

531 **Supplement 1. Survey instrument***Confidential*

Page 1

National NPM Airway Curriculum Survey

We ask that the individual from each NPM program who is primarily responsible for procedural training complete this survey. If that is not you, please exit and forward this survey to that person.

We hope to use these survey results to understand the landscape of NPM airway education and eventually advocate for resources to support best-practices. Thank you very much for participating in our survey.

Demographics

Do you organize or participate in endotracheal intubation (ETI) training for your institution's NPM fellowship program?

- Yes
 No

532

07/12/2024 1:10pm

projectredcap.org



533

What fellowship program do you represent? (searchable list by program name or city)

- Advocate Health Care/Advocate Children's Hospital (Park Ridge) Program (Park Ridge, IL)
- Albany Medical Center Program (Albany, NY)
- Atlantic Health System/Goryeb Children's Hospital Program (Morristown, NJ)
- Baylor College of Medicine Program (Houston, TX)
- Brooke Army Medical Center (San Antonio, TX)
- Case Western Reserve Univ/Univ Hosps Cleveland Med Ctr/Rainbow Babies and Childrens Hospital Program (Cleveland, OH)
- Children's Hospital of Michigan Program (Detroit, MI)
- Children's Hospital of Philadelphia Program (Philadelphia, PA)
- Children's Hospital/Boston Medical Center Program (Boston, MA)
- Children's Mercy Hospital Program (Kansas City, MO)
- Children's National Medical Center/George Washington University Program (Washington DC)
- Cincinnati Children's Hospital Medical Center Program (Cincinnati, OH)
- Cleveland Clinic Foundation Program (Cleveland, OH)
- Cook County Health and Hospitals System Program (Chicago, IL)
- Dartmouth-Hitchcock/Mary Hitchcock Memorial Hospital Program (Lebanon, NH)
- Duke University Hospital Program (Durham, NC)
- Emory University School of Medicine Program (Atlanta, GA)
- Hackensack University Medical Center Program (Hackensack, NJ)
- Icahn School of Medicine at Mount Sinai (Kravis Children's) Program (New York, NY)
- Indiana University School of Medicine Program (Indianapolis, IN)
- Johns Hopkins All Children's Hospital Program (St. Petersburg, FL)
- Johns Hopkins University Program (Baltimore, MD)
- Loma Linda University Health Education Consortium Program (Loma Linda, CA)
- Los Angeles County-Harbor-UCLA Medical Center Program (Torrance, CA)
- Louisiana State University (Shreveport) Program (Shreveport, LA)
- Louisiana State University Program (New Orleans, LA)
- Loyola University Medical Center Program (Maywood, IL)
- Marshall University School of Medicine Program (Huntington, WV)
- Mayo Clinic College of Medicine and Science (Rochester) Program (Rochester, MN)
- McGaw Medical Center of Northwestern University Program (Chicago, IL)
- Medical College of Georgia Program (Augusta, GA)
- Medical College of Wisconsin Affiliated Hospitals Program (Wauwatosa, WI)
- Medical University of South Carolina Program (Charleston, SC)
- MedStar Health/Georgetown University Hospital Program (Washington DC)
- Montefiore Medical Center/Albert Einstein College of Medicine Program (Bronx, NY)
- National Capital Consortium Program (Bethesda, MD)
- Nationwide Children's Hospital/Ohio State University Program (Columbus, OH)
- New York Presbyterian Hospital (Columbia Campus) Program (New York, NY)
- New York Presbyterian Hospital (Cornell Campus) Program (New York, NY)
- NYU Grossman School of Medicine Program (New York, NY)
- Oregon Health & Science University Program (Portland, OR)
- Orlando Health/Winnie Palmer Hospital Program (Orlando, FL)
- Penn State Milton S Hershey Medical Center Program (Hershey, PA)
- Phoenix Children's Hospital Program (Phoenix, AZ)
- Rush University Medical Center Program (Chicago, IL)
- Rutgers Health/Robert Wood Johnson Medical School Program (New Brunswick, NJ)
- Sidney Kimmel Medical College at Thomas Jefferson University/duPont Hospital for Children Program (Philadelphia, PA)
- Sparrow Hospital Program (Lansing, MI)
- St Louis University School of Medicine Program (St Louis, MO)
- Stanford Health Care-Sponsored Stanford University Program (Palo Alto, CA)
- Stony Brook Medicine/Stony Brook Children's Hospital Program (Stony Brook, NY)
- SUNY Downstate Health Sciences University Program (Brooklyn, NY)
- Texas A&M College of Medicine-Scott and White Medical Center (Temple) Program (Temple, TX)
- The MetroHealth System/Case Western Reserve University/Cleveland Clinic Foundation Program (Cleveland, OH)
- Tower Health Program/St. Christopher's Hospital for Children (Philadelphia, PA)
- Tufts Medical Center Program (Boston, MA)
- UCLA David Geffen School of Medicine/UCLA Medical Center Program (Los Angeles, CA)
- UMass Chan Medical School Program (Worcester, MA)
- University at Buffalo Program (Buffalo, NY)
- University of Alabama Medical Center Program (Birmingham, AL)
- University of Arkansas for Medical Sciences (UAMS) College of Medicine Program (Little Rock, AR)
- University of California (Irvine) Program (Orange, CA)
- University of California (San Diego) Medical Center Program (La Jolla, CA)
- University of California (San Francisco) Program (San Francisco, CA)

