Neonatal Outreach Survey
Atlanta Perinatal Region

A region-wide assessment of opportunities, strengths, learning preferences, and perceptions

April 2021

Collected and compiled by

the Emory Regional Perinatal Center

Neonatal Outreach Program

Children's Healthcare of Atlanta

EMORY UNIVERSITY

Contents

Executive Summary

The Atlanta perinatal region is the largest of Georgia's six perinatal regions in terms of number of counties served, volume of facilities offering childbirth and/or newborn care services, and number of births occurring each year. It is also unique in terms of the structure of the Regional Perinatal Center (RPC) comprising more than one hospital, the large number of level III neonatal care facilities, and its sizeable urban footprint around the Atlanta metro area.

With new staffing in the Emory Neonatal Outreach Program, an essential component of the RPC, a survey was conducted to better understand the current regional landscape. The survey was open between January and February 2021 and all 34 perinatal facilities in the region were invited to participate. The survey explored strengths of the facilities and their communities, barriers to health and education, approaches to certifications, preferences for outreach and education, and feedback on the RPC.

Fifty-two people responded to the survey, representing 31 of the perinatal facilities in the Atlanta region. Their responses yielded valuable insights for shaping the direction of the neonatal outreach program and improving the Regional Perinatal Center's neonatal services overall. Results of the survey and recommendations that follow are contained in this report for the benefit of the neonatal outreach program, the RPC, the Atlanta regional facilities, and others with an interest in these findings.

Background

Perinatal Regionalization in Georgia

Perinatal regionalization is strategy used by Georgia and many other states to improve health outcomes for mothers and babies during the perinatal period—the time leading up to, encompassing, and following childbirth. Regionalization involves two key components: 1) stratifying perinatal care facilities by level of care based on the clinical services and specialization of care offered and 2) the grouping of these facilities into geographic regions for purposes of coordination and collaboration[1]. Within this strategy, every attempt is made to match the risk of maternal, fetal and neonatal patients to a facility within their geographic region with the appropriate level of care, ideally prior to delivery, to promote optimal maternal and infant health care and health outcomes[2].

The State of Georgia is divided into six geographic perinatal regions: Albany, Atlanta, Augusta, Columbus, Macon, and Savannah (see figure 1). Within each region is a Regional Perinatal Center (RPC) designated by the Georgia Department of Public Health according to regional needs, available funding, and current contract requirements. Each RPC is responsible for providing the following core services to their region[3]:

- Coordination of perinatal health care within the region
- Subspecialty care with the ability to manage high-risk and complex perinatal conditions
- Consultation and transport support for patients requiring subspecialty perinatal care
- Outreach and education support to enhance the quality of care in facilities throughout region
- Neuro-developmental follow-up care for neonatal patients at high risk of handicaps
- Coordination with and patient referral for related public health and social services

Regionalization as a strategy acknowledges that the maternal and infant dyad are interwoven, with the health of one having implications on the other. For purposes such as addressing unique risks and interventions, delineating roles, and allowing a structure for funding, the key functions and roles within the RPC are divided into obstetrical and neonatal elements within Georgia.

Atlanta Perinatal Region

The Atlanta perinatal region includes a 39-county area surrounding metro Atlanta and extending north across the entire northern border of the state. The perinatal region currently contains 34 facilities offering labor and delivery services and/or newborn care services. This includes 30 childbirth/delivery hospitals, 3 pediatric hospitals, and 1 free-standing birth center.

The Atlanta region is the largest perinatal region in Georgia in terms of the number of facilities and the number of counties covered. In 2019, the most recent calendar year of available data, 59% of the births

[1] Make perinatal regionalization work for your state. (n.d.). In *National Institute for Children's Health Quality (NICHQ)*. Retrieved from https://www.nichq.org/insight/make-perinatal-regionalization-work-your-state

[2] Regional Perinatal Centers. (2019, September 19). In *Georgia Department of Public Health, Office of Women's Health*. Retrieved from https://dph.georgia.gov/RPC

[3] Georgia Department of Public Health. (2017, May). Core Requirements and Recommended Guidelines for Designated Regional Perinatal Centers

in Georgia occurred in the Atlanta region (74,773 of 126,250)[4]. Similarly, 56% of premature births (delivery at less than 37 weeks gestation) in Georgia took place in the Atlanta region (8,267 of 14,706)[4].

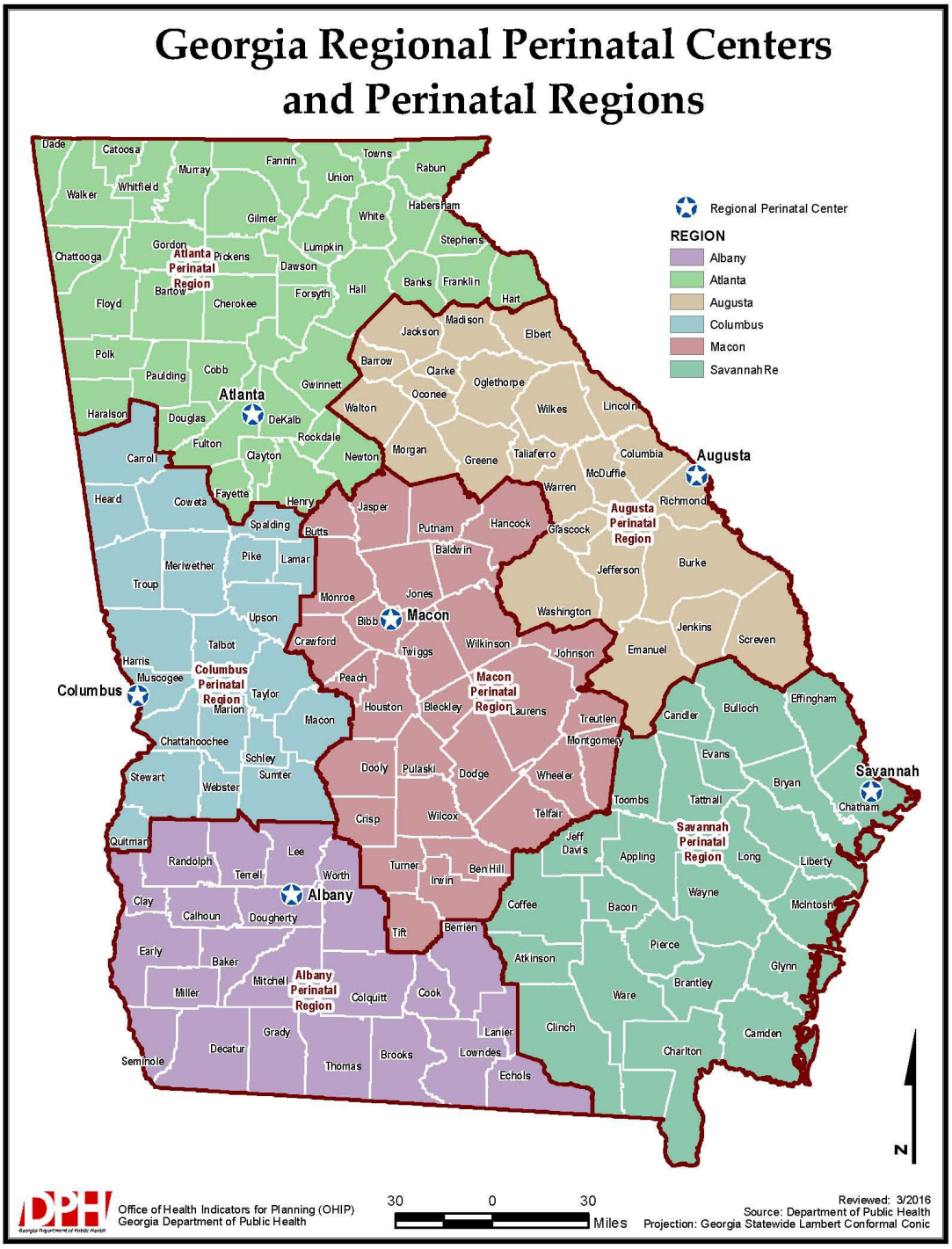


Figure 1: Map of Georgia perinatal regions[3]

[4] Georgia Department of Public Health. (2019). Maternal Child Health - Birth Web Query. In *Online Analytical Statistical Information System*. Retrieved April 30, 2021, from https://oasis.state.ga.us/oasis/webquery/qryBirth.aspx

The Regional Perinatal Center (RPC) within the Atlanta region is Grady Memorial Hospital (maternal and neonatal care) in partnership with Emory University Hospital Midtown (maternal and neonatal care) and Children's Healthcare of Atlanta Egleston Hospital (neonatal care). Emory University School of Medicine faculty, fellows and residents, and clinical staff care for patients across these three hospitals and are interwoven in the RPC care. The RPC of the Atlanta region is therefore known by the Grady RPC, Emory RPC, and Atlanta RPC depending on the context. Of the six regions, Atlanta is unique in this structure; the others are more generally tied to one entity and facility as the RPC.

