



Resuscitation Guidelines in 2020

Updates on the Review of Science Process

Did you ever wonder how the guidelines for neonatal resuscitation are developed? It is a very deliberate process which has evolved since the inception of the program over 30 years ago. Whereas the initial program was based almost entirely on expert opinion, the Neonatal Resuscitation Program (NRP) currently makes recommendations for practice based on the best available scientific evidence regarding specific practices.

The review of scientific evidence is done in a rigorous standard format by the International Liaison Committee on Resuscitation (ILCOR), which is comprised of groups that review evidence for adult, pediatric, and neonatal populations. The Neonatal Life Support (NLS) Task Force includes experts in neonatal resuscitation from around the world (including members of the NRP Steering Committee) and reviews evidence for resuscitation practices specific to resuscitation of newly born infants. Members of the NLS Task Force examine each relevant clinical practice as a PICOST (Population, Intervention, Comparison, Outcome, Study Designs, Time frame) question. Available literature for each of the PICOST questions is reviewed using the Grading of Recommendations Assessment, Development and Evaluations (GRADE) format. The GRADE review is a detailed process that critically evaluates the quality of evidence available. When the review is

completed and everyone agrees on the evaluation, a statement is released in the form of a Consensus on Science with Treatment Recommendations (CoSTR) document. This initial draft document is then posted on the ILCOR CoSTR website (CoSTR.ILCOR.org) asking for comments from the public. After a 2-week comment period, the Task Force considers the comments and makes edits to the CoSTR document if appropriate. A final draft of the CoSTR document is then published on the ILCOR website and ultimately in a medical journal.

Using the scientific reviews that ILCOR has done, the American Heart Association and members of the NRP Steering Committee create neonatal resuscitation guidelines for the United States, making recommendations appropriate for the US system of care and the resources available. Since the scientific evidence for certain practices may not be definitive, the Steering Committee must make recommendations that are the best interpretation of the evidence, knowing that those recommendations may change when science delivers better information. Other councils in various countries around the world similarly use the ILCOR work to develop guidelines and recommendations uniquely suited to the culture and resources of their health systems. The 2015 guidelines are reprinted in the back of the NRP 7th edition textbook.

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**American
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Quick Access to NRP Skills Videos

Seven of the NRP Skills videos that are currently posted in the Instructor Toolkit are now just a click away for NRP instructors, current NRP providers, and those preparing for their NRP provider course. From the NRP Homepage (aap.org/nrp), click NRP Skills Videos under Quick Links and you will be taken directly to the instructional videos. The videos provide step-by-step instruction on topics like CPAP in the Delivery Room, Performing and Assisting with Endotracheal Intubation, Epinephrine and Volume Expanders plus much more. These videos are great refreshers for everyone and can serve as a standardized instructor skill demonstration during your Instructor-led Event. Check them out, and share them with your colleagues and learners!



Attention Instructors!

Extension of NRP Expiration Dates

In light of COVID-19, we want to acknowledge the hard work that you are doing as clinicians right now to serve your patients, their families, your colleagues, and your hospital systems. As you may be called on to serve your roles with flexibility and new challenges, NRP also wants to be flexible to meet your needs. On April 15 we sent out an updated communication (to the one initially sent on March 16) outlining timely recommendations. For those individuals whose NRP expiration date falls in March, April, May, June or July of 2020, the AAP recommends that employers and regulatory bodies consider extending recognition of an NRP card beyond its recommended renewal date, for up to 120 days. However, please know that it is ultimately up to the discretion of employers and regulatory bodies who require current NRP Cards to consider allowing extensions during this time. This extension may be increased, depending on how the COVID-19 public health threat evolves.

Strategies for Teaching During This Time

Teaching NRP Provider Courses:

Learning Station Format for 3-4 Participants

Most teaching hospitals will soon welcome large groups of new pediatric residents who are inexperienced NRP learners in need of an NRP Provider course. It is not unusual for very large groups of new residents to assemble at the beginning of their residency program and take the in-person portion of their NRP Provider course at the same time. This NRP Provider course format may be inadvisable for some time to come.

