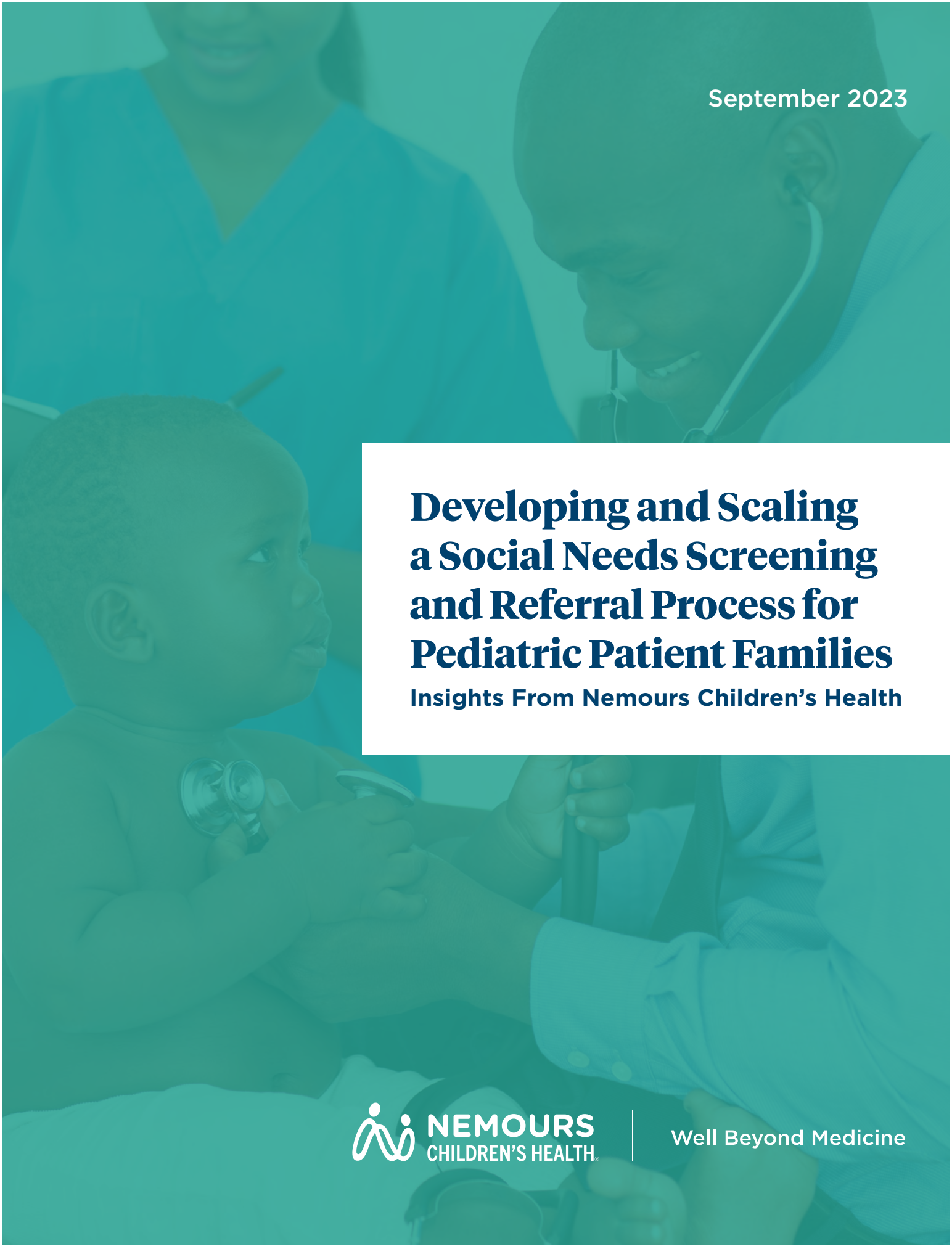

September 2023

Developing and Scaling a Social Needs Screening and Referral Process for Pediatric Patient Families

Insights From Nemours Children's Health

NEMOURS CHILDREN'S HEALTH®

Well Beyond Medicine

Contents

This document was written by staff of Nemours Children's National Office of Policy & Prevention. For questions or additional information, please email NationalOffice@Nemours.org.

Introduction

Purpose

The health-related social needs of pediatric patients differ from adult populations in that the time horizon for their impact on health and development of chronic disease is extended. A social needs screening process specifically designed for use with families of pediatric patients must be coupled with a population-based approach that addresses root causes of the health-related social needs included in the screening tool. This document is intended to serve as a combined case study and guidance resource to inform the related work of other health systems, particularly children's health systems.

Nemours Children's Health offers lessons from our experience creating and implementing a social needs screening process specifically tailored for a pediatric population, noting that our approach to the work continues to evolve as we respond to our internal continuous learning and evaluation processes plus research and insights of external peers working in this space. Among our most salient lessons is that this is a lengthy, iterative endeavor. Health systems must strike a balance between the need for consistency to produce valid, useful data and the need to tailor workflows to meet the needs of a wide variety of screening settings. Taking a "Plan, Do, Study, Act" approach has been essential as we strive to identify the most efficient, effective methods to address the health-related social needs of families in tandem with the medical needs of their children.

National and Organizational Context

As they strive to improve health outcomes, health systems and clinical care providers are increasingly seeking ways to address the upstream, social drivers of health impacting their patients. Research has established that only 20% of health outcomes can be attributed to clinical care. Upstream social drivers of health account for the other 80%, including social and economic factors (40%), physical environment (10%), and health behaviors (30%).[1] Recognizing this, and in an effort to optimize utilization, cost and disease management, health care providers and payors are transitioning from fee-for-service payment arrangements to value-based payment contracts that incentivize identifying and addressing patients' unmet health-related social needs. By 2018, emerging position papers, research and policy shifts from leading health-focused organizations increasingly drove the health care field to focus on understanding and addressing social determinants of health.[2]

In this evolving environment, health systems began to implement social needs screening and referral processes and some Medicaid managed care organizations began to reimburse for social needs screenings and provision of some supports. As Nemours Children's reframed child health to consider the whole child context and develop value-based care contracts in Delaware, we recognized the need for a greater understanding of the social needs of the patients and families we serve. This desire to understand and address the social needs of patients and families influenced our creation and implementation of a pediatric social needs screening tool and implementation process.

[1] McGinnis J.M., Williams-Russo P., and Knickman J.R. (2002). The Case For More Active Policy Attention To Health Promotion. Health Affairs 21(2), https://doi.org/10.1377/hlthaff.21.2.78.

[2] Gusoff G., Fichtenberg C., and Gottlieb L.M. (2018). Professional Medical Association Policy Statements on Social Health Assessments and Interventions. Permanente Journal 22: doi: 10.7812/TPP/18-092

Phases of Work: 2018 to 2023

Our work to develop and scale a social needs screening and referral process for pediatric patients and their families has progressed in several phases, summarized below.

Figure 1. Phases of Work: 2018 to Date

1. Developing Social Needs Screening Tool **Approximately 6 months starting in 2018**
Assemble multidepartment project team
Research existing social needs screening tools (See Appendix A.)
Select pediatric-focused social needs domains and develop screening questions
Evaluate operational feasibility (time impact, staffing, etc.) of different types of screening tools based on considerations such as length, duration, and overlap with other screening
2. Piloting Social Needs Screening Tool and Soliciting Feedback **Approximately 6 months in early 2019**
Pilot social needs screening tool in select clinical locations
Survey patient families about experience completing screening
Survey staff about experience conducting screening
3. Planning Workflows for Second Pilot Phase **Approximately 9 months in late 2019 to early 2020**
Adjust screening tool workflow in response to family and staff feedback
Add screening questions in response to patient, family and staff feedback and impact of COVID-19 pandemic

4. Piloting Screening Workflows
Approximately 6 months in mid-2020

Implement social needs screening tool in a selection of primary and specialty care settings in DE and FL to test workflow in a variety of settings

5. Moving to Screening Process Fully Operational in DE Valley Primary Care
January 1, 2021

Implement social needs screening tool in all primary care locations in DE Valley service area

6. Expanding to New Locations and Assessing Process for Potential Changes
Starting in late 2021 and ongoing

Implement social needs screening tool in additional clinical locations

Assess social needs screening tool and workflow in a "Plan, Do, Study, Act" approach and consider potential changes

Explore options for implementation of a closed loop resource and referral platform that will interface with Epic

Terminology Level Set

Social determinants of health are "the non-medical factors that influence health outcomes."