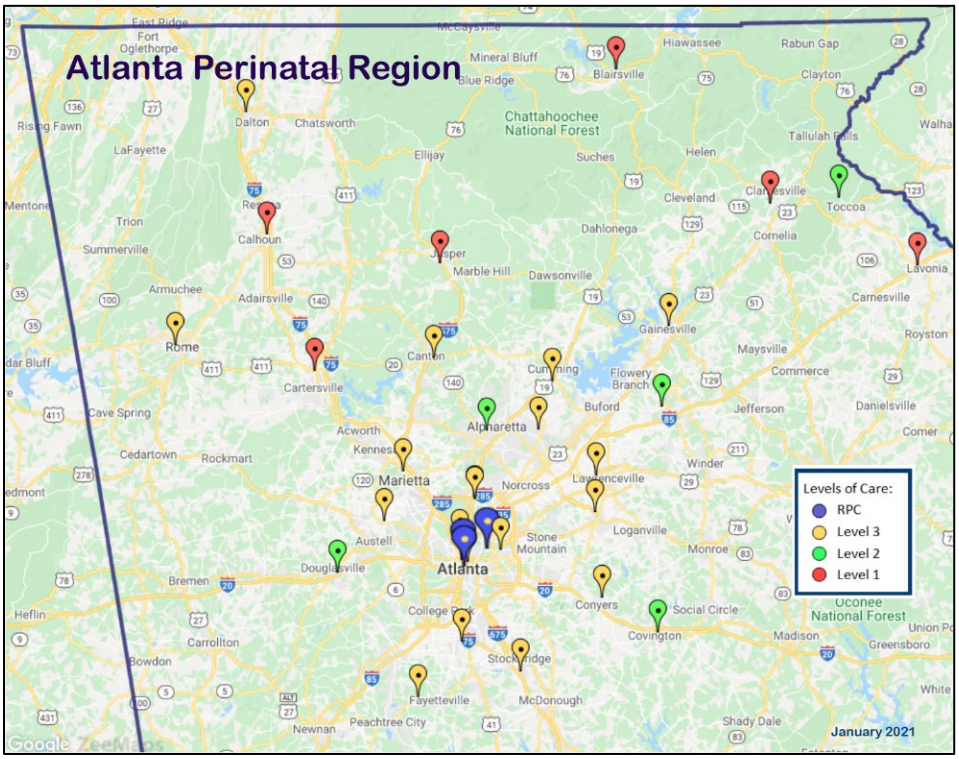


Figure 2: Map of the Atlanta perinatal region

Neonatal Outreach Program

The provision of obstetrical and neonatal outreach, coordination, and educational programming for the region is a core service of each Regional Perinatal Center. Contract requirements specify that each RPC should have both an obstetrical and neonatal outreach coordinator[5]. Outreach coordinators support the facilities within their region by providing relevant educational offerings and resources, supporting quality improvement efforts and the adoption of evidence-based practices, and serving as a liaison between the RPC, regional facilities, the Georgia Department of Public Health, and community partners.

The neonatal outreach program in Atlanta transitioned to new leadership in 2020 after a period of vacancy between 2019-2020. With a new Medical Director of Outreach and a new Outreach Coordinator, the program was fully staffed in Fall 2020. The Emory University School of Medicine Department of Pediatrics welcomed a new Chief of Neonatology in July 2020 as well. In light of these staffing changes, changes in the healthcare landscape over time and also as a result of the COVID-19

[5] Georgia Department of Public Health. (2017, May). Core Requirements and Recommended Guidelines for Designated Regional Perinatal Centers

pandemic, and changes in various regional hospitals and facilities, a needs assessment survey was determined to be a natural starting point for linking with regional contacts and identifying opportunities, assets, preferences, and perceptions from which to build an outreach and education plan that would be relevant and applicable.

Neonatal Outreach Survey

In January 2021, the Emory Neonatal Outreach Program launched the Neonatal Outreach Survey, a needs assessment and preferences survey for the Atlanta perinatal region. The purpose was to learn more about the perinatal region, the barriers and strengths within the various communities, preferences for neonatal outreach and education, and overall perceptions of the RPC. The survey aimed to collect sufficient feedback from which to plan future outreach programming, as well as to illuminate any common threads by location, level of care, or staffing position. It was also hoped that the perceptions of the RPC would serve as a baseline pulse of the various neonatal services considering recent transitions within the RPC and the Emory Division of Neonatology.

Neonatal resuscitation and stabilization certification programs were of interest in designing the survey. The provision of training and certificates for two neonatal education programs has historically been a notable task for outreach programs within Georgia and beyond. The survey focused on the Neonatal Resuscitation Program (NRP) of the American Academy of Pediatrics[6] and American Heart Association and on the S.T.A.B.L.E. Program (a mnemonic based on the six assessment and care modules in the program: Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support)[7]. The courses and models for delivery of the course content have adapted over time, as have the regional perinatal facilities, possibly changing the role of RPC outreach. Online availability of course content (part one of the NRP course is offered almost exclusively online and the complete S.T.A.B.L.E. Program is now available online in a self-paced format), recent consolidation of hospitals into larger hospital systems, and clinical educator roles within many facilities/hospital systems are factors that contribute to delivery of these trainings. A goal of the outreach survey was to understand more about the certification requirements, processes, and resources at each facility, in hopes that future outreach work can be supportive of, relevant to, and non-duplicative of the education work and needs of the region.

[6] American Academy of Pediatrics. (2021). *Neonatal resuscitation program*. Retrieved from https://services.aap.org/en/learning/neonatal-resuscitation-program/

[7] The S.T.A.B.L.E. Program. (2021). *The S.T.A.B.L.E. Program*. Retrieved from https://stableprogram.org/

Methodology

Survey

The 18-question neonatal outreach survey was emailed to all childbirth and neonatal care facilities within the Atlanta perinatal region on January 28, 2021. Invitation links to the survey were emailed through the online survey vendor, Qualtrics, to neonatal contacts at each facility. The primary audience for this initial survey invitation included those serving as perinatal educators, unit managers, medical directors, and practice specialists involved in newborn care and/or neonatal intensive care units (NICUs). Prior to dissemination, the survey was drafted by the neonatal outreach coordinator, piloted within the division of neonatology, modified according to learnings, and approved by leadership. The survey is available for review in the Appendix of this report.

To promote participation by each facility and among different clinical roles, various approaches were used for survey dissemination and reminders. As noted above, the initial survey invitation was sent directly from Qualtrics. Two reminder invitations were subsequently generated within Qualtrics—which automatically filtered out the contacts who had already completed the survey—1 and 2 weeks after the initial invitation. A general link to the survey was shared with regional contacts in a flyer about upcoming events. The outreach coordinator also sent targeted invitations and reminders by email directly to each facility in effort to personalize the invitation and avoid email spam folders. Additional neonatal roles, most often the lead lactation consultants, were included in these personalized email invitation audiences. Within each invitation, recipients were invited to share the generic survey link with others that they felt should participate. It was asked that each participant complete the survey only once per facility they represent.

About 2 weeks in, the outreach coordinator started calling facilities that had not yet been represented by at least one participant. In many cases, the lack of response was tied to outdated contacts. The phone conversations provided an opportunity to update the regional contact directory, to provide an introduction and warm invitation, and to assure the survey was sent to the updated contacts.

After four weeks of data collection, the survey closed at the start of business on February 25th, 2021.

Participation

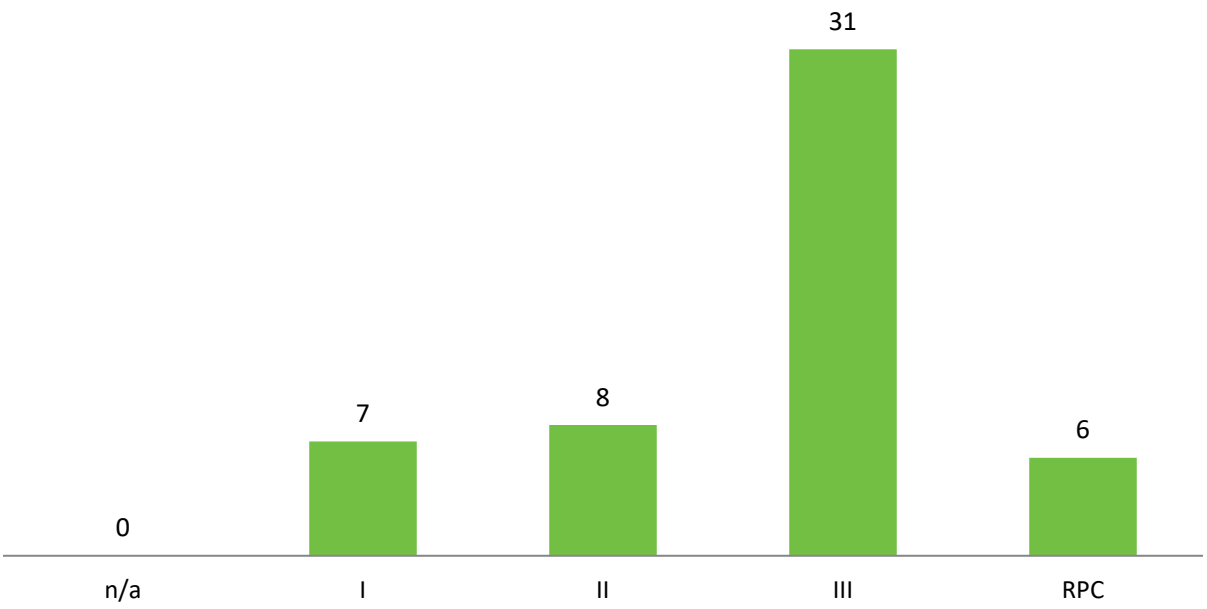
Fifty-two responses were collected across 31 childbirth and neonatal care facilities in the region. This represents 49 complete surveys and 3 surveys that were over 80% completed. There were 14 incomplete surveys that were not included in analysis (each was somewhere between 0-25% complete). Additionally, two participants completed the survey twice, and the duplicate survey of each was removed prior to analysis.

The 52 surveys analyzed represent 52 unique respondents. The response rate for the facilities in the region was 91% (31/34). The response rate for all facilities that are not a part of the Regional Perinatal Center was 90% (28/31). Respondents represented hospitals with neonatal care levels I, II, and III, as well as the three RPC facilities. The region's birth center, which is currently one of only two birth centers in the state, did not participate. Almost half of respondents were best defined as unit managers or directors, 10 were unit/nurse educators, and 18 participants were split evenly across the following roles: physician, clinical staff member (RN, RT, PT, etc.), and other (6 each). No respondent classified themselves as an advance practice provider.