If you need to provide NRP Provider courses to those who cannot wait, consider teaching small groups of 3-4 learners using the Learning Station format. Ideally, you can teach the course using NRP supplies in the actual clinical setting where resuscitation takes place, or in a conference room using a functional radiant warmer. The Learning Station format means that one instructor stays with the same team of learners at a fully equipped warmer (or simulated warmer on a conference room table if necessary) where skills are practiced in NRP algorithm sequence and incorporated into short practice scenarios as each skill is learned. By building skill upon skill in algorithm sequence, learners are well prepared to pass the Integrated Skills Station (required component of the course) and proceed to Simulation and Debriefing – all of which takes place at the same radiant warmer.

Ideally, new residents should be released from clinical responsibilities to attend their scheduled NRP Provider course immediately before, or at the beginning of a rotation that requires NRP skills. Most NRP Provider courses that use the Learning Station format typically last about 3 hours.

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Strategies for Practicing NRP Skills

Practicing newborn resuscitation skills should occur periodically for all NRP providers. Consider implementing the following strategies to help ensure episodic review and practice.

1 Conduct Spontaneous Practice Sessions

Current NRP providers and those whose Provider course has been deferred this spring or summer will benefit from periodic review and practice of basic NRP skills such as preparing for resuscitation, rapid evaluation (Term? Tone? Breathing?), initial steps of newborn care, and most important, performing face-mask positive-pressure ventilation (PPV) with MR. SOPA steps.

It's easy to load a small cart with a manikin and supplies needed for initial steps and PPV (Figure 2). Choose a quiet time on the unit and approach your colleagues with this opportunity to review the first 2 minutes of resuscitation. The entire practice session may last only 5 minutes, does not separate care providers from patients, and provides valuable review of essential skills.

2 Practice eSim Cases

After successfully completing the NRP Provider course, all providers have access to the eSim cases for the duration of their provider status period. The eSim cases are available by going to your "Completed" tab in your HealthStream account.

The eSim cases are not meant to provide hands-on skills or practice teamwork or communication, but they test an NRP provider's knowledge of the algorithm sequence. The eSim cases are an entertaining way to review the algorithm and receive feedback on critical decision-making.

3 Review the NRP Skills Videos

The NRP skills videos are now available for everyone to view by going to the NRP website (aap.org/nrp) and clicking on NRP Skills Videos in the Quick Links.



Figure 1. A fully equipped radiant warmer allows 1 instructor and 3-4 learners to practice all resuscitation skills, perform short scenarios as skills are learned, perform the Integrated Skills Station, and practice Simulation and Debriefing.



Figure 2. This cart is easy to take to NRP providers on the unit for short periodic practice sessions of skills such as initial steps or PPV with a face-mask and MR. SOPA skills.

New Interim Guidelines

Resuscitation of Patients with Known or Suspected COVID-19

The American Heart Association, in collaboration with numerous organizations including the American Academy of Pediatrics, has created a new scientific statement on interim guidance for resuscitation, including guidelines for delivery room resuscitation of the newborn. This article, from the April 2020 issue of *Circulation*, is available to everyone at doi.org/10.1542/peds.2020-1405. The AHA has also launched a complimentary online course based on these guidelines, which can be found at this [link](#).

Congratulations to the following individuals who received 2019 NRP Grant Awards!

Research Grant

Praveen Chandrasekharan, MD, MS, State University of New York at Buffalo

Effects of Chest Compression in a Neonatal Model of Asphyxia Induced Bradycardia

Young Investigator Award

Srinivasan Mani, MD, State University of New York at Buffalo

Positive Pressure Ventilation Through Laryngeal Mask Airway During Chest Compressions in Cardiac Arrest

NEW! Human Factors or Education Grants

Nathan Sundgren, MD, PhD, Baylor College of Medicine
Optimal Team Size and Roles for the Most Effective Resuscitation

Brenda Law, MD, MSc, University of Alberta

Effect of Additional Monitoring Devices on Healthcare Provider Mental Workload, Visual Attention, and Resuscitation Effectiveness during Neonatal Resuscitation

Heidi Herrick, MD, The Children's Hospital of Philadelphia

Impact of Leader's Visual Attention during Neonatal Tracheal Intubation

Congratulations to our grant awardees!

The Fall/Winter issue of the NRP Instructor Update will include information about the 2021 NRP Grant Program.