When discussing the holistic needs of patients, it is important to clearly define terminology. As explained by Katie Green and Megan Zook of the Health Care Transformation Task Force in their Health Affairs Blog, When Talking About Social Determinants, Precision Matters, "clear and consistent terminology is an essential first step to determining what role health care providers and payers can and should play in addressing the underlying factors that influence population health." Oftentimes the terms social determinants of health, social risk factors, and social needs are used interchangeably, however they do have different meanings. **Social determinants of health** are "the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems."[3] Green and Zook define **social risk factors** as "adverse social conditions associated with poor health."[4] In this document we use the term **social needs** to refer to the health-related social service needs and resource needs of patients and their families.

[3] World Health Organization. Social Determinants of Health. Accessed March 8, 2023. https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1.

[4] Green K. and Zook M. (October 29, 2019). When Talking About Social Determinants, Precision Matters. Health Affairs Blog, DOI: 10.1377/hblog20191025.776011

Key Tasks and Decisions

The sections below summarize key tasks and decisions involved developing and scaling Nemours Children's social needs screening and referral process. While the tasks and decisions are presented separately, it is important to note that each task was informed by the others, many occurring simultaneously.

All stages of the process have been iterative, taking a "Plan, Do, Study, Act" approach to ensure that learning is continually integrated. Moving forward, we will continue to deploy a continuous learning and improvement approach, making changes to enhance any/all aspects of the work in response to lessons learned internally and from the field at large.

Assembling a Team and Socializing the Work

As stated earlier, in 2018, Nemours Children's determined that better understanding the social needs of our patients and their families would be an important part of our transition to value-based care, leading to the launch of efforts to develop, pilot and spread a process for assessing and meeting the health-related social needs of our (pediatric) patients and their families.[5]

We assembled a multidisciplinary, cross-departmental team whose members had collective expertise in the tasks involved in developing a pediatric social needs screening and referral process. This included tracking of emerging research and work in the field at large, identifying/developing data collection instruments, designing workflows, soliciting input from patient families, soliciting input from staff involved in the screening process, designing, and building the technology to collect screening data and integrate it with patients' electronic health records (EHRs), analyzing the data and using it to inform related areas of work throughout the health system, etc.

Through extensive presentations to all levels of leadership and through a series of hands-on trainings for front-line staff, the project team socialized the idea of developing a social needs screening and referral process, and prepared colleagues for pilot implementation.

In addition to being informed by expertise of internal colleagues and emerging research and relevant work in the field at-large, the project was informed by the Disparities Leadership Program at the Disparities Solutions Center at Massachusetts General Hospital. Over the course of 2018 and 2019, several members of the project team participated in the program, sharing Nemours Children's early plans and decisions related to the screening tool and which social needs domains to include, receiving valuable input and feedback.

[5] Nemours Children's Health. Paying for health paves the way for a healthier future. https://nemoursreport.org/highlights/population-health/

Selecting Domains, Screening Questions, and Look Back Period

Soliciting Staff and Parent/Family Feedback

The domains, screening questions, and look back period described below were informed by a pilot that included collecting information from parents/caregivers asked to complete the screening tool as well as staff involved in the collection process and workflows. (See Phases of Work: 2018 to Date.)

The project team used a 21-item "Practice Implementation Pulse Check" survey (See Appendix B.) to solicit feedback from staff involved in the collection process and workflows. Survey questions addressed topics such as comfort in administrating the screening tool; protocols and processes related to getting the screening tool completed and getting responses incorporated into the electronic health record; staff training and/or support; sharing and use of aggregate screening data; and understanding of screening purpose and value.

Responses to the survey showed that, initially, staff had concerns that patients' parents/caregivers might feel uncomfortable disclosing their health-related social needs in a medical setting and might worry that revealing social needs could trigger calls to child protective services. In response to these concerns, the project team created talking points for front-line staff to use when introducing the screening tool to parents/caregivers and explaining the purpose, value and process. (See Appendix C.)

Parent/caregiver evaluation questions focused on assessing the ease of screening tool completion, importance of questions in the screening tool, and comfort answering questions in the screening tool. The parent/caregiver evaluation also allowed respondents to provide general comments and suggestions for improvement. Families indicated they were willing to complete a screening but wanted it to be a short as possible, so the project team intentionally kept the number of questions limited to what they believed were the most relevant domains of needs among patients and families, as well as needs Nemours Children's felt it could address after developing a resource referral process.

Domains

Once assembled, the project team's (See Assembling a Team, above.) first task was to scan the field to review existing social needs screening tools and related guidance documents. We reviewed an array of screening tools available to the public — identified through a scan of journal articles and websites — and through team members' knowledge of the work in the field gleaned from conferences, webinars, newsletters and other networking activities. The existing pediatric screening tools at the time did not fit our needs and the project team decided to create a custom questionnaire, facilitated by Nemours Children's purchase of the EPIC Healthy Planet module, to tailor a screening tool to our needs. For example, some existing pediatric screening tools reviewed by the team were felt to be too long to fit within the time constraints of an appointment. After considering the balance between a desire to use a validated screening tool or questions and the desire to have a succinct tool that would be easy/fast for adults to complete and that could be reviewed within a typical patient encounter, the project team opted to create a custom social needs screening tool by pulling items from existing tools in the field. (See Appendix A for a list of source documents and screening tools that influenced the development of the custom tool.) To keep the length relatively short, the team prioritized domains deemed to have most direct impact on the health of pediatric patients. For example, domains related to access to food were prioritized over domains related to employment.

Key Decision: Screening Questions to Use

We wanted to use questions targeted to the needs of children, youth and families and to gather a breadth of information in a short, easily completed screening tool.

Ultimately, the team decided to include ten domains: Utilities, Housing, Transportation, Social Support, Exposure to Violence, Neighborhood, Health Literacy, Legal Concerns, Food Insecurity and Financial Security. (See Figure 2: Social Needs Screening Domains.)

Figure 2. Social Needs Screening Domains

SDOH Domains

Utilities		Neighborhood	
Housing		Health Literacy	
Transportation		Legal Concerns	
Social Support		Food Insecurity	
Exposure to Violence		Financial Insecurity	

SDOH Status Colors

Green — No risk: No action needed.
Yellow — Medium risk: Action needed.
Red — High risk: Action must be taken.

Social Determinants of Health

Screening Questions

Initially, 10 questions comprised the screening tool. After the screening tool was piloted, the project team added two social needs questions and two self-determination questions. (See Appendix D for a copy of the screening tool as of July 2023.)

Given the importance of social networks in supporting child and family well-being, the first social needs question added was whether families had a social support network. The second social needs question added asked about family access to broadband internet. This question was added as a direct result of feedback the staff and project team received about the importance of internet access to child and family well-being during the COVID-19 crisis when many families transitioned to online school and work.

Through our pilot, we received feedback from staff that sometimes even families who indicated they had unmet social need(s) did not want Nemours Children's assistance connecting with services. A variety of reasons were cited — families were already receiving assistance from other organizations/entities, families anticipated that the need was temporary, and other personal reasons. Thus, we added two self-determination questions: "Would you like to complete the form?", which became the first question, and "Are you interested in receiving information to address these needs?", which became the last question.

In a monthly snapshot from early 2023, approximately 14.2% of completed screens identified at least one need. Of the 14.2%, 62.3% indicated they did not want support or connection to resources. Across studies related to social needs screening and referral systems, reported percentages of assistance acceptance/uptake have varied widely.[6] This is an area for ongoing learning within Nemours Children's and the field at large. Though the percentage of families that report needs and need assistance in addressing the needs is relatively low, the positive impact on the health and/or well-being of patients and their families who receive assistance is high. (See Major Insights from Screening to Date for examples.)