- University of California Davis Health Program (Sacramento, CA)
- University of Chicago Program (Chicago, IL)
- University of Colorado Program (Aurora, CO)
- University of Connecticut Program (Hartford, CT)
- University of Florida Program (Gainesville, FL)
- University of Hawaii Program (Honolulu, HI)
- University of Illinois College of Medicine at Chicago Program (Chicago, IL)
- University of Illinois College of Medicine at Peoria Program (Peoria, IL)
- University of Iowa Hospitals and Clinics Program (Iowa City, IA)
- University of Kentucky College of Medicine Program (Lexington, KY)
- University of Louisville School of Medicine Program (Louisville, KY)
- University of Maryland Program (Baltimore, MD)
- University of Miami/Jackson Health System Program (Miami, FL)
- University of Michigan Health System Program (Ann Arbor, MI)
- University of Minnesota Program (Minneapolis, MN)
- University of Mississippi School of Medicine Program (Jackson, MS)
- University of Nebraska Medical Center College of Medicine Program (Omaha, NE)
- University of New Mexico School of Medicine Program (Albuquerque, NM)
- University of North Carolina Hospitals Program (Chapel Hill, NC)
- University of Oklahoma Health Sciences Center Program (Oklahoma City, OK)
- University of Puerto Rico Program (San Juan, PR)
- University of Rochester Program (Rochester, NY)
- University of South Florida Morsani Program (Tampa, FL)
- University of Southern California/LAC+USC Medical Center Program (Los Angeles, CA)
- University of Tennessee Program (Memphis, TN)
- University of Texas at Austin Dell Medical School Program (Austin, TX)
- University of Texas Health Science Center at Houston Program/McGovern Medical School (Houston, TX)
- University of Texas Health Science Center San Antonio Joe and Teresa Lozano Long School of Medicine Program (San Antonio, TX)
- University of Texas Medical Branch Hospitals Program (Galveston, TX)
- University of Texas Southwestern Medical Center Program (Dallas, TX)
- University of Utah Health Program (Salt Lake City, UT)
- University of Vermont Medical Center Program (Burlington, VT)
- University of Virginia Medical Center Program (Charlottesville, VA)
- University of Washington Program (Seattle, WA)
- University of Wisconsin Hospitals and Clinics Program (Madison, WI)
- UPMC Medical Education Program (Pittsburgh, PA)
- Vanderbilt University Medical Center Program (Nashville, TN)
- Vidant Medical Center/East Carolina University Program (Greenville, NC)
- Virginia Commonwealth University Health System Program/Children's Hospital of Richmond (Richmond, VA)
- Wake Forest University School of Medicine Program (Winston-Salem, NC)
- Washington University/B-JH/SLCH Consortium Program (St Louis, MO)
- West Virginia University Program (Morgantown, WV)
- Westchester Medical Center Program/Maria Fareri Children's Hospital (Valhalla, NY)
- Women and Infants Hospital of Rhode Island/Brown University Program (Providence, RI)
- Yale-New Haven Medical Center Program (New Haven, CT)
- Zucker School of Medicine at Hofstra/Northwell at Cohen Children's Medical Center Program (New Hyde Park, NY)
- Program not listed

How many total fellows are in your fellowship program?

