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STAT-MD: Early Identification of ASD for Pediatric Health Providers

The STAT-MD model is designed to teach enhanced ASD screening and diagnostic procedures to pediatric medical providers serving young children.

Cutting-Edge | Emerging | **Promising** | Best

Location	Topic Area	Setting
Nashville, TN	Access to Health Care/Insurance, Primary/Preventative Care, Service Coordination/Integration	Community

Population Focus	NPM	Date Added
CYSHCN, Families/Consumers, Health Care Providers	NPM 6: Developmental Screening; NPM 11: Medical Home	December 2022

Contact Information

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PRACTICE DESCRIPTION

Our practice extends a model of primary care provider (PCP)-facilitated, within-clinic, diagnostic assessment of children with early characteristics of autism spectrum disorder (ASD). The practice and associated training are tailored toward providers typically on the frontlines of developmental assessment including pediatricians, nurse practitioners, embedded behavioral-health providers, and other primary care supporting professionals.

As the primary touchpoint for children's health and wellbeing during the first years of life, PCPs are most families' first point of contact for discussions about developmental concerns and for post-diagnostic referrals and care. Unfortunately, children who screen at risk for ASD wait tremendous amounts of time for diagnostic assessment given workforce shortages and other barriers. Children from underserved communities (e.g., families in poverty and rural areas, racially/ethnically/linguistically-diverse groups) are disproportionality impacted by these service inadequacies. To decrease age of ASD diagnosis, enable earlier intervention, build inclusive medical homes, and address existing gaps in equitable care, we must support and train a primary care workforce to better act on ASD concerns and coordinate post-diagnostic care within the primary care setting.

The STAT-MD model emphasizes training in within-practice diagnostic triage and actionable frameworks for follow-up care by providing 1) access to expert-facilitated workshops, 2) training in diagnostic triage tools for use within primary care, and 3) access to an online suite of practice supports. Through this combination of intervention components, we hope to accomplish increased knowledge and self-efficacy for PCPs, create a system wherein these competencies and practice behaviors become the expected standard of care for PCPs, and that these changes will directly improve families' access to ASD-specific services.

CORE COMPONENTS & PRACTICE ACTIVITES

The goal of our program is to improve access to early diagnostic evaluations for ASD through innovative primary and community care models. Core components of this program include an evaluation model that utilizes the STAT and other standard evaluation components including record review, parent interview, informal structured observations, caregiver feedback, care coordination, and appropriate billing/coding procedures.

Core Components & Practice Activities		
Core Component	**Activities**	**Operational Details**
ASD Evaluation Training	Primary care or community clinic-based clinicians are trained to assess for ASD	Either through an in-person or virtual workshop, clinicians are trained to perform the STAT, interpret results, embed within larger ASD evaluation, and discuss results/indications with families

Materials	Clinical setting will need access to STAT materials	Clinic will need to access some standardized materials for assessment procedures
Ongoing training supports	Complete interactive online training modules	Learners will have access to asynchronous learning modules and supports reviewing 1) baseline competencies in ASD identification and screening, 2) action steps and universal resources to deploy in response to concerns/ASD risk, and 3) strategies and principles of culturally and linguistically competent ASD care
Ongoing supervision/consultation	Identification of clinical champion	Clinics implementing STAT-MD model will need to identify clinical champion who is able to oversee overall quality of ASD evaluations and provide consultation as needed. Clinical champions can be within own clinic, or external/remote
Administrative team	Identification of administrative team	Administrative team will need to be identified to support logistics of scheduling, care coordination, ASD resources/supports