An insight from our "Plan, Do, Study, Act" approach is that there are times to deviate from social needs screening best practices to meet the unique needs of families or a health system. For example, when developing survey questions, best practice is to cover one topic in a question.[7] However, the project team, with input from legal and other departments responsible for questions in the screening tool, made a strategic decision to combine multiple questions in instances (items related to domestic violence or immigration status, for example) where parents/caregivers might be hesitant to respond to individual questions. Ultimately, the aim of screening for social needs is to start conversation between a clinician and patient's family around the needs of the family, using the conversation to surface the details and nuances of the family's needs. The project team prioritized phrasing that would maximize trust and safety over adhering strictly to best practice and validated screening questions. Allowing the project team to have flexibility to add and alter questions based on shifting needs of families and feedback from staff has been an asset to our process and demonstrates our "Plan, Do, Study, Act" approach to the work, which will continue.

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[6] De Marchis E.H., Brown E., Aceves B., et al. State of the Science of Screening in Healthcare Settings. Social Interventions Research & Evaluation Network, 2022. https://sirenetwork.ucsf.edu/tools-resources/resources/screen-report-state-science-social-screening-healthcare-settings

[7] SurveyMonkey. 10 Best Practices for Creating Effective Surveys. https://www.surveymonkey.com/mp/survey-guidelines/

Look Back Period

Initially, the social needs screening tool asked the person completing the items to think back over the past 12 months when answering each question. This is referred to as the "look back period" for the screening tool. Feedback from families suggested that a shorter look back period was warranted; families often reported that they had a need, such as food insecurity, about a year ago, but already resolved it and no longer needed assistance. Colleagues in the field at large reported similar feedback. As a result of feedback from the families of patients at Nemours Children's and emerging trends in the field, the project team changed the lookback period to 6 months.

Determining Methods for Completing the Screening Tool

Early Considerations

Methods for completing the screening tool described below were informed by a workflow pilot that included collecting information from front line staff involved in carrying out the social needs screening process. (See Phases of Work: 2018 to Date.) Originally, the only way to complete the social needs screening tool was via paper and pen, administered by a medical assistant or nurse. Staff feedback surfaced the need to change the data collection workflow to provide parents/caregivers with an increased sense of privacy while responding to screening questions (e.g., by completing survey questions on one's own ahead of the appointment or in the waiting room rather than verbally responding to questions asked by a staff member).

As a potential solution, the project team explored the idea of asking patients' parents/caregivers to complete the social needs screening tool on a tablet (iPad, etc.) upon arrival at appointments. Upon discussion on the logistics, the team determined it was not feasible to purchase, store, keep charged and monitor numerous tablets. However, this has been an area of learning and reconsideration for the team. Early in our learning journey, we anticipated that it would be effective to send parents/caregivers a link to the Nemours app and have them complete the screening on their own mobile device, if they had one. This view was supported by some literature that found mobile usage, including app usage, was high, even among traditionally under-represented populations despite assumptions of more limited access. The reality is much more nuanced, including the fact that consistent internet access was a larger issue for our patients and families than anticipated. Ultimately, we could not get much traction nor a good workflow to the idea of pushing out a link during the visit. In hindsight, utilizing iPads or other tablets may have been more effective.

Also early in the piloting process, there were occasional technical and workflow glitches wherein screening responses entered by parents/caregivers in advance of the appointment were not added to, or visible in, the EHR at the time of the appointment. In these instances, parents/caregivers would be asked to re-enter the information during the appointment, creating a poor patient experience. At the time of publication, technical issues are mostly resolved. However, other health systems planning their own screening and referral processes should recognize that identifying and troubleshooting technical glitches will be an ongoing process.

Current Methods for Completing Screening Tool

At this point in our learning journey, parents/caregivers of patients can complete the social needs screening tool via one of three methods (See Appendix E for workflow diagrams for each method.):

1. **Via the Nemours app** — Using the Nemours app, a patient's parent/caregiver can complete the screening tool prior to the appointment or upon arrival for the appointment, as part of registration paperwork.
2. **On paper** — A patient's parent/caregiver can complete the screening on paper (nine languages available at the time of this document's publication: English, Spanish, Arabic, Haitian Creole, Hindi, Portuguese, Russian, Chinese, Turkish). After completion, a medical assistant will enter the screening responses into the patient's EHR.
3. **On a Nemours Children's-owned computer in the exam room** — In the exam room while waiting for the physician, a patient's parent/caregiver can either give verbal responses to screening questions asked by a medical assistant who enters responses into the patient's EHR via the computer, or the patient's parent/caregiver can complete an electronic version of the screening tool on the computer (which would be in "captive mode", meaning that the screening tool is the only accessible/visible page in the computer).

Key Decision: Options for Patient Families to Complete Screening

We wanted to create an efficient, yet flexible, process for patient families to answer screening questions without over burdening staff.

Of the three options in use at the time of this document's publication, the most efficient method is option 1, above — encouraging patients' parents/caregivers to complete the screening tool via the Nemours app before arriving for an appointment. This provides time for the data to be synced with the patient's EHR prior to the visit, in turn allowing the physician/provider to review and discuss screening responses and any plans for service/resource referrals. However, there are several significant, real-world limitations to method 1, which require us to offer additional methods. Limitation 1: Using the Nemours app requires access to an electronic device such as a cell phone, tablet or computer, as well as internet access. Many of the families we serve do not have consistent access to the internet. Limitation 2: Using the Nemours app requires uptake by patients' parents/caregivers. At the time of publication, use of the Nemours app by patients' parents/caregivers is as low as 6% in some of our practices. Allowing patients' families/caregivers to complete the screening on paper and/or via the computer in the exam room (options 2 and 3 above) addresses this limitation. Limitation 3: At the time of publication, the Nemours app is only available in English and not supported in other languages. To address this, Nemours Children's offers a paper version of the screening tool in additional languages — nine at time of publication (option 2 above).

Determining Screening Frequency and Points of Patient Contact

While developing the screening tool, the project team also needed to decide on the frequency of screening and points of patient contact. Following best practice at the time, we established the goal of asking patients' parents/caregivers to complete the screening tool once per year. The team decided on newborn visits, new patient visits, and annual well visits as points of contact to ask patients' parents/families to complete the screening tool. In theory, these points of contact would allow for annual screening as well as opportunities for interim check-ins with families to identify any new needs and/or discuss previously identified needs. The vision was to expand points of patient contact over time (adding specialty care appointments and inpatient stays, for example) to provide additional opportunities for interim check-ins with families, as well as connect with patient families we only serve through specialty care.

Identifying Process Metrics to Surface Implementation Issues

An essential aspect of developing a social needs screening and referral process is to identify process metrics the team will track to identify implementation challenges. Our project team identified three primary metrics that indicate the extent to which screenings are being conducted efficiently and whether changes to the process may be needed:

1. Opportunities to screen patients' families/caregivers vs. number of patients' families/caregivers actually screened
2. Screening declination rate
3. Share of screenings completed in each mode

Our project team continually examines this data holistically and compares it across implementation sites to identify locations that might be having challenges with implementation. This process leads to conversations with locations about the challenges they face and co-creating adjustments to implementation procedures to better accommodate the needs of the location. The project team also continually updates training materials to enhance their clarity as questions related to implementation arise and staff in clinical locations turn over.

Key Decision: Metrics to Monitor Effectiveness of Implementation

We wanted to collect and analyze data that would help identify implementation challenges and inform the development of solutions.

Figure 3. The Inverted Pyramid: The Ways Nemours Children's Uses Social Needs Screening Data

Determining How Screening Data Will Be Used

Beginning with the end in mind was essential to our process of designing workflows and communication channels. Our project team envisioned using the data from the social needs screenings in various ways ranging from connecting individual patients and families to services to guiding Nemours Children's advocacy around social determinants of health, forming an inverted pyramid (See Figure 3) containing six uses for social needs data gathered from the social needs screening tool, moving from person to community and institution, to system:

1. **Identify the social needs of patients and families and help connect them to resources to address those needs.** Many Nemours Children's patients and families have identified food insecurity as a need they face, and some families face additional barriers because they live far from, or lack transportation to travel to, local food banks. To address this, care coordinators help eligible patient families to sign up for free food deliveries from a local food bank through Amazon's Help for Hunger food delivery program. This connects patients and families with a free source of nutritious food. For patients with diabetes in particular, access to healthy, affordable food is essential.