What is your relationship to the neonatal-perinatal medicine fellowship program?

- Program director
- Associate program director
- Neonatal faculty member that contributes to the educational effort
- Chief fellow
- Other

Please describe your relationship to the fellowship program.

First year fellows

Does your fellowship program provide ETI (endotracheal intubation) training to first year fellows prior to their first clinical rotations (i.e. during a clinical orientation)?

- Yes
 No

What airway skills are taught during ETI orientation? (select ALL that apply)

- Oral ETI
 Nasal ETI
 Use of video laryngoscope
 Laryngeal mask airway (LMA) placement
 Oral airway placement
 Nasal airway placement
 Tracheostomy tube management
 Tracheostomy tube changes
 Managing infants with critical airways
 Indications for & administration of premedication for intubation
 Minimally invasive surfactant therapy (MIST) or Less invasive surfactant administration (LISA)
 Bag mask positive pressure ventilation
 Other airway skills (please describe)
 None of the above

Please describe "other" airway skills taught during clinical orientation.

Please estimate how many hours of ETI instruction are included during orientation (includes classroom didactics and hands-on simulation training).

- None
 < 1hr
 1 to < 2 hrs
 2 to < 3 hrs
 3 to < 4 hrs
 4 to < 5 hrs
 >5 hrs

What educational methods for teaching ETI are used for first year fellows? (select ALL that apply)

- Didactic on airway anatomy
 Directed reading on the procedure
 Videos of neonatal ETI (i.e. recorded video laryngoscopy airway views, videos from ENT intubations)
 Video laryngoscopy used during simulation
 In-person demonstration of ETI
 Simulation training using manikins and task trainers
 Animal models (ferrets, pigs, kittens, etc)
 Anesthesia/OR training
 One-on-one training
 Group training
 Other (please describe)
 None of the above

Please describe your "other" educational methods.

Confidential

Page 5

Overall fellowship ETI education

How satisfied are you with your current ETI curriculum for all your fellows?

- Very satisfied
 Somewhat satisfied
 Somewhat unsatisfied
 Very unsatisfied

Please comment on your response.

What teaching topics are covered in your current ETI curriculum for all fellows? (Select ALL that apply)

- Indications for ETI
 Airway anatomy
 SOAPMD (Suction, Oxygen, Airway equipment, Personnel, Monitors, Drugs)
 Airway equipment (ETT size, blade size, depth of insertion)
 Indications for & administration of premedication for intubation
 Management of difficult airway scenarios
 Complications of ETI
 Other (please describe)
 Not applicable

Please describe your "other" ETI curriculum topics.

Does your program use manikins and/or simulation to teach ETI?

- Yes
 No
 Unsure

What proportion of your fellowship ETI instruction is hands-on (i.e. not didactic learning)?

- 0%
 1-25%
 26-50%
 51-75%
 76-100%

What are your biggest barriers to ETI training? (select ALL that apply)

- Time constraints
 Faculty availability to teach
 Faculty interest in teaching
 Trainee interest
 Equipment availability
 Simulation space availability
 Presence of other providers in the NICU (e.g. advanced practice providers, hospitalists, or residents)
 Other (please describe)
 No barriers

Please describe "other barriers" to ETI training.

Confidential

Page 6

Does your NICU have a formal policy about how fellows are prioritized for ETI attempts?

- Yes
 No
 Unsure

How often do your fellows (all years of training) participate in ETI skills refresher training?

- There is no refresher training provided
 Weekly
 Monthly
 Every 3 months
 Every 6 months
 Once per year
 Ad hoc, no set schedule
 Other (please describe)

Please describe your "other" schedule for ETI refresher training.

How do your fellows learn to manage patients with difficult and critical airways? (Select ALL that apply)

- Simulation training
 Didactic instruction by Anesthesia or ENT
 Hands-on instruction by Anesthesia or ENT
 No specific training
 Other (please describe)

Please describe your program's "other" approaches to difficult airway training.

If you were designing the optimal ETI training for your fellowship, what elements would you like to include? (Select ALL that apply)

- Didactics
 Directed reading on the procedure
 Videos of neonatal ETI (i.e. recorded video laryngoscope airway views, videos from ENT intubations)
 Video laryngoscopy used during simulation
 In-person demonstration of ETI
 Simulation training using manikins and task trainers
 One-on-one training
 Group training
 Exposure to more than one teacher
 Animal models (ferrets, pigs, kittens, etc)
 Intubate deceased infants in the morgue
 Anesthesia/OR training
 Other (please describe)
 None of the above

Please describe "other" optimal training approaches for ETI education.