Most responses were from level III hospitals, which are prevalent in the region

All level I, II, and RPC facilities were represented

Response count by neonatal level of care



Responses by level, by facility

n/a		Level I		Level II		Level III		RPC	
Atlanta Birth Ctr	0	AdventHealth Gordon	1	NGMC Braselton	2	CHOA Scottish Rite	3	CHOA Egleston	2
		Cartersville Medical Ctr	1	Piedmont Newton	1	Eastside Medical Ctr	0	Emory Midtown	3
		Habersham Medical Ctr	1	Stephens County	1	Emory Decatur	2	Grady Memorial	1
		Piedmont Mountainside	2	Wellstar Douglas	1	Emory Johns Creek	1		
		St. Mary's Sacred Heart	1	Wellstar N. Fulton	3	Floyd Medical Center	1		
		Union General	1			Hamilton Medical Ctr	3		
						NGMC Gainesville	4		
						Northside Atlanta	1		
						Northside Cherokee	1		
						Northside Forsyth	0		
						Northside Gwinnett	2		
						Piedmont Atlanta	2		
						Piedmont Fayette	3		
						Piedmont Henry	2		
						Piedmont Rockdale	2		
						Southern Regional	1		
						Wellstar AMC	1		
						Wellstar Cobb	1		
						Wellstar Kennestone	1		
n/a responses	0	Level I responses	7	Level II responses	8	Level III responses	31	RPC responses	6

Strengths and limitations

A strength of the neonatal outreach survey was the participation and representation of nearly all facilities in the Atlanta perinatal region. The 91% response rate captures all but three birthing and/or neonatal facilities in the region. All level I (6/6) and level II (5/5) neonatal facilities are represented in the responses. The participation of 89% of level III facilities (17 of 19 facilities, not including the RPC hospitals) was broad enough to get a sense the needs and strengths of these facilities as well.

The survey was limited by the variable number of respondents across facilities. Some facilities were represented by one respondent whereas others had up to four. While it was an asset to collect responses from various roles (e.g. educators, managers, physicians), the variability of respondent roles across sites could bias the findings to some degree. This could be further impacted by department, as some level III responses were from NICU staff, while some level I respondents held roles serving the broader women's and newborn services departments. The Atlanta region is one of two perinatal regions in Georgia with a stand-alone birth center. Unfortunately, the birth center is not represented in this survey.

Findings and Analysis

General information

Results from the survey are laid out in this section, following the same flow as the survey. The survey opened with a short introduction, followed by demographics questions regarding the perinatal facility the respondent was representing, the respondent's role at that facility, and a request for name and email address. The demographics section data allowed for segmenting and analyzing the results by neonatal level of care, by location within or outside of the Atlanta metro area and by role. Notable definitions used in the analysis are:

- Location:
  - "within the metro Atlanta area" includes facilities within the 10 counties whose governments are members of the Atlanta Regional Commission: Cherokee, Clayton, Cobb, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Henry, and Rockdale[8]
  - "outside of the metro Atlanta area" included facilities from among the 29 counties in the Atlanta perinatal region that are not ARC members
- Role:
  - "physician" includes nine respondents who are medical doctors. They may have indicated either "physician" or "unit manager" as the best description of their role
  - "non physician" includes the 43 participants who are not medical doctors

Following the demographics, the survey was broken into four sections. The survey took an average of 9 minutes to complete (range 3.3 to 24.6 minutes, excluding 7 outliers who appear to have had the survey open during an extended period of inactivity). After submission, a brief thank-you message appeared, with a link to the Emory Neonatal Outreach Program's website.

The substance of the survey was grouped into four sections:

- Needs, knowledge gaps and strengths
- Certifications
- Preferences for neonatal outreach and education
- Feedback on the Emory Regional Perinatal Center

Needs, knowledge gaps, and strengths

The first substantive section of the survey inquired about needs, opportunities, and strengths. Respondents were asked to think about their facility and patient population when answering the questions in this section.

Barriers

Participants were asked, "What are the biggest challenges/barriers to newborn/neonatal health among your patient population? *(pick the top 3).*" Over half of the 52 respondents selected "substance use (any/all – illicit, smoking, drinking)" as one of the top 3 barriers to newborn health in their patient population (29 participants). "Late or lack of prenatal care" and "health inequities (race, income,

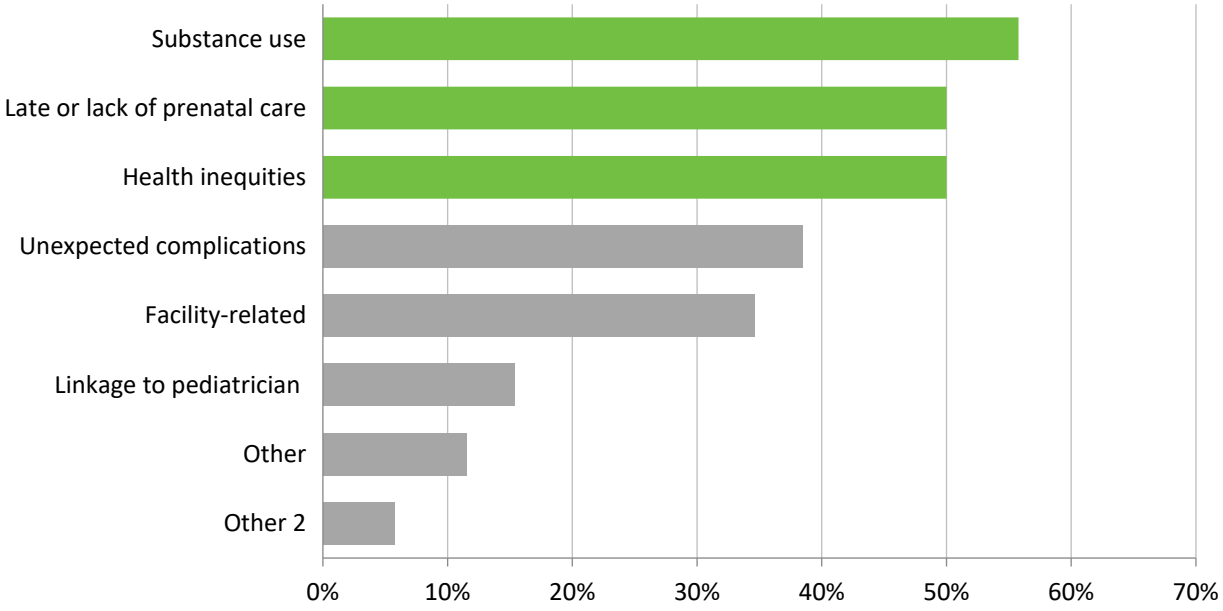
[8] About the Atlanta Regional Commission. (2021). *The Atlanta Regional Commission*. Retrieved from https://atlantaregional.org/about-arc/

insurance status, etc.)" were each selected by 50% (26) of participants. Of note, it is unlikely that the order of the answer selections caused bias in responses, given that the frequency of selection for each answer category differed from the order in which answers were presented.

Substance use, reduced prenatal care & health inequities hinder newborn health

Each of these top three challenges was identified by at least 50% of participants

Percent of respondents selecting each answer category



Respondents from the RPC selected 'unexpected complications' and 'health inequalities' as the primary barriers (100% and 83%, respectively). The RPC had zero selections for 'substance use' or 'other'.

Outside of the metro Atlanta area, 'substance use' was the most-selected barrier of respondents (79%; 15 of 19) and 'Late or lack of prenatal care' was second (63%). The top selections of participants from facilities within metro Atlanta, not including the RPCs, were more split; the most selected barrier was also 'substance use' (52%), with 'health inequities' and 'late or lack of prenatal care' each selected by 48%.

Among Level I facilities, which are all outside the metro area, the most selected barriers were 'late or lack of prenatal care' (86%) and 'substance use' (71%). This group did not have any selections for "timely linkage to pediatrician" or 'other'.

The fill-in responses for "Other" came from mostly level III and a few level II facilities:

Other:

- Childcare for other children
- NICU breastfeeding
- Training resources (simulation labs, equipment, …)
- Unplanned extubation
- Systemic racism
- Resources after discharge (breastfeeding, WIC info, …)

Other 2:

- Implicit bias
- Supply issues
- Transportation

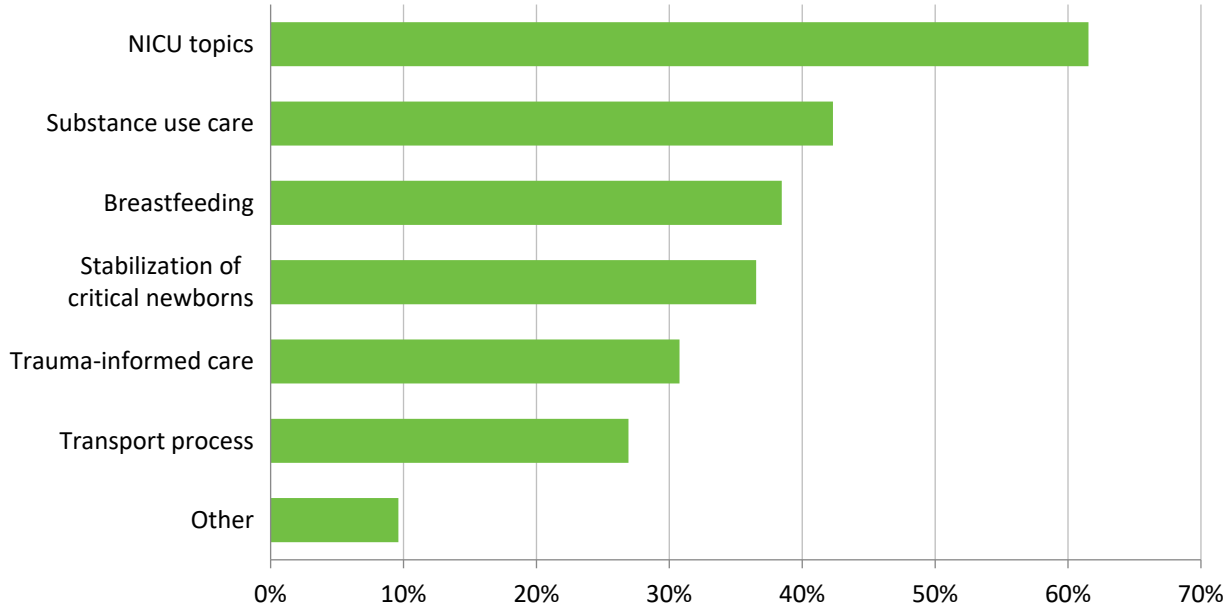
Areas of opportunity

With their facility and patient population in mind, respondents were then asked, "What are areas of opportunity for your facility? *(select all that apply)".* Overall, the most-selected opportunity was "NICU topics (e.g. NEC, feeding intolerance, fluid management, respiration)," chosen by 62% of participants (32 of 52). "Care for infants/families impacted by substance use" was second, with 42% of participants selecting it (10 fewer participants). The gap between the selections that followed from there were much closer.