2. **Inform clinic processes and workflows.** We created an integrated workflow for asking patient families about their social needs, discussing the needs and their impact on a patient's health and well-being, and referring patients to care coordination for assistance when needed. This process allows us to work in partnership with patient families to address their social needs in the context of patient's medical care to foster a comprehensive approach to health and well-being.

3. **Inform and direct the budgeting and resourcing for programmatic offerings.** By analyzing the social needs data by geography and various types of patient populations, Nemours Children's can better understand patterns of social needs among the patient population to inform the decisions about the type, scale and location of interventions to impact patients most effectively. For example, after we began implementing the social needs screening, the results revealed clinic locations with significant reports of food insecurity. As a result, we reached out to our local food bank, which agreed to deploy its mobile pantry to new locations (identified by screening data) and create on-site food pantries at Nemours Children's clinics with sustained food-related needs among patients' families. Social needs screening data have also led us to consider the idea of creating a budget for a centralized social needs "support" center so that smaller clinical locations that do not have on-site care coordinators or social workers can refer patients with needs to the central support center for assistance.

4. **Direct the nature of partnerships with community-based organizations.** Social needs screening data identified transportation needs for our patients in wheelchairs who can face difficulty travelling to appointments. Transportation services are typically available to these patients via Medicaid, however, the services typically need to be booked 72 hours (about 3 days) in advance, which is impractical for unanticipated and/or urgent needs, such as sick visits. To address this gap for many patients in wheelchairs, Nemours Children's partnered with the state paratransit service in Delaware, whose services were being under-utilized, to provide transit to patient families and allow them to book as late as 24 hours in advance of their appointment. Social needs screening data have also enhanced our understanding of patients' and families' legal needs and supported the case for the creation of Medical Legal Partnership in two locations.

5. **Guide statewide advocacy priorities.** The social needs data for patients and families supports our efforts to collaborate with state Medicaid-managed care organizations to integrate a focus on social needs into quality programs with state Medicaid programs.

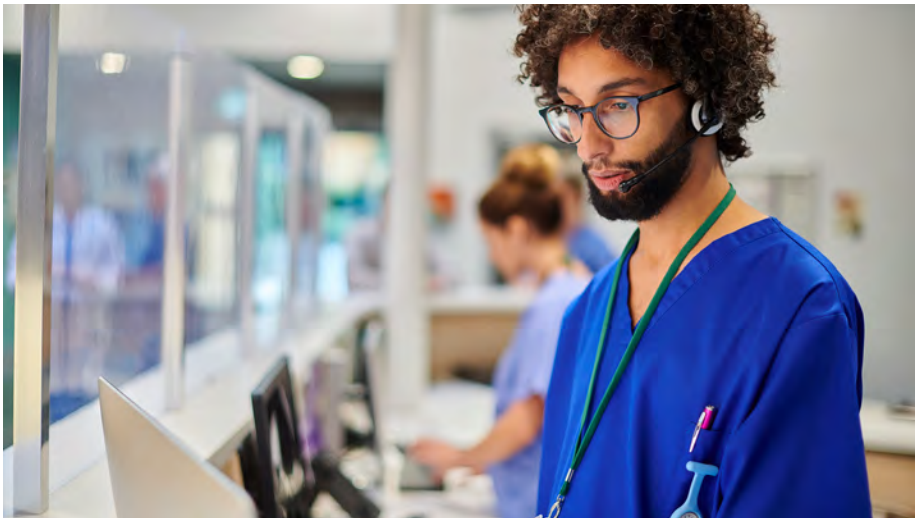
6. **Guide national advocacy priorities.** We have used high-level findings regarding social needs in our communities and de-identified patient anecdotes to advocate for federal legislation to address social needs and greater support for pediatric value-based care models that address social drivers.

Determining the Most Effective Data Integration Strategy

When considering how to deliver the social needs screening tool, a key consideration was how to ensure the responses to the screening were integrated into a patient's EHR. Including the information in the EHR supports Nemours Children's goal of considering whole child health and supports families in meeting their social as well as health needs so that children can reach their full health potential.

Our project team determined the most effective way to integrate the social needs screening data into our electronic health record system, Epic, was to build the screening questions into the Epic Healthy Planet platform. At the time, Epic did not have a pediatric-specific screening tool available as part of their standard build. Since Nemours Children's created its own technical workflow in Epic, the project team had to design the process with the end in mind and a clear sense of what data we wanted to collect with the screening tool. Our project team focused on what we wanted to know about the needs of our patient population and what Nemours Children's was equipped to help with, to limit screening questions and build the screening into Epic.

A challenge in this process was balancing screening tool specificity with ease of use. We wanted to implement the tool without creating significant additional administrative burdens for clinical staff. Clinical staff have many things to accomplish during the constrained time of an appointment and adding a social needs screening to their standard processes takes additional time to explain the screening tool, request family participation, and then discuss results during exam. The approach we settled on allows for slight differences in implementation (e.g., completing in the Nemours app before appointment, completing paper screening in waiting room, completing in the exam room) to offer some flexibility to locations. The goal is to have as much consistency as possible without overburdening staff considering the many demands and staffing constraints they face.



Modifying Protocols to Be Responsive to Workflow Challenges

Though workflows have been carefully designed to allow sufficient time for staff to prompt and assist patients' parents/caregivers in completing the social needs screening tool, there are times when staff are unable to adhere to workflows. For example, if the parent/caregiver is distracted by needing to give attention to the patient or siblings brought to the appointment, if a new member of the care team is being oriented, or if computers or wi-fi are experiencing technical difficulties. Such instances require staff to be selective about when to carry out the screening protocol with parents/caregivers. The project team is considering potential solutions to address this challenge. For example, we may opt to prioritize patients with high clinical complexity — patients who are eligible for care coordination and care management. In such instances the Care Management team could be tasked with completing screenings, supporting connection to resources/services, and/or checking in on the status of previously identified resource/service needs.

Responding to the Results: Selecting a Platform for Resource Referrals and Connections

A long-term goal for Nemours Children's resource and referral system is to have technology-enabled closed loop referral capability — meaning that the technology infrastructure allows for automating the process of connecting a family to services identified through social needs screening via bidirectional information sharing between the health system and social service providers, such that the status of the connection is visible in real time in the patient record.

Making the decision about which technology platform to invest in for closed loop referrals has been a pivotal decision in the overall process of establishing a social needs screening and referral process. To inform their thinking, the project team reviewed an array of publications and presentations and consulted with peers from other health systems. Key considerations were:

- **Volume vs. cost considerations** —With a relatively small percentage of all screened families needing and accepting technology-enabled referrals, what price point makes sense to support our volume/need?
- **Costs and functionality to use across multiple states** — What are the considerations, customizations and efficiencies of scale for using one platform across multiple states?
- **Platforms already being used by major stakeholders in Nemours Children's states/service areas** — Where state or regional entities are already using a certain platform, would it make sense for us to use the same?
- **Participation by service providers** — Will information about resources and services in the community be correct and complete? Does connecting families to services require service providers to be trained, active users of the platform?

Our project team is currently evaluating several technology platforms to determine which best fits the needs of Nemours Children's and our patient families.

Responding to Screening Results: Referral Tiers and Staffing Requirements

The project team decided to create three tiers of action based on screening results. (See Figure 4, Responding to Screening Results: Referral Tiers.) At the time of publication, Tier 3 is not live. Nemours Children's is exploring technology options to support Tier 3.

- **Tier 1: Resource Flyer Only**
  - » Majority of screened families
  - » Needs are identified, the family has indicated that they would like help identifying services or resources to meet their needs, and after discussion with the family, the clinician feels confident that the family can connect to the service/resource providers without the help of care coordinators (etc.) from Nemours Children's
  - » Resource flyer is provided with information services to meet health-related social needs identified during the screening process (See Figure 5, Sample Resource Flyer)

Key Decision: Structuring the Referral and Support Levels

We wanted to create tiers of referrals and support that vary the intensity of support in relationship to the needs of patients and families.