HEALTH EQUITY

The STAT-MD program at its core is focused on increasing access to diagnostic assessment and post-diagnostic support via the medical home. The standard of care in many community pediatric settings is to screen for risk and then refer children to overtaxed tertiary diagnostic centers with lengthy waitlists. This system is not set up well for families that are multi-stressed, rural, or culturally/linguistically/racially-diverse given that access to specialty care is often prohibited by distance, transportation difficulties, time constraints, and/or comfort level of being in unfamiliar settings. These struggles highlight the need for novel systems of care and approaches to ASD screening, evaluation, and diagnostic decision-making that advance early detection within the medical home, thereby expediting information for these vulnerable groups. Specifically, providing the current and future primary care workforce with focal training in ASD identification tools and action steps as part of novel medical home structures could dramatically increase providers' capacity to engage more young children, especially those from traditionally marginalized groups, in prompt early assessment and meaningful, evidence-based intervention.

EVIDENCE OF EFFECTIVENESS

Our team has completed several studies assessing the feasibility, accuracy, and impact of community primary care training programs. This includes teaching providers to administer a brief interactive assessment, the

Screening Tool for Autism in Toddlers (STAT), that has yielded high levels of diagnostic accuracy, practice change, and increased numbers of children enrolled in early intervention. Our team's initial pilot using the STAT-MD model with pediatric medical providers showed high agreement with subsequent comprehensive evaluation (Warren et al., 2009). This was followed by widescale implementation of the STAT-MD model across our state showing significant changes in screening/consultation practices and high agreement with subsequent comprehensive evaluation (Swanson et al., 2014). We have also documented the feasibility and preliminary impact of training residents in formal ASD assessment using the STAT during their required developmental and behavioral pediatric rotations (Hine et al., 2021).

Ongoing data collection includes (1) gathering input from additional key stakeholders to discover ways to tailor the STAT-MD model to the specific needs/idiosyncrasies of clinical settings and (2) evaluating how the STAT-MD model affects the total number and characteristics of children referred/identified, family engagement, and the efficiency and cost-effectiveness of care.

COLLABORATORS AND PARTNERS

Practice Collaborators and Partners		
Partner/Collaborator	**How are they involved in decision-making throughout practice processes?**	**Does this stakeholder have lived experience/come from a community impacted by the practice?**
PCPs: Pediatricians, NPs, other pediatric care providers	PCPs implement practice but have also provided stakeholder information to increase feasibility and sustainability of model within their own practice.	Yes, PCPs provide care and information to parents of children with developmental differences.
Administrative support	Provide important logistical information, planning, and updates as to how to best embed model within a variety of settings	No
Caregivers of children with autism or developmental concerns	Caregivers are asked to be an active participant in the assessment of their child by providing developmental history and current concerns as well as facilitating key observations during evaluation	Yes, caregivers are the primary care providers for the children receiving services from the program
VKC TRIAD STAT Instructors and Consultants	Consultants coordinate the live, virtual, and online learning programs/platforms. They also provide ongoing follow-up consultation as needed	No

REPLICATION

Over the years, our team has completed over STAT-MD trainings across the US and in several countries. Published replications include a collaboration with providers from Medical University of South Carolina who provided this training to early intervention and medical providers across their state. Embedding within-practice risk assessment, in conjunction with modified state early intervention eligibility guidelines, resulted in a fivefold increase in toddlers enrolling in evidence-based therapy, with very low errors in diagnostic classification (only 2.5% false positives). In another collaboration with pediatric providers at the Indiana University School of

Medicine, our team trained pediatric care leaders in the STAT model; this team then developed a statewide early autism evaluation hub system, resulting in the largest published report of a primary care supported system for early ASD screening and diagnosis.

Rotholz DA, Kinsman AM, Lacy KK, Charles J. Improving early identification and intervention for children at risk for autism spectrum disorder. Pediatrics. 2017 Feb 1;139(2):e20161061.

McNally Keehn R, Ciccarelli M, Szczepaniak D, Tomlin A, Lock T, Swigonski N. A statewide tiered system for screening and diagnosis of autism spectrum disorder. Pediatrics. 2020 Aug 1;146(2).