Neonatal intensive care topics are a common area of opportunity

Substance use care, breastfeeding, & stabilization were each selected by over 1/3 of participants

Percent of respondents selecting each answer category



Segmenting responses by level of care, some other trends emerged. Level III facilities—which comprise the majority of respondents and of hospitals in the region—selected 'NICU topics' as the greatest area of opportunity (68%) and 'substance use care' tying with 'trauma-informed care' for second (42% each). At the RPCs, also level III facilities, 100% selected 'NICU topics' and 50% selected 'breastfeeding' as their top 2. For Level IIs, respondents were evenly split among 4 opportunity areas (50% of respondents selecting each): 'NICU topics', 'breastfeeding', 'stabilization' and 'transport process'. At level I facilities, 'substance use care' and 'stabilization' tied as the top selections by respondents (71.4%), with 'breastfeeding' coming in next with 57% selection.

Assessing the responses by location, each group had one opportunity that was selected by over half of respondents. Among respondents from facilities within the metro Atlanta area, 'NICU topics' was the opportunity that stood out (70%), while among participants from facilities outside of metro Atlanta 'substance use care' (58%) stood out. The largest selection discrepancy between the two location groups was 'trauma-informed care', which was selected by 42% of those inside the metro area (2nd choice) and 10% of those outside the metro area (6th choice).

From the five who selected "other" areas of opportunity, the fill-in responses were:

Level III:
- Communication with referral hospitals
- PICC line certification
- RN-C certification
- Staff engagement
- Teaching critical thinking

Level I:
- Improved discharge education

Strengths

The third question in this section of the survey asked, "What does your facility do well? *(Select up to 2 bright spots)*." Across the 52 participants, the most often selected strengths were "teamwork" (73%) and "patient and family-centered care" (54%). 'Teamwork' was the most often selected strength of participants from facilities within the metro Atlanta area and from level III hospitals. Among facilities outside of the metro area, patient-centeredness was highlighted. 'Patient centeredness' was also the most selected strength of level I and level II facilities.

Following these top two strengths, 14 (27%) selected "employee engagement" and 13 (25%) selected "recent quality improvement effort". Quality efforts, interventions, and other strengths are:

Recent quality improvement effort

- Improved Neonatal Abstinence Syndrome care metrics (x4)
- Increased skin-to-skin care and golden hour
- Decreased central line-associated bloodstream infections
- Decreased intraventricular hemorrhage
- Decreased unplanned extubations
- Hypoglycemia protocol update

Clinical Intervention/ technique

- Developmental care initiatives (cycled lighting, kangaroo care guidelines, immunization process, retinopathy protocols, …)
- Noninvasive neurally adjusted ventilatory assist (NIV-NAVA)
- Care for micro-preemies (born before 26 weeks gestation and/or weighing less than 800 grams)

Other strengths

- Focus on equity initiatives
- Employee engagement (x14)

For participants that selected or described at least one strength, a subsequent question followed, "Would you be willing to share your success(es) with the region if we facilitated a forum for that?" Of the 51 respondents, over a third responded "yes" (35%, 18) and 61% (31) responded "maybe". Two respondents declined to share, though there was no opportunity for them to share a reason.

Certifications

In the next section, respondents were asked to describe their facility's approach to two national certification programs for clinical staff working with newborns. Specifically, the survey inquired about the Neonatal Resuscitation Program (NRP) and the S.T.A.B.L.E. Program (Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support). Questions explored whether certifications were required and how staff were supported to keep up with the certification.

Certification requirements

NRP: All but one facility represented in the survey require NRP certification for all or some clinical staff working with newborns. Thirty of the thirty-one participating facilities (97%) noted that NRP is a requirement. The other facility said that NRP was preferred but not required. At one site, the two respondents were split with one selecting 'required' and the other selecting 'no preference'. At all other facilities with multiple respondents, the respondents' selections agreed.

97% of facilities in the region require NRP certification

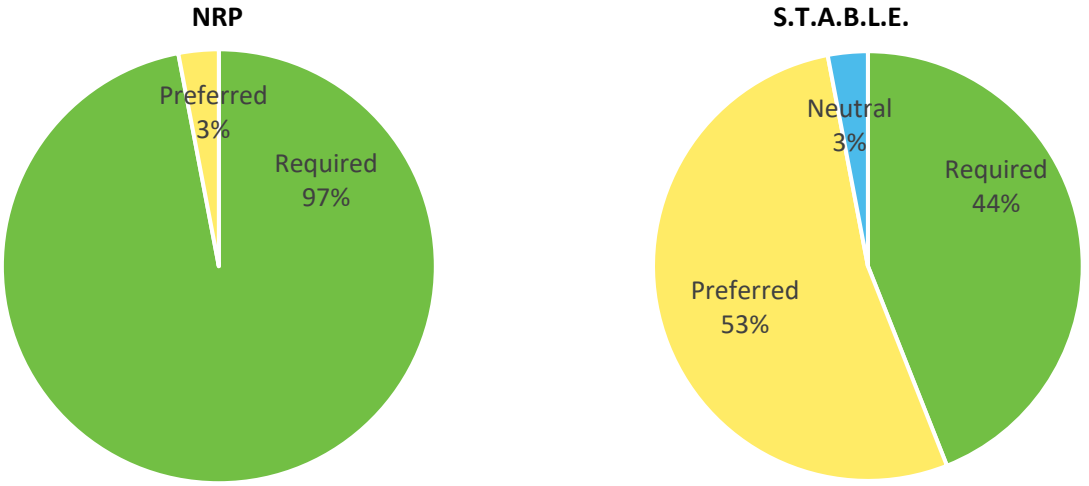
S.T.A.B.L.E.: The approach to S.T.A.B.L.E. certification appears to be more varied than for NRP. Certification is required for some or all clinical staff who care for newborns in 44% of the 31 facilities, while 53% of the facilities prefer certification but do not require it. One facility (3%) had no preference.

Interestingly, among the 14 facilities that had more than one respondent, 5 facilities (36%) had differing answers among their respondents as to the preference for S.T.A.B.L.E. certification. In cases where responses varied, analysis erred towards 'required'. The variance in answers among colleagues at the same facility may suggest that there are different requirements by role, especially where the physicians and advanced practice providers are staffed through an external agency, and/or variances across perinatal units. It could also shed light on facilities where the policy and general practice are not aligned to some degree. Future versions of the survey should validate wording of this question and consider if additional clarifying questions would be useful.

Nearly all facilities require NRP certification, less than ½ require S.T.A.B.L.E.

Facilities recognize a value in both certifications for clinical staff working with newborns

Percent of facilities taking each stance (required, preferred, no preference)



Training and certification

The certification section subsequently inquired about the delivery method(s) of certification. Participants were asked, "For staff required or preferred to have certification, how is that training typically provided? *(select all that apply, including your pre-COVID approach)".* Facilities identifying more than one training method are counted accordingly for each method used.

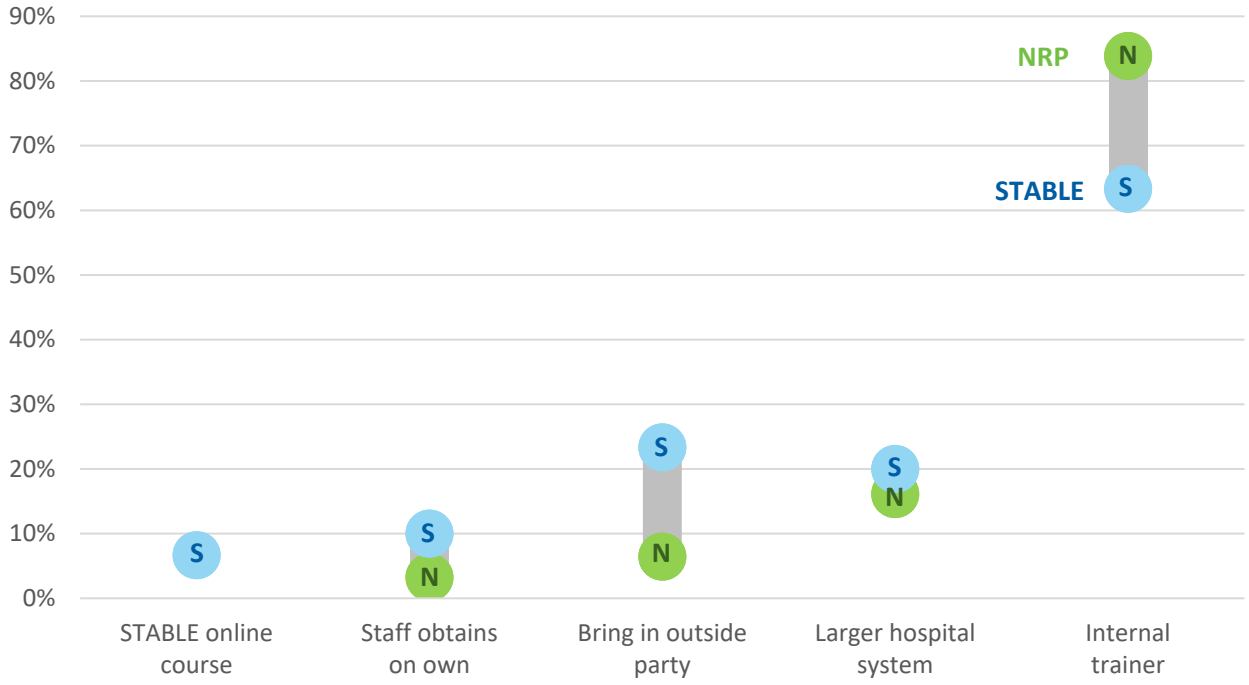
NRP: All participating facilities identified that NRP certification was either preferred or required for at least some clinical staff working with newborns, as presented above. Of these 31 facilities, the majority use an internal educator (26, 84%). A smaller number of sites (5, 16%) use an educator within their larger hospital system. Two facilities—AdventHealth Gordon and Habersham Medical Center—bring in external parties for NRP training and certification (6%). Included in these counts are two facilities that selected both 'internal trainer' and 'larger system' and one facility (3%) that selected that 'staff member must obtain on own' in addition to 'internal trainer'.