If social needs are identified via the screening process and the clinician feels the family requires assistance in addressing those needs, a Best Practice Alert is sent to the designated point person (social worker, care coordinator, care manager, etc.) through the EHR, triggering care coordination. (See Appendix F for additional details on the distinction between Tier 2 and Tier 3.)

- **Tier 2: Warm Handoff**
  - » Families with fewer and/or less complex needs
  - » Based on the assessment of the clinician, a point person provides flyer as well as direct connection to resources and service providers
  - » The connection is a "warm handoff" with limited ability to confirm that the family actually secured the resources or services

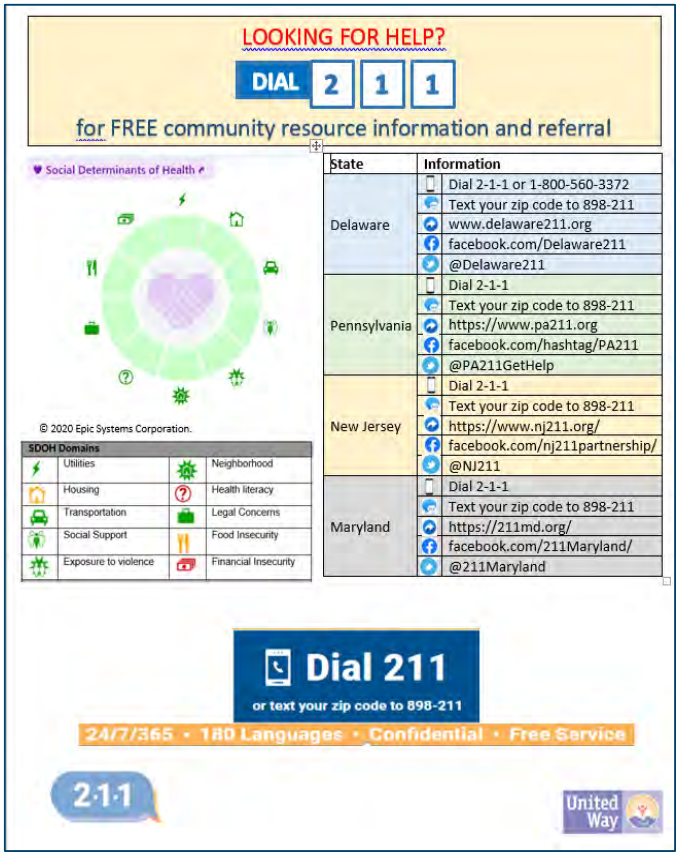
- **Tier 3: Technology-Enabled ClosedLoop Connection**
  - » Families with many needs and/or more complex needs
  - » Care coordination enhanced by technology-enabled "closed loop" referral process — the technology infrastructure allows for automating the process of connecting a family to services identified through social needs screening via bidirectional information sharing between the health system and social service providers, such that the status of the connection is visible in real time in the patient record

Staffing for Resource Coordination

An organization thinking about starting this work might assume it will require a considerable increase in staffing to connect families to resources. Thus far, the staffing required to carry out resource connections has been less than originally anticipated by the project team. At Nemours Children's the majority of families fall into Tier 1 and do not require and/or request staff support for resource connection. Piloting the screening procedure with a rapid feedback and adaptation process allowed the project team to identify the unique staffing requirements at each location. Practices with full-time care coordinators already in place at launch of the screening process have not required staffing increases. At publication, the project team is expanding to locations without on-site care coordinators and testing a shared staffing model, with one care coordinator covering multiple locations.

Figure 4. Responding to Screening Results: Referral Tiers

Figure 5. Sample Resource Flyer



Building Buy-In and Training Staff

Nemours Children's was an early adopter of screening for social needs, with approximately 24% of hospitals and 16% of physician practices conducting screenings at the time we began our efforts.[8] Because social needs screening was not yet an industry norm, an extensive amount of time was required for socializing the purpose and building buy-in among clinical and administrative staff involved. The project team found two primary causes of apprehension: ethics and time.

As noted in the Phases of Work to Date section, Nemours Children's has used a sequenced approach to developing our system; while the screening tool was being tested and refined, no care coordination was in place. Internal stakeholders had concerns about the ethics of collecting social needs information from patients without the ability to meet needs dentified via the screening process. The project team, whose members were following emerging work on this topic, were able to draw from the lessons and recommendations of other health systems to address the concerns of colleagues. A key decision made in response to concerns about ethics was to require locations to have the staffing capacity to support Tier 2 referrals before going live with social needs screening.

Internal stakeholders also shared concerns about the time required to add new tasks and workflows to patient encounters. The project team used multiple strategies to address this concern:

- Involve the care team in design. (As noted earlier, clinical sites were added in phases. Custom workflows were created for each location with input from the care team.)
- Use process data to inform design.
- Make real-time process improvements based on rapid cycles of testing, assessing and refining workflows.
- Design responsive and realistic protocols.
- Establish clear expectations, anchored in metrics.
- Designate a liaison at each location for real time, bidirectional communication between locations and project team.
- Create a universal training suitable for all locations as well as job aids for tailored workflows.

The following example incorporates examples of these strategies in action — Early in Nemours Children's process of developing a screening strategy, indicating that the patient's family declined to participate would count as a complete survey. Examining process data revealed a sizable number of false declines. The most common cause was that, on days when staff were time-stressed, they would enter "decline" to Question 1 on behalf of the family without offering

[8] Fraze T.K., Brewster .AL., Lewis V.A., Beidler L.B., Murray G.F., Colla C.H. Prevalence of Screening for Food Insecurity, Housing Instability, Utility Needs, Transportation Needs, and Interpersonal Violence by US Physician Practices and Hospitals. JAMA Network Open. 2019;2(9):e1911514. doi:10.1001/jamanetworkopen.2019.11514

the screening. Discussions revealed that, in entering "decline" rather than not entering any data at all, staff were doing their best to comply with the process even on days when completing screenings wasn't feasible. For data collection purposes, the definition of a completed screening was altered so that screenings with one response (i.e., "decline" to Question 1) were no longer included. In addition, location liaisons were encouraged to flag issues that would prevent the screening workflow from being carried out, allowing the project team and locations to problem solve in real time. Location liaisons and the project team share responsibility for nurturing a culture of continuous learning, training/re-training, and improvement so that protocols are clear, protocols are followed, and ideas to strengthen the screening process can be incorporated as quickly as possible.

An important lesson from our challenges is that a formal mandate from leadership is essential for locations to follow the workflow correctly. In our experience, when people are busy anything that seems optional will get skipped. Establishing clear mandates ensures everyone is clear that completing the social needs screening protocol is a "must do" rather than a "nice to."

Scaling to New Locations Within the Health System

In our experience, each wave of expansion to new locations in the health system has brought new learning. For example, when the screening process was launched at our hospital in Orlando, the project team learned that differences in workflows between hospitals and ambulatory settings required changes to implementation protocols.

Key Decision: Readiness Requirements for Implementing Screening Tool

We wanted to be sure that our locations have the sufficient infrastructure and staff in place to support patient families with the tiered referral model before implementing the screening tool.

Before a new location is cleared to go live with screening, we require three elements to be fully designed: the location-specific workflow, the people/positions assigned to carry out the steps in the workflow, and customizing the technology configuration. Questions to be addressed in the design process include, but are not limited to:

- What workflow are you designing for? For example, are you designing for the physical space in the hospital (all patients who come to the registration desk regardless of what administrative unit their appointment is with) or for the administrative unit (of all the patients who come to the registration desk, only those going to the GI unit)? The answer will influence the scale of what you roll out.
- How will the screening data be collected? Through the Nemours app prior to the appointment, on paper at checkin, or in the exam room on a computer? Each has its own workflow and technological configurations.
- How are we getting diagnostic codes for the social need(s) added to a claim?
- After the screening, what happens if a need is identified and the family wants help?
- What is the workflow to trigger escalation? Who is the Tier 2 point person for escalation — social worker, care coordinator, care manager, nurse, etc.? What technology configuration is needed to alert the point person?
- What is the conveyance of the resources or services the patient's family needs? What is the workflow for linking the family to the resource?
- How and where will staff access and review responses from patient families that completed the screening prior to the visit in the Nemours app?
- How will paper questionnaires get entered into the patient's EHR?