Is video laryngoscopy (e.g. C-MAC, GlideScope, NeoView) used for ETI at any of the NICUs your fellows rotate through?

- Yes
 No
 Unsure

How often is video laryngoscopy used for ETI?

- The majority of ETIs
 More than half of ETIs
 About half of ETIs
 Less than half of ETIs
 Almost never

How often does your NICU administer premedication (e.g. sedative, paralytic, and/or anticholinergic) prior to ETI in non-emergent intubations?

- The majority of ETI's
 More than half of ETI's
 About half of ETI's
 Less than half of ETI's
 Almost never

Trainee ETI assessment

How do you determine when a trainee is ready to perform ETI on an actual patient without DIRECT supervision? (select ALL that apply)

- We don't formally assess ETI readiness and don't feel like it is necessary
 We don't formally assess ETI readiness but would like to start
 We formally assess ETI readiness using total successful ETI encounter under direct supervision
 We formally assess ETI readiness using checklists/global rating scales in ETI attempts in patients
 We formally assess ETI readiness using checklists/global rating scales in ETI attempts in simulation
 Other (please describe)

Please describe the "other" methods used to assess trainee readiness for ETI without DIRECT supervision.

Does your program use any of the following options to aid in assessment of fellow ETI competency? (select ALL that apply)

- Review of fellow laryngoscopy videos (e.g. from CMAC)
 Procedure case logs
 Local QI data (e.g. NEAR4NEOS)
 Feedback from attendings/supervisors
 Evaluation during simulation
 Direct clinical supervision
 We don't assess ETI competency
 Other (please describe)

Please describe "other" assessment tools used to determine fellow ETI competency.

How often does your program review ETI competency for individual trainees?

- Every month
 Quarterly
 Every 6 months
 Yearly
 Never
 Only if a concern is raised by fellow, faculty, or other clinical staff member
 Other (please describe)

Please describe your program's ETI competency evaluation schedule.

Does your program have a minimum number of ETIs that fellows must successfully complete to graduate fellowship?

- Yes
 No
 Unsure

How many ETIs must a fellow attempt/complete to graduate? (please write "don't know" if unsure)

What is the approximate average number of ETI attempts per fellow graduating from your program over the past 5 years? (please write "don't know" if unsure)

How do you identify fellows who are struggling to intubate patients successfully? (check ALL that apply)

- No specific approach to identify struggling learners
 Evaluation during simulation
 Review of procedural case log
 Local ETI QI data (e.g. NEAR4NEOS)
 Feedback from supervising faculty
 Feedback from other clinician providers (not including faculty)
 Fellow self identifies or seeks help
 Other (please describe)

Which "other" methods are used to identify fellows struggling with ETI?

Once a struggling fellow is identified, what type(s) of interventions are employed? (Select ALL that apply)

- No interventions provided
 Anesthesia training/time
 Simulation-based training
 Direct supervision for ETI
 Other (please describe)
 None of the above

Please describe "other" methods do you use to assist fellows who are struggling with ETI.

Confidential

Page 9

There is no universal definition for procedural competency in ETI.

What do you think are the THREE most important performance descriptions to determine ETI competency for an NPM fellow?

- Total number of successful ETI's
- Total number of ETI attempts
- Successful ETI percentage
- Able to reliably intubate any patient on the first attempt
- Able to reliably intubate any patient within 2 attempts
- Able to reliably intubate any patient without causing severe bradycardia or hypoxemia
- Able to reliably intubate an extremely low birth weight (ELBW) patient
- Able to reliably intubate patients with critical airways
- Able to reliably intubate patients using direct laryngoscopy
- Able to reliably intubate patients using video laryngoscopy
- Able to reliably intubate during an emergency situation (e.g. delivery room or code)
- Other:

Please describe the "other" characteristic of ETI competency.

What do you believe is the MINIMUM ETI success rate percentage that should be required of a graduating NPM fellow?

0 100



(Place a mark on the scale above)

Would you be willing to participate in an interview to discuss a more detailed description of your fellowship program's ETI curriculum?

- Yes
- No

Please include your name and email below to be contacted to set up an interview.