S.T.A.B.L.E.: As noted on the prior page, 30 facilities indicated that the S.T.A.B.L.E. Program was either preferred or required. Like the requirement for certification, the delivery method(s) for training were more varied than for NRP. This may be in part due to a smaller pool of instructers, cost, awareness, course length, and/or other factors. A majority of the facilities, 19 of 30 (63%), use an internal educator. Seven facilities (23%) bring in an outside party to train (1 also uses an internal trainer). Six facilities (20%) use an educator within their larger hospital system (2 of these 6 also use an internal trainer). 'Staff member must obtain on own' was selected by three facilities; once uniquely and twice with other selections. The online course through HealthStream was selected by 2 facilities, which each also have an internal trainer. The online modality is a newer offering of the S.T.A.B.L.E. Program, launched in 2020.

Most facilities have internal capacity for NRP training

Training sources for S.T.A.B.L.E. are more varied.

By certification, percent of facilities utilizing each training approach



AdventHealth Gordon and Habersham Medical Center each bring in an outside party to train for both certifications. Union General and St. Mary's Sacred Heart, also level I facilities, provide NRP through an internal trainer and bring in an outside party to teach S.T.A.B.L.E. Outside parties used for training include Georgia regional perinatal outreach coordinators, Southeast Tennessee Regional Perinatal Center (Erlanger Health System) outreach coordinators, and educators from Northeast Georgia Medical Center in Gainesville and Northside Gwinnett Hospital. The other level I facilities, Cartersville Medical Center and Piedmont Mountainside provide NRP internally and S.T.A.B.L.E. through their larger health systems (HCA Healthcare and Piedmont Healthcare, respectively). Stephen's County Hospital and Emory Midtown both use outside parties for S.T.A.B.L.E. while providing NRP internally. Stephen's County, a level II that is not associated with a larger health system, typically uses a regional outreach coordinator while Emory Midtown uses a member of Emory's faculty outside of her typical role for this training.

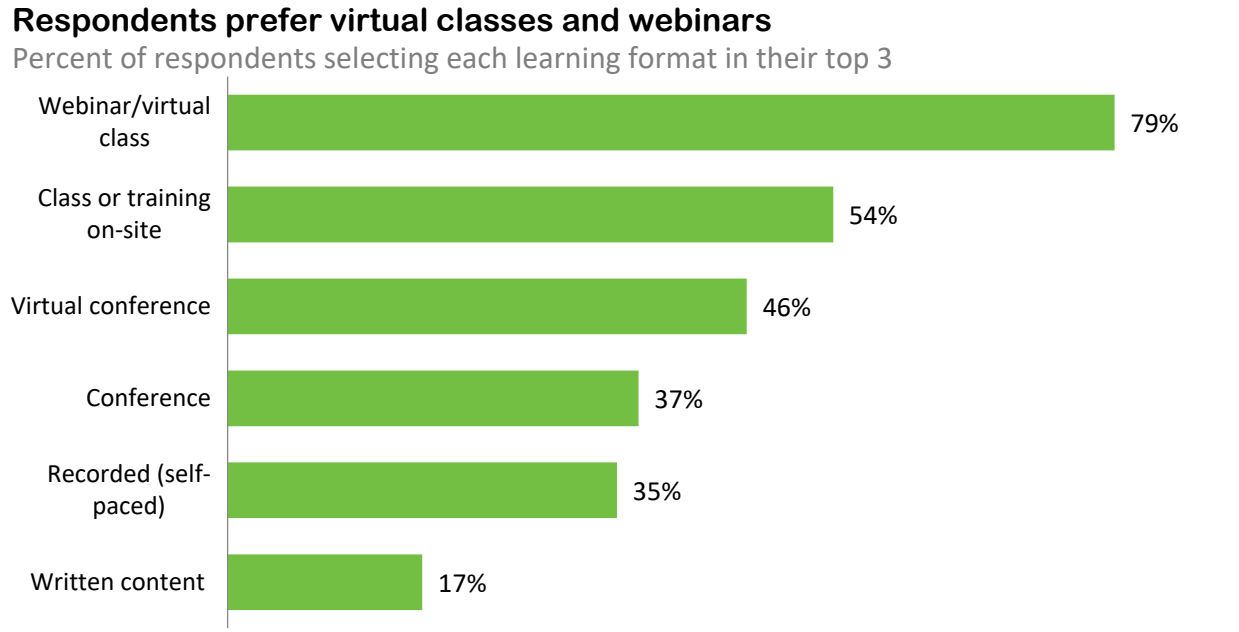
These responses tie to a question in the next section of the survey that inquired about top three preferences for what the RPC could offer. In that question, 6 facilities selected 'NRP/S.T.A.B.L.E. courses' in their top three. These included four level I facilities—the same as those indicating the use of an external trainer—and two level II facilities—Stephen's County and Wellstar Douglas Hospitals.

Preferences for Neonatal Outreach and Education

In the third section of the survey, questions focused on what participants would like the Emory Regional Perinatal Center to offer. Areas explored were format, content, and engagement with digital platforms.

Preferred formats

As part of the section on preferences for neonatal outreach, the survey inquired about preferences in approach. Respondents were asked, "For offerings arranged by the RPC, what formats most appeal to your facility? *(Choose up to 3)*". By far, "webinar/ virtual class" was the most popular, selected by 41 of the 52 participants (79%). "Class or training offered on-site" and "virtual conference", respectively, were the 2nd and 3rd most selected formats across all respondents.



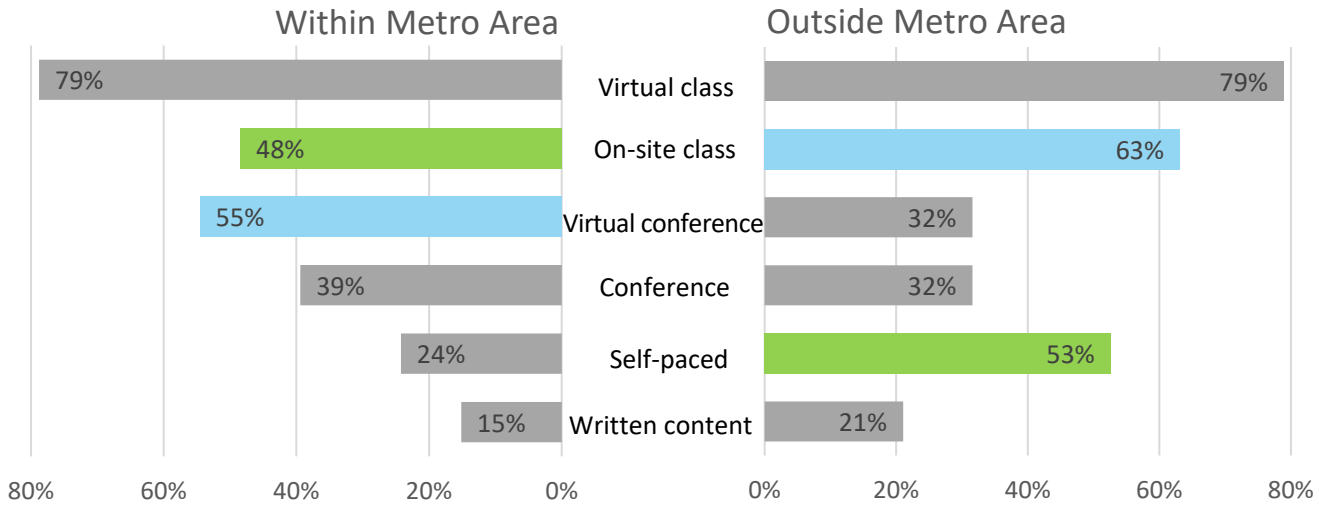
Exploring the data further, 'virtual class' was the most selected answer regardless of the level of care, location within or outside of the metro area, and whether the respondent was a physician. The second and third most selected formats were much more varied across different groups of respondents.

The second-most selected answer overall, 'on-site class', was also the clear second choice of level I facilities and the other facilities outside of the Atlanta metro area. 'Virtual conference' tied for second with 'on-site class' for level II and level III facilities (including the RPC sites).

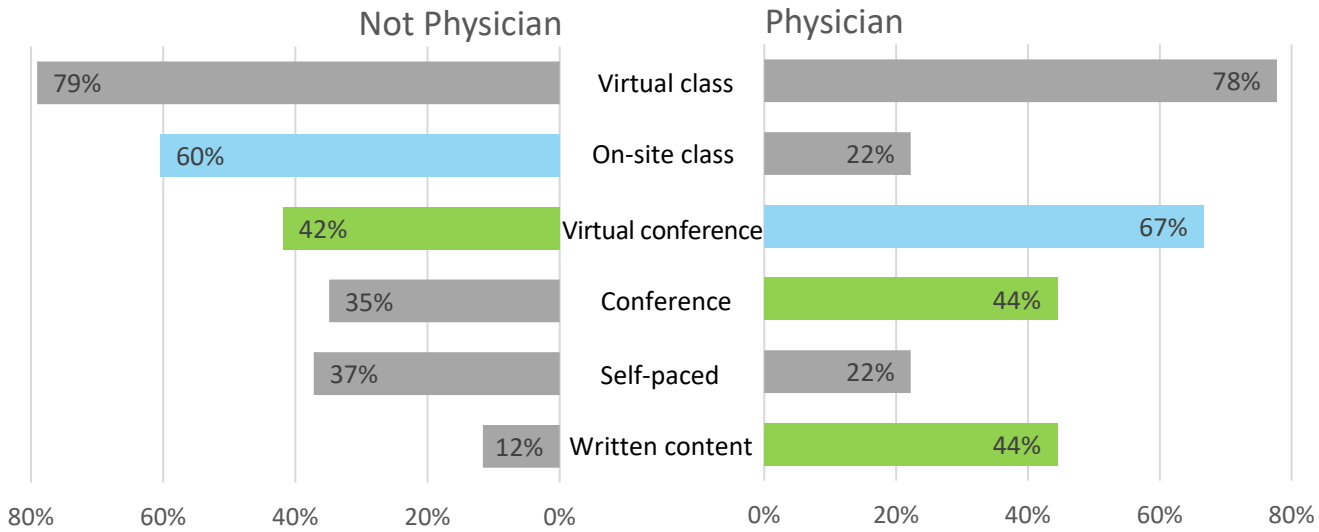
Format preference also varied notably between physician (9) and non-physician (43) respondents. While 'virtual class' was the preference among both groups (78% and 79%, respectively), 'virtual conference' was the second-most selected by physicians (67%), followed by a tie between 'written content' and 'conference' (44%). In contrast, 'on-site class' (60%) and 'virtual conference' (42%) collected the 2nd and 3rd highest percent of responses by those who were not physicians.