In our experience, it is essential to pilot the workflows and protocols at each location so you have hard data on how much staff time is required to carry out each step of the screening protocol and can plan accordingly as you move from pilot to full scale. Launching the screening process without using pilot data to refine the process could overburden your workforce such that you don't have enough people to carry out the required steps of the screening protocol.

Metrics of Interest

Over time, the project team has refined the metrics it collects and shares in monthly reports. Currently, key metrics include, but are not limited to:

- Number of patient families offered a screen, including refusals
    - » Of those, the number of patient families that completed the screening
- Percent of screened families with at least one identified social need
    - » Of those, the percentage of families who requested help accessing resources or services to meet a need identified through the screening
- Top three social needs identified through screenings
- Percentage of patient visits seen with a filed screen, by location/department and cumulatively by month
- By location/department, the number with and without a filed accepted screen (meaning screening results have been logged into the patient record and are available to view in the patient chart), and the percentage of filed screens accepted among screens completed
- By location/department, the number of screens completed but not yet filed, and numeric change since last report
- By location/department, the number of patients in panel, the number of patient visits seen, and the percentage of patient visits seen with filed accepted screens
- Percent of patient families offered a screen that declined, by location/department, by month
- Number of patients with SDOH diagnosis codes (aka, “Z” codes) billed by month, overall and by category of code
- The clinical risk groups, by percentage, into which patients with positive screens fall (Positive screen: one or more needs identified via the social needs screening process)
- The race and ethnicity categories, by percentage, into which patients with positive screens fall
- The race, ethnicity and preferred language for the screened population and for those with identified needs

Major Insights From Screening Data to Date

The most essential lessons learned from our social needs screening process to date include:

1. Most families are willing to disclose social needs. However, most do not request/need Nemours Children's help addressing those needs. Reasons typically include:
    - » Patient families do not expect health systems to help with meeting health-related social needs. While they might accept help finding baby formula (directly related to the needs of the child/patient), they do not expect the health system to help them secure affordable housing.
    - » Patient families are already getting help from other institutions or organizations in their life (e.g., church, community).
2. Among all families screened, the percentage of families with multiple and/or complex health-related social needs is only roughly 1% (at the time of publication). Though the percentage is low, the positive impact on the health and/or well-being of patients and their families is high. It is important not to let the impact get lost behind the relatively low numbers. Two recent examples provided by care coordinators demonstrate this:
    - » A mom had left a physically abusive partner and was living in a hotel paying out of pocket and nearly out of money. She would likely have returned to living with a physically abusive partner if our care coordinator had not secured housing and a payment voucher for them.
    - » During pandemic lockdowns a family lost half its income because one of the parents needed to stay home with the children. Our care coordinator helped the family sort through the red tape of a stalled-out unemployment appeals process, ultimately increasing the family's monthly income to a nonemergency status.
3. A universal approach to screening (i.e., screening for all patient families) helps increase buy-in related to the need for screening in all locations and eliminate bias-based assumptions. Data from our screening process to date have made it clear that socio-economic status is not a reliable indicator of which families will have medically related social needs.

Moving Forward: 2023 and Beyond

As we continue to refine our screening process for health-related social needs and expand the number of locations conducting screenings, several priorities stand out.

- Conducting a full review of our current social needs screening approach and making updates prior to our next wave of expansion to additional locations in our health system. This will include, but will not be limited to, a re-assessment of our social need screening tool, given that Epic now offers a social need screening tool customized for pediatric populations that was not available when we developed our screening tool.
- The need for a C-suite mandate for locations that have gone live to carry out screenings in accordance with protocols. Consistency has been an issue at some locations that have gone live. There may be a need for a mixture of incentives and consequences, especially at the start.
- Continuing to streamline our processes for staff training (for new hires) and retraining (as protocols and workflows are refined). We have begun moving training documents to Nemours University, Nemours Children's online learning management system, and will continue to expand content in that location.
- Continuing to refine how we share data internally and how the data from the social needs screening and screening process are used.

The more data we collect, the more we learn. And the more we learn, the more we identify areas for improvement.

Closing Reflections and Recommendations

1. The more data we collect, the more we learn. And the more we learn, the more we identify areas for improvement.
2. A continuous improvement approach is essential when developing and scaling a social needs screening tool. It is quite different from a clinical or physical health screening tool in how it is discussed and how it is perceived. Continuing to monitor and learn from other health systems is essential to inform mid-course corrections enacted as part of continuous improvement.
3. Make sure that relationships with community-based organizations are being established so that resources for each area screened are known.
4. Make sure your patients and their families understand the "why" behind this screening tool. It will help establish trust.
5. Make sure that you have buy-in from all levels of leadership across all departments; the time spent on this up front is invaluable.
6. Develop and share a vision for how data will be used that can speak to a variety of audiences. How does it help one patient? One community? All patients? One clinical population?
7. Celebrate and recognize individual wins – families supported, complicated situations addressed, successful interventions realized, etc. to counteract the strain caused by the overwhelming need, or the frustration of workflow failure.

Acknowledgements

Creating, implementing and continually refining Nemours Children's social needs screening and referral process required, and continues to require, a significant commitment from many individuals. Nemours Children's is grateful for time, expertise and input from everyone affiliated with the work to date, with special thanks to:

- The Value-Based Services Organization within Nemours Children's, for overall leadership and coordination.
- Patients' parents/caregivers who gave input to screening process and content.
- Nemours Children's Medical Management and Delaware Valley Primary Care teams, for input essential to the development and implementation of the current social needs screening tool.
- Nemours Children's Office of Health Equity and Inclusion (now known as IDEA) for leadership, expertise and guidance on serving the needs of all children, and for supporting connections to different organizations across the country.
- Locations that participated in the 2019 workflow pilot: Delaware Primary Care Locations — St. Francis, Seaford; Delaware In-Patient Units — PICU, CICU, 2B, 4E, NICU, ED; Delaware Specialty Care Locations – Cerebral Palsy Clinic; Pennsylvania Primary Care Locations – Villanova; Florida Primary Care Locations — Downtown Orlando, Longwood, Maitland.
- The Emergency Department at Nemours Children's Hospital, Delaware; the hospitalist program at Nemours Children's Health, Orlando; the Department of Social Work; the Center for Health Delivery Science; the Department of Weight Management; the Cerebral Palsy Clinic; the National Office of Policy and Prevention; and clinical locations across our health system for ongoing input and consultation.

In addition, Nemours Children's is grateful for the opportunity to participate in the 2018–2019 Disparities Leadership Program at the Disparities Solutions Center at Massachusetts General Hospital to receive feedback and input from other health systems and providers, particularly Patricia Rodríguez, MD, via her former role at Children's Medical Center of Dallas.

Appendix — Resources and Sample Documents

Appendix A. Screening Tool Source Documents and Influences

The screening questions in Nemours Children's social needs screening tool were adopted from and/or influenced by a variety of source documents and screening tools utilized by other health systems and organizations including, but not limited to:

- American Academy of Family Physicians
- Boston Medical Thrive Screening Tool
- Children's Health Dallas
- Children's Hospital Colorado
- Delaware Department of Education School District COVID-19 reopening survey
- Hunger Vital Sign™
- Partners HealthCare (now Mass General Brigham)
- PhilaKids
- PRAPARE Screening Tool
- STANDARD
- WE CARE Screening Tool

Appendix B. Social Needs Screening Pulse Check to Collect Feedback from Staff on Implementation Process

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Page 1

Social Needs Practice Implementation Pulse Check

Please take a few minutes to complete the survey below. Your responses to the survey are appreciated and will assist in continuous improvement of the process.

Thank you!