Test Your Knowledge NRP Online Exam

Question: What is the preferred method for assessing heart rate during chest compressions?

- (A) Auscultate with a stethoscope (B) Palpate the umbilical cord
(C) Pulse oximeter reading on the right hand or wrist (D) Electronic cardiac (ECG) monitoring

Answer on the back page...

Cover Story continued

Since October 2015 when the last resuscitation guidelines were published and the NRP 7th Edition materials were launched, the ILCOR process has changed. In this new ILCOR evidence review format, CoSTRs (documents that state the latest international consensus on resuscitation science) will become available as the reviews are completed instead of once in five years as was previously done. Questions to review are determined through a systematic process that allows for scanning of the literature for new evidence for relevant practices. The goal of this new process is to enable the release of recommendations in a timely manner when new evidence is available. Ideally this would allow new practices that could improve outcome to be initiated earlier than they would if recommendations were made once in five years. However, the NRP algorithm and recommendations will probably be comprehensively revised every five years unless there is compelling evidence that mandates an earlier change.

Among the recent PICOST questions reviewed by the Neonatal Life Support Task Force and developed into a CoSTR document in 2019 was whether low or high initial oxygen concentration at the beginning of resuscitation would lead to a difference in mortality and other important clinical outcomes in preterm infants (costr.ilcor.org/document/initial-oxygen-concentration-for-preterm-neonatal-resuscitation). This topic was reviewed early in the new process because a large trial comparing initial resuscitation with 21% oxygen to 100% oxygen had recently been published (Oei JL, et al. *Pediatrics*. 2017;139(1):e20161452.) that had the potential to change the overall recommendation from previous ILCOR reviews. A thorough systematic review to answer the PICOST question was performed. The conclusions from this systematic review were that for most outcomes, there was no benefit or harm from lower or higher initial oxygen concentration for starting resuscitation. There was, however, a preference for not exposing additional infants to high oxygen concentrations without a proven benefit of that therapy. Additionally, although 21% and 30% oxygen have not been compared directly in any studies, almost all preterm infants in randomized controlled trials and observational studies receive some supplemental oxygen after birth to reach the recommended oxygen saturation targets. The CoSTR document summarized the finding by stating that the group suggests starting resuscitation with lower concentrations (21%-30% oxygen) in preterm infants. Although this was not a change from the prior recommendation, clinicians could be more reassured that the latest evidence was considered in the most current recommendation.

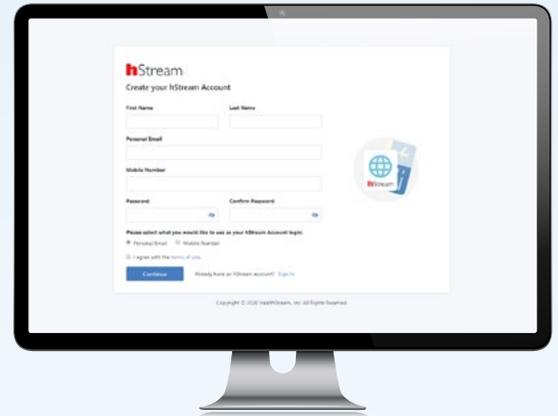
The Neonatal Life Support Task Force has now reviewed several PICOST questions that are available on the CoSTR website. A more comprehensive document with updated recommendations from the American Heart Association and American Academy of Pediatrics is expected to be published by the end of 2020. The NRP will continue to incorporate these recommendations into the educational material of the program on a regular basis and will aim to keep instructors up to date on the latest recommendations. ■

Important News About Online Access

New Global Login ID Replaces Multiple Logins and Passwords

We have addressed one of your top requests to make login to the Learning Management System easier for NRP providers and instructors. We know that multiple logins and passwords have made it difficult to perform tasks like setting up course rosters, performing other administrative tasks and accessing instructor tools.

Starting in May, a new global login ID will be launched. Some users will be prompted to create this new ID with their personal email address and mobile number when accessing NRP courses for the first time after the launch. Others may not see any difference at all, depending on how your institution connects to the NRP system. The image to the right shows what the screen on your computer or device will look like if you need to create the new global ID.