Webinar was the preferred format overall, while 2nd and 3rd choices varied across subgroups

By their facility's location, percent of respondents selecting each learning format in their top 3



By role, as a physician or not, percent of respondents selecting each learning format in their top 3



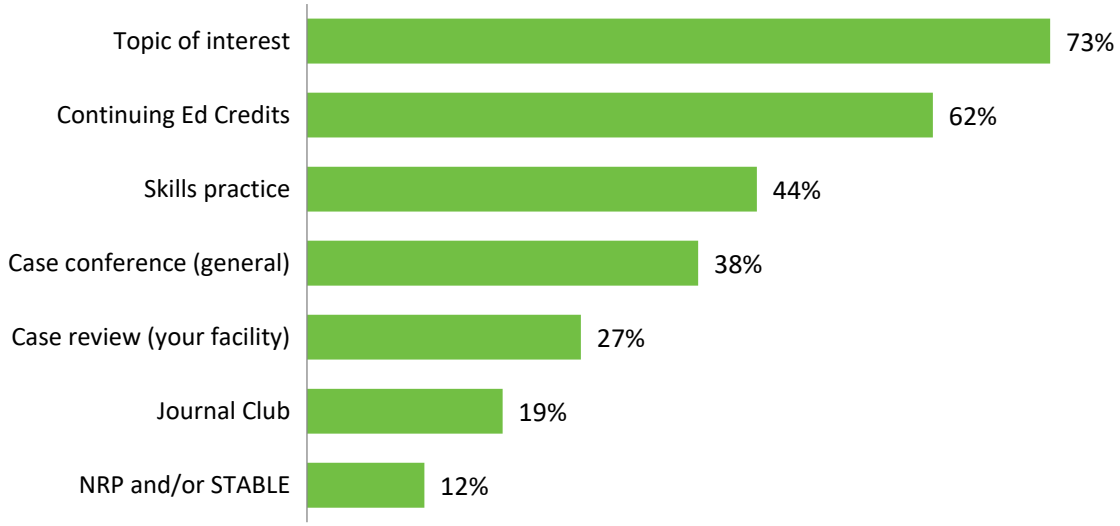
What would you like to see offered?

The next question inquired about preferred learning opportunities. Respondents were asked, "What would you like to see offered? *(Choose up to 3)*". Out of the 52 total respondents, the top 3 learning opportunities selected were "training on topic of interest" (38), followed by "ability to earn continuing education credits" (32), and then by "Skills practice (skills lab, simulations, drills...)" (23).

Most participants are interested in learning about pertinent topics

The ability to earn continuing education credits also has great appeal

Percent of respondents selecting each learning opportunity in their top 3



Segmenting the responses by geographic location, both within and outside the metro Atlanta area groupings had the same top 4 selections as the overall totals in the graph above. Beyond that, over a third of respondents outside of the metro area desired 'case review or transport review (internal)' (37%), which this was selected by only 21% of respondents inside the metro area.

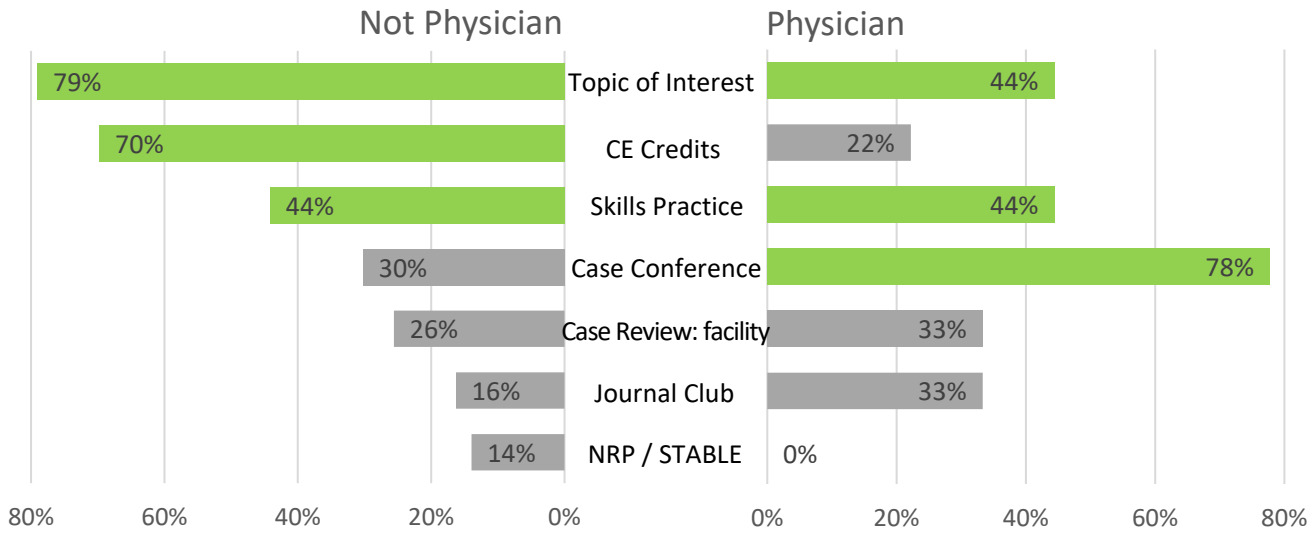
Filtering by level of care, level II, III, and RPCs followed the overall pattern with clear top two selections of 'training on topic of interest' and 'continuing education'. In contrast to the aggregated results, the top selections of level I facilities were 'skills practice' (5 of 7; 71%) followed by a tie between 'NRP and/or STABLE' and "Case review or transport review (oriented to your facility)" (4 of 7, 57%).

Skills practice
was the top choice of Level I facilities

A notable difference was present in the frequency of selections between physician and non-physician respondents. Non-physicians followed the overall trends for all selections. However, the top choice of outreach offering among physicians was 'case conference (general)', with 78% of the 9 physician respondents selecting this choice compared to 30% of non-physician respondents (statistically significant relationship). Whereas 'continuing education' was the second choice overall and among non-physicians, only one physician selected it as a priority. No physicians selected NRP/STABLE courses.

Physicians prefer case conferences more than other participants

By role, as a physician or not, percent of respondents selecting each opportunity in their top 3



Qualitative comments on outreach

Next in the survey came an opportunity to elaborate on responses to the prior two questions and to share additional requests. The question prompt: "Use this box to elaborate further and/or share additional wishes for outreach", was followed by a comment box with no character limit. Twelve respondents provided a response, with comments from 11 reflected here and one reclassified into the following section with feedback about the RPC. Response comments included various topics of interest was well as tangible offerings that would be appreciated. Disseminating best practice and providing NICU-oriented trainings were repeated by 2 or more respondents.

Wishes for outreach (**bold** responses were shared by 2 or more respondents):

Topics

- **Best practice(s)**
- Sub-specialty practice updates
- Newborn complications
- **NICU education in general** and including:
  - Neonatal abstinence syndrome
  - Orogastric feeds
  - Umbilical catheter securing, management
- Neonatal abstinence syndrome & utilization of Finnegan scoring

Offerings

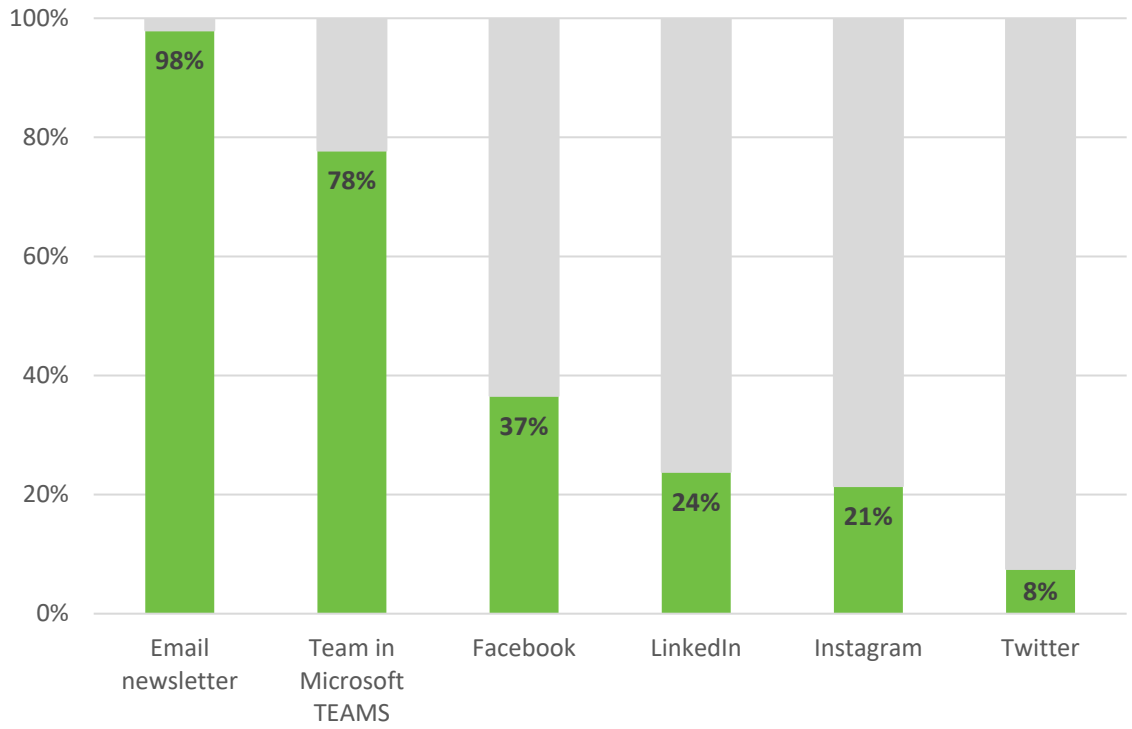
- Virtual journal club
- Assistance with improvement projects
- Policy and procedures
- Educational materials for families
- Certifications: STABLE, PICC, RN-C
- NICU-specific conferences
- Didactic training for new neonatal nurses

Digital platforms

To close out the section on preferences for outreach and education, participants were queried on digital engagement. The question asked, "Would you use these digital platforms for regional news/updates?" Hands down, respondents were receptive to an email newsletter. A "team" in Microsoft teams was also favorable, with the majority (78%) responding positively. Most participants did not envision themselves using social media platforms for regional perinatal news.