1) What was your comfort level offering the social needs tool in January?
- ◯ Very Comfortable
- ◯ Somewhat Comfortable
- ◯ Not Comfortable

2) What is your comfort level offering the social needs tool currently?
- ◯ Very Comfortable
- ◯ Somewhat Comfortable
- ◯ Not Comfortable

3) How easy is it to administer the social needs survey?
- ◯ Easy
- ◯ Somewhat Easy
- ◯ Difficult

4) How easy is it to record social needs survey results?
- ◯ Easy
- ◯ Somewhat Easy
- ◯ Difficult

5) Did you participate in any of the virtual social needs trainings?
- ◯ Yes
- ◯ No

6) Do you feel you were adequately trained to administer and/or record the social needs survey and results?
- ◯ Adequately Trained
- ◯ Somewhat Adequately Trained
- ◯ Not Adequately Trained

7) Are there areas of training and/or support you feel are needed?
- ◯ Yes
- ◯ No

8) If there are areas of training and/or support needed, please provide details.

_____

9) Do you feel adequately supported by the social needs Initiative Team in your efforts to implement the social needs process?
- ◯ Adequately Supported
- ◯ Somewhat Supported
- ◯ Not Supported

10) Do you feel adequately supported by your practice colleagues in your efforts to implement the social needs process?
- ◯ Adequately Supported
- ◯ Somewhat Supported
- ◯ Not Supported

11) Are you aware of the bi-weekly social needs Champions calls scheduled to address questions, concerns and support idea sharing?
- ◯ Yes
- ◯ No

12) Are you aware of the name of the Champion for your practice?
- ◯ Yes
- ◯ No

13) Are you aware of the social needs Teams site used for chat and information sharing?
- ◯ Yes
- ◯ No

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14) Have you had an opportunity to view social needs data?
- ◯ Yes
- ◯ No

15) If so, was the data easy to understand?
- ◯ Yes
- ◯ No
- ◯ N/A

16) Is there other social needs data that would be helpful to you and your team?
- ◯ Yes
- ◯ No

17) If there are additional data needs, please provide details.

_____

18) What is your sites primary method of administering the social needs tool?
- ◯ Nemours App
- ◯ Captive Mode
- ◯ Paper Form

19) What is your sites secondary method of administering the social needs tool?
- ◯ Nemours App
- ◯ Captive Mode
- ◯ Paper Form

20) Do you understand the significance of the screener for the patient?
- ◯ Yes
- ◯ No

21) Do you understand the significance of the screener as it relates to the overall strategic plan?
- ◯ Yes
- ◯ No

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Appendix C. Letter Given to Patients and Families in Clinic Explaining Social Needs Screening Tool

NEMOURS CHILDREN'S HEALTH | Well Beyond Medicine

Hello Nemours Patients and Families,

Will you please fill out a short survey about things going on in your home and neighborhood?

We care about your family and know that many things can affect your child's health. Things like what you eat, how hard it is to get places, having a job, or if you can pay for medicine or medical care. The survey will help us find out what our families need most. We'll use the information to talk with local community agencies, government agencies and insurance companies. Together we can make programs to help keep families and kids healthy.

Please take a few minutes to fill out the survey. There are no right or wrong answers. You don't have to fill it out if you don't want to. When you're done, give the survey to a staff member.
If you have any questions, please ask us.

Thank you!
Your Nemours Care Team

Appendix D. Nemours Children's Health Social Needs Screening Questions (current as of July 2023)

Help us improve your care.

Patient's Name:_____ Date of Birth:_____ Today's Date:_____

At Nemours Children's Health, we want to provide the best possible care for your child and your family. Many things in your life can impact your child's health, like what you eat, how difficult it may be to get here, your job, and whether you are able to pay for medicine or medical treatment. With these questions, we are learning how we can better serve children and families. These questions may be personal, but like all your medical records, anything you share will be kept private and confidential. We are required by law to report any abuse. **Would you like to complete the form?** ❑Yes ❑No

1. In the past 6 months, were there times when you didn't have money to buy enough food? ❑Yes ❑No
2. In the past 6 months, have you ever had trouble paying for a doctor, dentist or medicine for you or your child? ❑Yes ❑No
3. In the past 6 months, did your child ever go without medicine or miss a medical appointment because you didn't have a way to get to the pharmacy or doctor's appointment? ❑Yes ❑No
4. In the past 6 months, has your utility company ever shut off your service because you could not pay your bill (electric, gas, water, heat, or phone)? ❑Yes ❑No
5. Do you worry about having a working internet connection? ❑Yes ❑No
6. In the past 6 months, have you or your child ever had to stay in a shelter, stay with others, in a hotel, live outside on the street or somewhere else, even for one night? ❑Yes ❑No
7. Currently, do you have any problems in the place where you live like mold, bugs, ants or mice; lead paint or pipes; lack of heat or air conditioning; lack of smoke detectors, oven or stove; water leaks or other repair issues? ❑Yes ❑No
8. Are you concerned about losing your housing? ❑Yes ❑No
9. Do you have any concerns about your fostering/ kinship or custody arrangement or your family's immigration status? ❑Yes ❑No
10. In the past 6 months, have you or any other family member been hit, threatened, abused, or bullied? ❑Yes ❑No
11. Do you have any concerns about your neighborhood with safety, gun violence, cleanliness or crime? ❑Yes ❑No
12. Do you sometimes have a hard time understanding what your doctor or nurse is telling you about your child's health or medications? ❑Yes ❑No
13. Do you sometimes have a hard time understanding doctor instructions and medical paperwork? ❑Yes ❑No
14. In the past 6 months, has there been a time when you or your child needed help and you had no one to call on (such as with transportation or childcare)? ❑Yes ❑No If "yes," please explain?