Newly Designed Instructor Toolkit Launches in May

There are many benefits to this new global login ID, including improved security and self-service options.

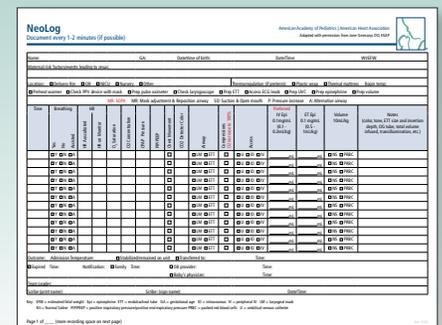
We're most excited about the improvement that will enable instructors to easily access the newly designed NRP Instructor Toolkit (ITK). The new ITK includes better navigation, new multimedia, and clearly designated topic areas designed to better meet instructor needs. We look forward to receiving your feedback on the new design, the latest "What Would You Do" videos, and the additional section titled, "Simulation on a Shoestring."

The goal was to create an updated community where instructors can easily access all of the tools they need to conduct high quality provider courses and simulation events, and to ensure an excellent learning experience for all.



NeoLog Update

NRP instructors and providers are beginning to use the NeoLog as a documentation tool for neonatal resuscitation. The NeoLog is available for use thanks to the permission of Jane Germano, MD, and may not be reproduced as an electronic document; however, you may print your hospital logo on the hard copy document as a form of hospital identification. Please print the NeoLog and use it as a hard copy form, then scan the document into the baby's electronic medical record. Find the NeoLog by going to the launch page of the Instructor Toolkit (ITK) or enter "NeoLog" into the Search box. To learn more about code documentation, view the August 2019 NRP Live webinar. The link to archived NRP Live webinars is located on the launch page of the ITK.





2020 NRP® Current Issues Seminar

Share Your Bright Ideas

Save the date Friday, October 2, 2020 and join us in sunny San Diego for the NRP Current Issues Seminar to be held in conjunction with the 2020 American Academy of Pediatrics (AAP) National Conference and Exhibition (NCE).



This year's session features a dynamic format, including hands-on opportunities, a preview of the upcoming NRP 8th edition, and the popular NRP Live session. NRP Live is an open dialogue and demonstration with NRP Steering Committee members and textbook editors to discuss YOUR questions/challenges related to science, administration, simulation, and/or educational methodology.

The Seminar will also include the second annual NRP Bright Ideas Showcase. The Showcase is an opportunity for NRP instructors to share how they are pioneering changes and using innovative methods to teach NRP in their institutions.

Bright Ideas include anything from innovative cognitive aids, to ideas for improving the quality of NRP courses, to developing QI initiatives pertaining to NRP.

The 2020 NCE will be held October 2 – 6, 2020 at the San Diego Convention Center in San Diego, CA. Registration for the 2020 National Conference will open on June 1, 2020 – please check aapexperience.org!

If you have an **NRP Bright Idea**, we want to hear from you! Accepted submissions will be presented during a poster session as part of the NRP Current Issues Seminar. The submission site is open at this [link](#). We look forward to having you share your innovations with fellow NRP instructors and leaders. For more information regarding the submission process, please visit the NRP website. Bright Ideas are due by Friday, June 12.

The correct answer is D: The electronic cardiac monitor is the preferred method for assessing heart rate during cardiac compressions. During resuscitation, auscultation can be difficult, prolonging the interruption in compressions and potentially giving inaccurate results. Pulse oximetry may not work if the baby's heart rate is low or if the baby has poor perfusion. Palpation of the umbilical cord is less accurate than auscultation and may underestimate the true heart rate. Consider using a cardiac monitor to assess heart rate anytime the baby is non-vigorous and the heart rate is difficult to auscultate or when pulse oximetry does not work.

Do you have questions for the NRP Steering Committee? If you have any questions about resuscitation science, NRP education strategies, Provider course logistics, simulation and debriefing, Quality Improvement issues, or any other topic related to NRP we'd love to hear from you. Your questions are helpful to Steering Committee members and consultants as we consider *Instructor Update* articles, NRP Live topics, content for the next edition of the *Textbook of Neonatal Resuscitation*, and conference topics.

Please submit your questions to lifesupport@aap.org.

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ACKNOWLEDGEMENTS

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