An email newsletter is the best way to digitally engage with respondents

Percent of respondents indicating that they would use each platform for regional news



Feedback on the RPC

The final section of the survey asked for feedback on the Emory Regional Perinatal Center. The Emory RPC was defined at the beginning of this section as including Atlanta RPC facilities staffed by the Emory University Division of Neonatology (Grady, Emory Midtown, & CHOA Egleston), as a reminder to participants. This section asked for quantitative feedback through ranking of the various RPC components as well as qualitative feedback through three open-ended questions.

Components rank

Participants were asked, "What is your current level of satisfaction with the following RPC components?". A Likert scale presented choices of extremely satisfied, somewhat satisfied, neither satisfied or dissatisfied, somewhat dissatisfied, and extremely dissatisfied for each of four components: Neonatal transport, clinical care, outreach and education, and Developmental Progress Clinic. Over half of the respondents demonstrated satisfaction with neonatal transport and with the clinical care provided, with over two-thirds of the satisfied responses being 'extremely satisfied'. For Outreach and

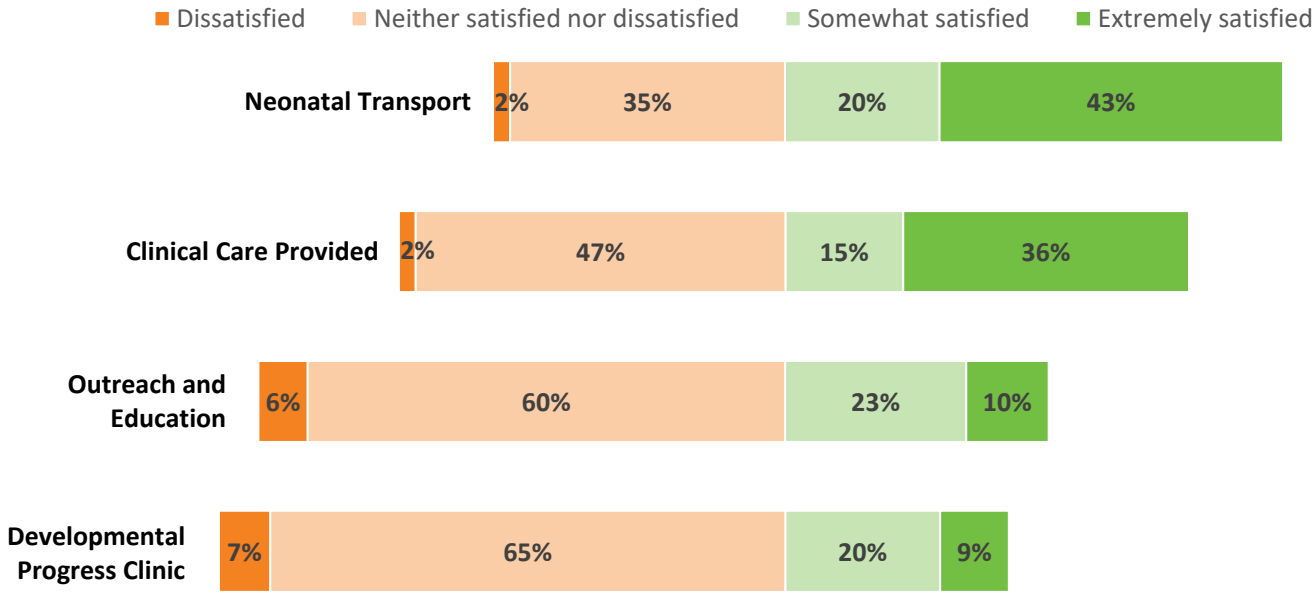
the Developmental Progress Clinic, more respondents were satisfied than were dissatisfied, though most responses were neutral.

Only one of 48 respondents selected 'somewhat dissatisfied', which was in relation to the Developmental Progress Clinic. 'Extremely dissatisfied' was selected seven times; between 1 and 3 times for each of the 4 RPC components. With the small sum of eight 'dissatisfied' responses across all components, the 'somewhat dissatisfied' and 'extremely dissatisfied' categories are combined as 'dissatisfied' in further analysis. The eight dissatisfied responses came from five unique respondents; one respondent selected 'extremely dissatisfied' for each component. Qualitative feedback attributed with those who had one or more 'dissatisfied' ranking included requests to: improve communication with large hospital systems, have more neonatal-based information available as a resource, provide relevant education, provide information back to referring physicians, and increase access to the Developmental Progress Clinic. Further detail of the qualitative feedback follows.

Most participants are satisfied with transport services and clinical care

Perceptions of Outreach and the Developmental Progress Clinic are mostly neutral

Ranking of each RPC component by percent of respondents



Qualitative Feedback

Respondents were asked three final qualitative questions to wrap up the survey. All were open-ended questions with essay text box response fields. There was no minimum or maximum on the response lengths. The questions asked were "What is one thing the RPC is doing well", "What is one thing the RPC could improve?", and "Any additional comments or feedback?".

Common themes emerged among responses: Communication and Collaboration, Outreach and Education, Clinical Care, Transport team, and Developmental Progress Clinic. Feedback by theme is presented in the following table. Responses repeated by more than one participant are indicated with the number of respondents in parentheses. If a response crossed themes, it is recorded by each theme.

Theme	Things the RPC is doing well	Things the RPC could improve
Communication & Collaboration	• Involved with the region • This survey • Communication with participants & hospital teams (x2) • Connecting to the community • Communicating COVID practices	• Regular updates/communication • Communication with large hospital systems, ensuring key stakeholders are included • Stability of support positions & avoid interruptions without notice • More presence in the field • More collaborative practice • Team/multidisciplinary approach • Very limited relationship with RPC; interested in what they offer

Outreach & Education	• Communication with participants
	• Outreach to the regional NICUs
	• Outreach with educational offerings
	• Outreach
	  ○ Virtual breastfeeding conference
	  ○ Neonatology conference is always well received
	  ○ Variety of topics/resources available
	  ○ Reaching out and educating staff of affiliate hospitals
	  ○ Improving the alignment of perinatal care
		• Outreach, training & education relevant to my facility (x4)
		• More neonatal based information to be available as a resource
		• Offer critical care classes for our staff to attend; in person or virtual
		• Assist with:
		  ○ Addressing current clinical concerns and identifying realistic improvement pathways
		  ○ Didactic education for novice/ graduate neonatal nurses
		• Release dates for education sooner

Clinical Care	• Clinical care • Improving perinatal care alignment • Ensuring neonates get the higher level of care they need	

Transport team	• Transportation of babies (x3)
	• Transport is only interaction with RPC
	• Ensuring neonates get the higher level of care they need
		• Provide feedback (x3)
		  ○ Updates on babies transported
		  ○ Positives or opportunities for the team
		• Transport response time (x2)

Developmental Progress Clinic		• Developmental Progress Clinic • More options/appointments for Developmental Progress clinics
Other	• Not applicable (x3) • Not sure – the RPC does not seem to be involved with my health system • Transport is only interaction with RPC • Have not interacted with RPC • I am not sure, honestly. I think that we are getting simulation equipment through RPC. That is great.	• Not applicable (x2) • I'm not certain; things are greatly impacted due to COVID

It is noteworthy that several respondents were not sure about the roles of the RPC and the interactions between their facilities and the RPC. In response to the question about things the RPC is doing well, one respondent referenced getting simulation equipment through the RPC; however, the simulation equipment likely came through the Georgia Department of Public Health (DPH), directly or through the Georgia Perinatal Quality Collaborative (GaPQC). This could suggest some confusion not only relating to the role of the RPC, but also how the RPC relates to DPH and GaPQC.

The final question, which asked, "Any additional comments or feedback?", was completed by 12 participants. Of these, there were two "Thank you" responses and five responses indicating no further feedback ('n/a', 'no'). One respondent indicated being new to the job and unable to provide any good or bad feedback. A response about the provision of neonatal abstinence training was moved to the prior section on additional requests for outreach.

Three respondents had suggestions of resources that they would like the RPC to share. The requests were to please share new clinical guidelines, regional best practices, and please share updates with referring physicians. This third request included a note that, "Getting outcome information [on transferred infants] is painstaking".

Upon completing this final question, the survey was complete, and a page appeared with a thank-you note and a link to the website for the Emory Neonatal Outreach Program.

Recommendations

General

The survey yielded valuable feedback from across the Atlanta perinatal region that can help shape the Emory Neonatal Outreach Program and the RPC overall. Conducting a needs assessment and perception survey routinely, such as every two to three years, will help the RPC monitor for relevance of programming and improvement in perceptions without being too burdensome on participants.

An overarching recommendation is to better define the Emory Regional Perinatal Center, elucidating its roles and components, while also distinguishing the RPC from the Georgia Department of Public Health (DPH). Certainly, the RPC and DPH work is synergistic, but it would provide helpful clarity to establish the unique role and purpose of the RPC. Similarly, charting a clear pathway for communication between the Emory RPC and the Atlanta regional facilities and among regional facilities would be beneficial and may help alleviate role confusion.

Neonatal Outreach Program

Communication and coordination

The neonatal outreach program is positioned to serve as a link between the RPC and the regional facilities, to connect regional facilities to one another, and to facilitate relationships between the regional facilities and the DPH, community agencies, and others. The survey found that there was a lack of clarity around the roles of the RPC, the relation of the RPC to various hospitals in the region, and distinctions between the RPC and DPH. Contributing factors include transitions within the RPC outreach program and transitions at the facilities themselves, including staffing changes and hospital mergers and acquisitions.