_____

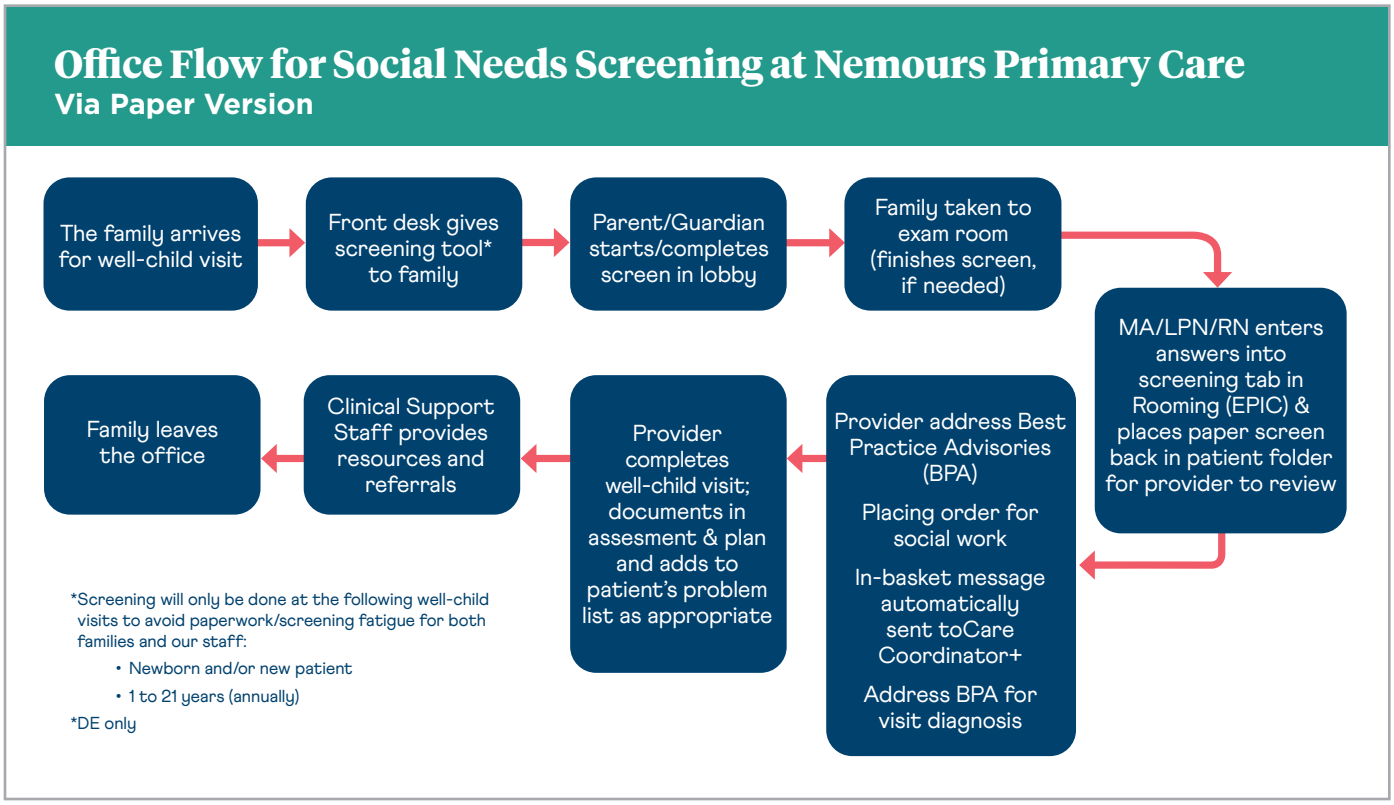
_____

Are you interested in receiving assistance from Nemours Children's staff or information about other professional resources on how to meet these needs? ❑Yes ❑No

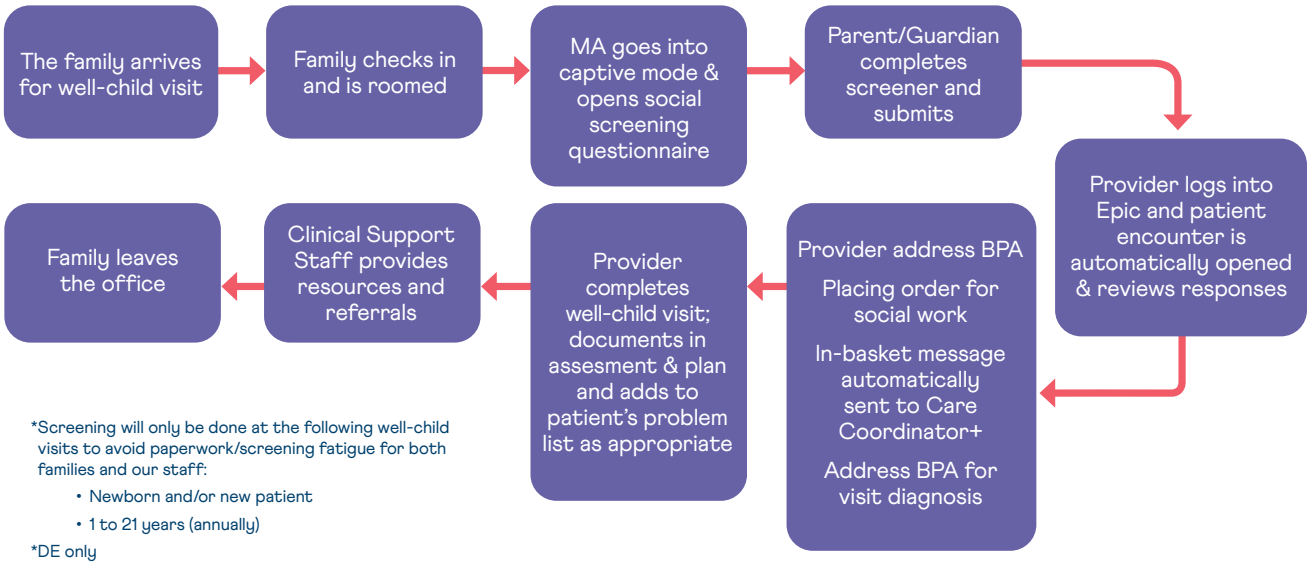
NEMOURS CHILDREN'S HEALTH

For more information, visit Nemours.org.
Well Beyond Medicine

Appendix E. Social Needs Screening Workflows for Each Method of Completion



Office Flow for Social Needs Screening at Nemours Primary Care
Via Captive Mode

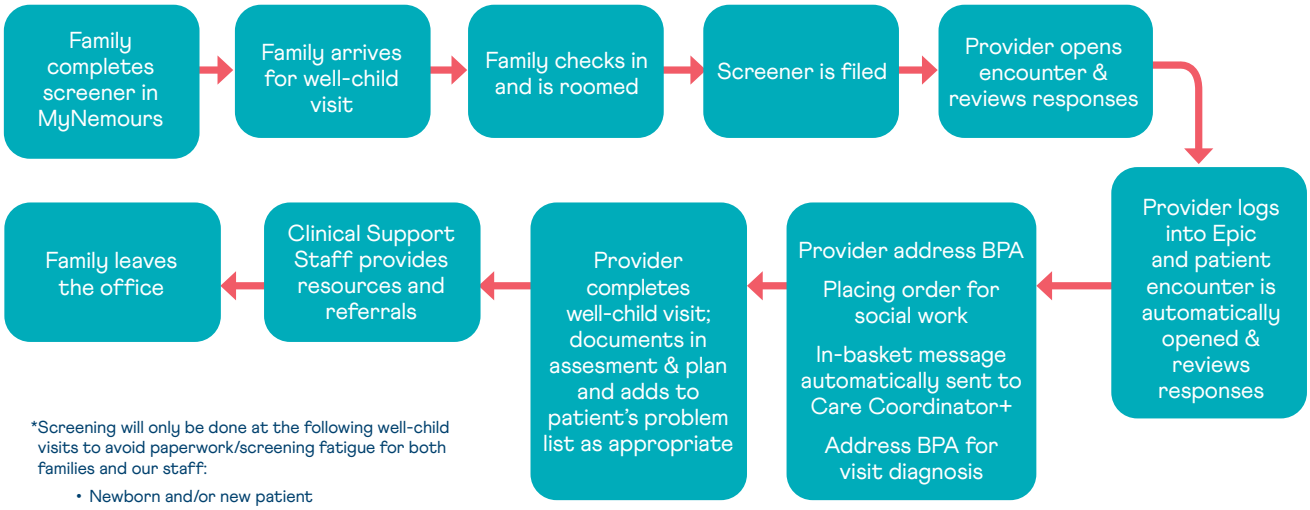


*Screening will only be done at the following well-child visits to avoid paperwork/screening fatigue for both families and our staff:

- Newborn and/or new patient
- 1 to 21 years (annually)

*DE only

Office Flow for Social Needs Screening at Nemours Primary Care
Via MyNemours (Delaware Valley Only)



*Screening will only be done at the following well-child visits to avoid paperwork/screening fatigue for both families and our staff:

- Newborn and/or new patient
- 1 to 21 years (annually)

*DE only

Appendix F. Social Needs Referral Tier Guidance

Provider Designation of Tier 1 or Tier 2

How does a provider determine Tier 1 versus Tier 2 with resources?

- Everyone can't be referred to Tier 2
- Providers will manage up the process
  - **Tier 1**
    - Majority of patients
    - Minor problems/issues clinician believes family can handle on own with minimal support
      - Health literacy gaps
      - Patient education
    - Families not wanting additioanl help
  - **Tier 2**
    - Clinician determines family would benefit from support in addressing needs
    - Connect with Social Worker, Care Manager, Case Manager
  - **Tier 3** **(Not currently implemented at Nemours Children's Health as of August 2023)**
    - Direct connection to services required

About Nemours Children's Health

Nemours Children's Health is one of the nation's largest multistate pediatric health systems, which includes two free-standing children's hospitals and a network of nearly 75 primary and specialty care practices. Nemours Children's seeks to transform the health of children by adopting a holistic health model that utilizes innovative, safe and high-quality care, while also caring for the health of the whole child beyond medicine. Nemours Children's also powers the world's most-visited website for information on the health of children and teens, Nemours **KidsHealth.org**.

The Nemours Foundation, established through the legacy and philanthropy of Alfred I. duPont, provides pediatric clinical care, research, education, advocacy and prevention programs to the children, families and communities it serves. For more information, visit **Nemours.org.**

NEMOURS CHILDREN'S HEALTH®