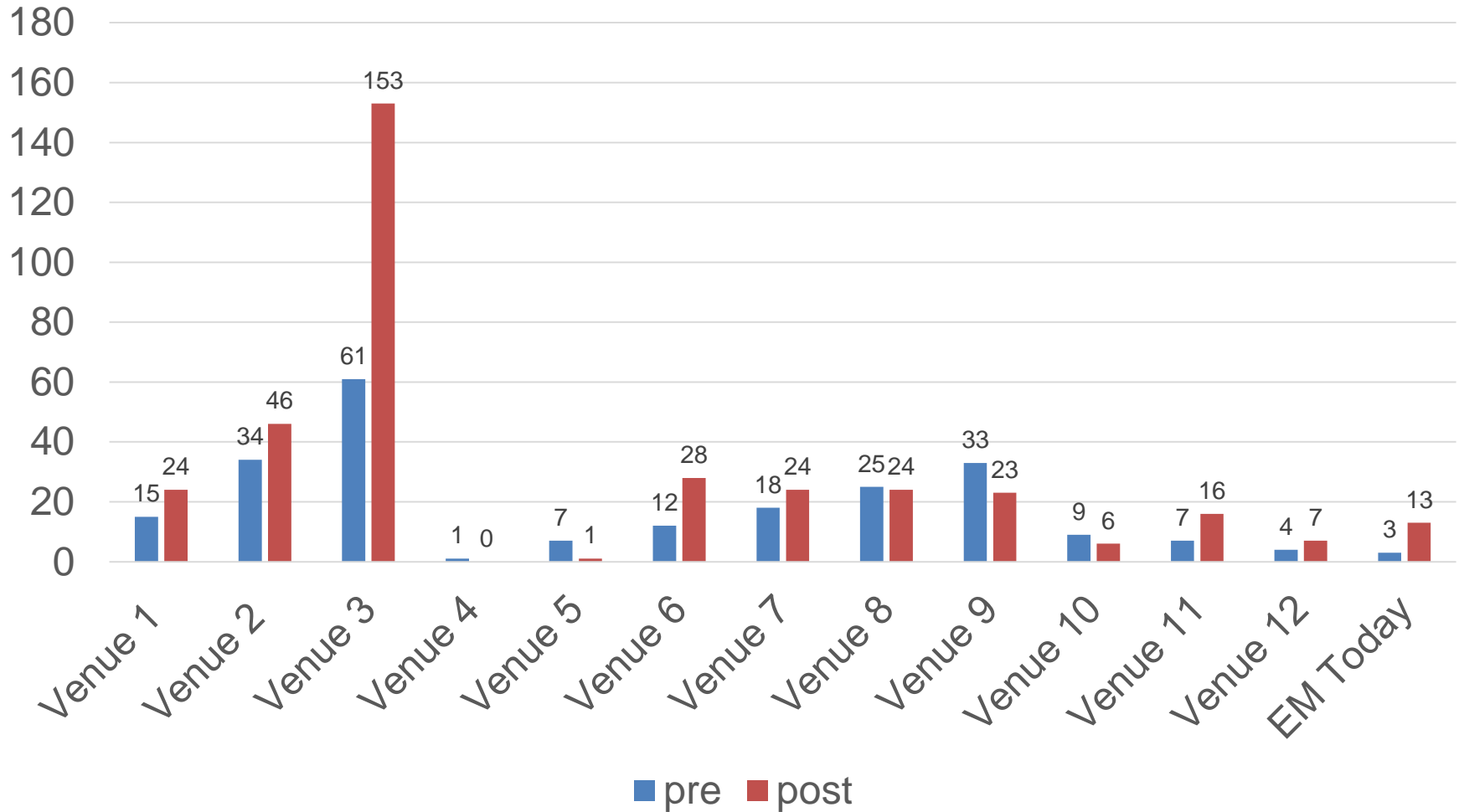
- When evaluating specific classes, 61.5% (8) of those delivered around the state resulted in increased capnography use among attendees. Among those classes, the percent improvement ranged from 33.3% to 333.3%.



Results



Results

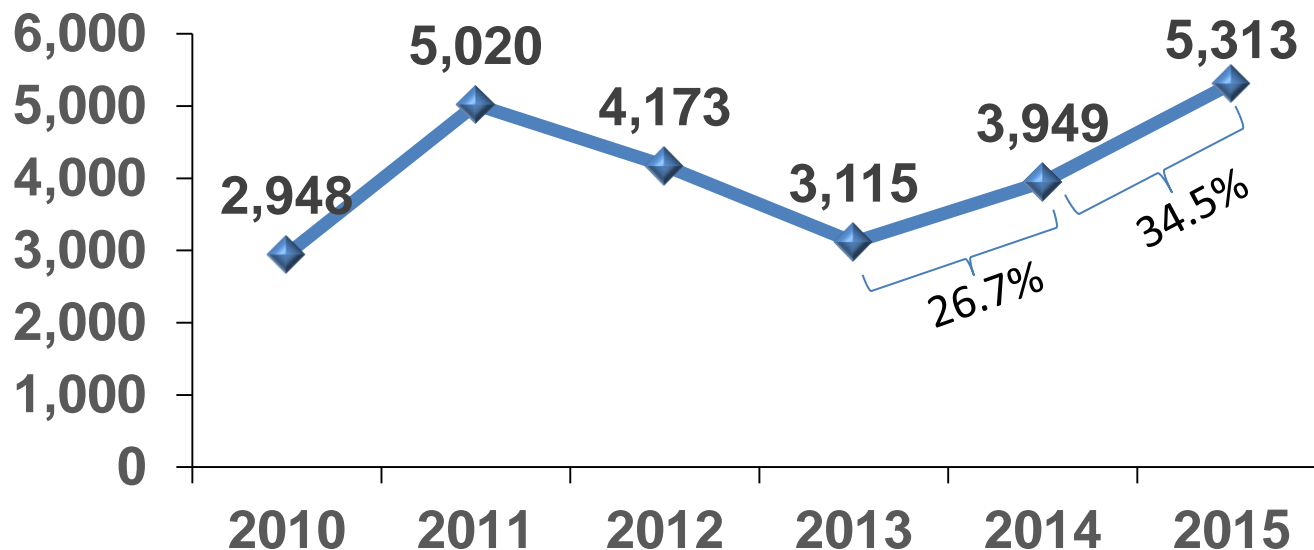




Results



Statewide capnography use in 2015 increased 34.5% when compared to 2014.



Conclusions

- Results indicated that a statewide continuing education course focused on capnography and delivered by an internationally renowned EMS educator was extremely successful in increasing capnography use among attendees in North Carolina.
- Although a small percentage of credentialed NC EMS providers attended the courses, statewide improvements in capnography use were realized, which may be suggestive of a Hawthorne Effect.
- Further study should assess if improvements in capnography use are maintained going forward as well as determining the impact on patient care and outcomes that may be related to increased use of capnography.



Questions?



Antonio R. Fernandez
Research Director
EMS Performance Improvement Center
afernandez@emspic.org
(866) 773-6477