Suggestions to strengthen communication and coordination include establishing clear communication pathway(s) and creating a clear brand identity for the RPC. Strategies to establish clear communication could include: creation of a regular region-wide email newsletter for the Atlanta region; routine communication between the outreach coordinator and the RPCs to build rapport, keep contact directories current, and answer questions; and open doors of communication within the Emory Division of Neonatology for the outreach program to report feedback from the region. Most respondents affirmed that they would engage with an email newsletter and this could be one avenue for communicating updates, sharing best practices, and highlighting success. A common RPC mission statement, logo, descriptive website, and other brand-identity strategies could be useful and are not currently in place. These two strategies work together, as a newsletter can be used to help spread brand-identity, and the brand-identity will help reinforce the value and credibility of a newsletter.

Educational offerings

A multifaceted approach to educational offerings will allow the neonatal outreach program to provide relevant training to the regional facilities. Preferences and priorities for training varied among the different neonatal levels, locations, and clinical roles. With the variance, some common themes arose that can be used as a jumping off point for prioritizing and planning outreach programs. Web-based trainings and conferences can be utilized and may improve access—both on the hospital end such as for nightshift and off-duty colleagues and on the RPC end in terms of the accessibility of content experts. Providing continuing education credits for these is likely to increase the appeal and participation. There is a role for and interest in on-site trainings, particularly for skills practice and simulations.

In order to formulate and implement a diverse training approach, creating an education plan based on survey results, recent neonatal outcomes and health indicators, and priorities of DPH is a useful next step. Most of this information has already been pulled together and taking the step to organize and plan will help facilitate smooth implementation that will also serve a framework to guide educational offerings moving forward.

Certifications

The provision of training and certifications for the Neonatal Resuscitation Program and S.T.A.B.L.E. Programs have historically been a part of the outreach program role. These programs continue to provide valuable training on crisis intervention skills, which is noted by the large proportion of hospitals that require NRP and prefer or require S.T.A.B.L.E. With the prominence of level III neonatal facilities and hospital systems with level III facilities in the Atlanta region, there is capacity within the majority of hospitals to provide NRP and S.T.A.B.L.E. either in-house or within the larger hospital system. The online presence of each program is also expected to increase. The S.T.A.B.L.E. Program hosted a webinar on April 28th in conjunction with HealthStream to highlight their e-learning course, new online subscription references, and new smartphone application.

Results of the survey reflect that there are topics more pressing to most sites in the region than NRP and S.T.A.B.L.E. in terms of the RPC offerings. It will be important not to duplicate services already offered by the hospitals and to create opportunities for the learnings they are seeking. However, there is a small number of hospitals that do not have one or both programs available, for which the outreach program can create links between these facilities (primarily level I and those outside of major hospital systems) and certified instructors in the region and/or online options in a cost effective manner.

RPC Services

There is room to improve the awareness and level of satisfaction around each of the RPC services. The neonatal transport team and the clinical care provided have the greatest level of satisfaction at this baseline, but each still have over a third of respondents feeling 'neither satisfied nor dissatisfied'. Improving communication and messaging in general will likely positively impact perceptions of all RPC components. By service line, some strategies to enhance satisfaction are:

- **Transport team:** Provide information about response time (trackable over time) to the region and increase awareness of the transport process (through website, flyer, within a newsletter, etc.). Establish a clear and consistent communication pathway for feedback to the originating site, sharing positives and/or room for improvement.
- **Clinical care:** Create a consistent and coordinated approach to sharing the outcomes of neonates transferred from within the region with the referring providers/care team. Share evidenced-based strategies, policies and procedures, and resources with the region.
- **Outreach:** Most of the non-positive feedback was tied to the vacancy in programming. Having this programmed staffed and running, coordinating RPC activities, supporting communication pathways, and offering educational opportunities should improve perceptions of outreach.
- **Developmental Progress Clinic:** A strategy for improved perception is to update and distribute promotional materials geared towards two audiences—the babies' caregivers and the regional facilities. For clinical teams, it will help to highlight patient eligibility, referral process, and current wait times. Also consider expanding hours and appointment availability, as well as

strategies to support those outside of the metro Atlanta area (e.g. telehealth, coordinated scheduling with other specialists). Provide patient updates to their primary care pediatricians.

In the liaison role, the neonatal outreach program can help communicate updates, changes, and requests from each service line back to the regional facilities and can be used as a resource to help unify services. Reassessing the perceived satisfaction at routine internals as part of the needs assessment process will help identify if improvement is made.

Conclusion

The Emory Neonatal Outreach Program is eager to support the Atlanta perinatal region in improving the health of babies and their families. The outreach survey was an initial step to understand the needs of our communities and facilities, strengths and resources that are present, desires and preferences for outreach, and current perceptions, directly from the regional facilities. Thanks to participants from nearly all perinatal facilities in the region, the feedback that was gleaned will help shape, plan, and implement programming moving forward. The outreach program will build on this foundation of insights from the regional facilities and will stay open and available for ongoing feedback and opportunities in the next steps of building and growing the program.

Thank you for reading this report. Please direct questions and comments to Kim Case, Emory Neonatal Outreach Coordinator, at kim.case@emory.edu.

Appendix

2021 Regional Neonatal Needs Assessment

We are listening!

Hello from the Neonatal Outreach Program of your Regional Perinatal Center (RPC)! Tasked by the Georgia Department of Health to offer education and support to perinatal providers and teams across Atlanta and north Georgia, we aim to create programming that will be useful to you. Your responses will help us plan and tailor our program going forward.

The survey covers needs & strengths, certifications, outreach preferences, and general feedback about the RPC. Aggregated results and updated offerings will be shared after analysis. Responses from multiple team members within each facility are encouraged!

Please help shape the future of your Neonatal Outreach Program by taking **5-10 minutes** to provide feedback!

Demographic information
This will be used to help us tailor programming to your site, update our directory, and assure that you receive a copy of the results.

What perinatal facility do you represent? *(select from list)*

▼ List of 34 regional perinatal facilities

What best describes your role:

▼ Unit Manager or Director
Physician
Advanced practice provider (NNP, PA)
Unit Educator/Nurse Educator
Clinical staff member (RN, RT, PT, etc)
Other

Please share your contact information:

- ○ Name: _____
- ○ Email address: _____

Needs, knowledge gaps, and strengths

Please think about your facility and patient population in answering this page.

What are the biggest challenges/barriers to newborn/neonatal health among your patient population? *(Pick the top 3)*

- ☐ Health inequities (race, income, insurance status, etc)
- ☐ Late or lack of prenatal care
- ☐ Timely linkage to pediatrician care after discharge
- ☐ Substance use (any/all - illicit, smoking, drinking)
- ☐ Unexpected complications
- ☐ Facility-related (e.g. turnover, inexperience, workflow issues, equipment)
- ☐ Other: _____
- ☐ Other 2: _____

What are areas of opportunity for your facility? *(Select all that apply)*

- ☐ Stabilization of critical newborns
- ☐ Care for infants/families impacted by substance use
- ☐ Breastfeeding
- ☐ Trauma-informed care
- ☐ NICU topics (e.g. NEC, feeding intolerance, fluid management, respiration)
- ☐ Transport process
- ☐ Other: _____

What does your facility do well? *(Select up to 2 bright spots)*

- ☐ Patient and family-centered care
- ☐ Employee engagement
- ☐ Teamwork
- ☐ Recent quality improvement effort: _____
- ☐ Clinical intervention or technique: _____
- ☐ Other: _____

Display This Question:

If "What does your facility do well? (Select up to 2 bright spots)" Is not blank

Would you be willing to share your success(es) with the region if we facilitated a forum for that?

- ○ Yes
- ○ Maybe
- ○ No

Certifications

For clinical staff working with newborns, please describe your facility's approach to the Neonatal Resuscitation Program (NRP) and the S.T.A.B.L.E. Program (Sugar, Temperature, Airway, Blood pressure, Lab work, and Emotional support) certifications.

Is certification required for clinical staff? *(Select a response for each certification)*

	Required for all or some	Preferred but not required	No preference/ indifferent
NRP	○	○	○
STABLE	○	○	○

For staff required or preferred to have certification, how is the training typically provided? *(Select all that apply, including your pre-COVID approach)*

	Training method				
	Internal trainer/ on-site educator	Educator within larger hospital system	Bring in outside party to train	Staff member must obtain on own	STABLE - offer online course (HealthStream)
NRP	☐	☐	☐	☐	☐
STABLE	☐	☐	☐	☐	☐

Display This Question:

If "For staff required or preferred to have certification, how is the training typically provided?" contains "Bring in outside party to train"

What outside parties has your facility used for NRP/STABLE trainings? *(Please list people or organizations used)* _____

_____

Preferences for neonatal outreach and education

What you like the Emory Regional Perinatal Center (RPC) to offer?

For offerings arranged by the RPC, what formats most appeal to your facility? *(Choose up to 3)*

- ☐ Class or training offered on-site
- ☐ Webinar/virtual class
- ☐ Conference
- ☐ Virtual conference
- ☐ Recorded training (self-paced)
- ☐ Written content (best-practice synopsis, shared journal article, ...)

What would you like to see offered? *(Choose up to 3)*

- ☐ Training on topic of interest
- ☐ Case conference/review (general)
- ☐ Case review or transport review (oriented to your facility)
- ☐ Skills practice (skills lab, simulations, drills...)
- ☐ Ability to earn continuing education credits
- ☐ NRP and/or STABLE courses
- ☐ Journal Club

Use this box to elaborate further and/or share additional wishes for outreach

_____

Would you use these digital platforms for regional news/updates?

	Yes	No
Email newsletter	○	○
Team in Microsoft TEAMS	○	○
LinkedIn	○	○
Facebook	○	○
Twitter	○	○
Instagram	○	○

Feedback on the Emory Regional Perinatal Center

Please share feedback on the various components of the Emory RPC, which includes Atlanta facilities staffed by the Emory University Division of Neonatology (Grady, Emory Midtown, & CHOA Egleston). Please be honest, whether positive, negative, or neutral.

What is your current level of satisfaction with the following RPC components?

	Extremely satisfied	Somewhat satisfied	Neither satisfied nor dissatisfied	Somewhat dissatisfied	Extremely dissatisfied
Outreach and education	○	○	○	○	○
Neonatal transport	○	○	○	○	○
Clinical care provided	○	○	○	○	○
Developmental Progress Clinic	○	○	○	○	○

What is one thing the RPC is doing well?

_____

What is one thing the RPC could improve?

_____

Any additional comments or feedback?

_____

_____

_____