INTERNAL CAPACITY

The STAT-MD model is implemented in a variety of settings and communities around the country and world. There are no universal standards for internal capacity, as each setting requires a different level of internal capacity.

The least resource-intensive way to engage with the STAT-MD model is for individual providers to review online modules and practice supports. In order to fluently integrate new skills into current practice, individual providers will need to assess their current background knowledge and experience with early identification/care of ASD, current clinic flow/volume and billing structures, and need for ongoing supervision or expert consultation. The modules and practice supports can be a stand-alone learning program, but sustained practice change will depend on the above factors.

PRACTICE TIMELINE

The Vanderbilt Kennedy Center TRIAD has several instructor-led programs with flexible timelines to meet the needs of the communities served. There are no standard timelines for implementing the practice; however, many of the initial trainings include a 1-2 day workshop and review of online modules (2-4 hours). For more information on this practice's timeline and specific practice activities, please contact Dr. Jeff Hine, Director of Primary Care Outreach and Training, VKC-TRIAD, directly at jeffrey.hine@vumc.org

PRACTICE COST

STAT-MD trainings are typically led by one or more STAT trainers who conduct workshops, speak to groups/organizations, and provide consultations. The cost to implement the STAT-MD model depends on many factors, including the setting, technology, the participants, and the time needed from instructors. Many of the supporting online modules (e.g., ASD in Primary Care Education [ASD-PRIME]) are open-access.

We are happy to share examples of categories for budget items that an organization may use in funding this work:
- STAT-MD instructor's hourly or project-based contractor fee (trainings and ongoing consultation)
- Travel to/from centers/homes, etc.
- Rent for the space to hold trainings (virtual trainings available)

- Supplies and office equipment including STAT kits/materials (http://stat.vueinnovations.com/licensing)
- Professional development and CME costs
- Clinic-specific administrative/scheduling support
- Resource development

For more information about practice costs, please contact Dr. Jeff Hine, Director of Primary Care Outreach and Training, VKC-TRIAD, at jeffrey.hine@vumc.org

LESSONS LEARNED

We are learning how to best engage busy providers who have endless responsibilities within busy clinics. Our team has been working hard to balance the required intensity of training to the typical workflow of a primary care provider. We learned that rather than offer our model as a "one-size-fits-all" approach, we instead want to be able to offer both families and providers choices and options when it comes to screening and diagnostic triage of young children at risk for ASD. We have learned to work closely with our PCP stakeholder team to improve STAT-MD as an adaptive and dynamic system that can offer a "suite" of tools to a range of providers in varied settings.

Another challenge that we have encountered is balancing the content of our STAT-MD workshops and more general online modules to the targeted learners, given that range in experience and comfort level for practices is broad. We have been careful to not create an overtaxing program where content is too heavy for busy providers. We designed the different iterations of the live/virtual workshops and the online modules to offer fundamental knowledge required for PCPs to be able to help families from first concern to post-diagnosis; however, have added a library of "entry-level" content for less-experienced learners. Also, we have been clear with our expectations for the reach of the "one-stop" workshops or online modules by themselves, intending that these training opportunities be used as part of a larger training program that entails hands-on practice, embedded clinical supports, and appropriate supervision and fidelity checks.

NEXT STEPS

We often receive requests for different adaptations to the STAT-MD training series (e.g., hybrid, remote consultation, embedding tele-diagnostic tools). This has included other entities charged with training practicing PCPs in their state as well as resident training programs. We intend to work in collaboration with these external groups to adapt learning modules and practice supports/tools as needed for a variety of settings, with the ultimate goal of creating a toolkit for dissemination. One future modification includes introduction of a larger set of observational tools that can be embedded within primary care settings or completely via telehealth. Some of the tools reviewed in STAT-MD are proprietary, thus, we intend to ensure a larger set of open-access tools to increase use/dissemination.

Our ultimate goal is to train the pediatric workforce to engage in competent ASD-related practices that improve access to timely diagnosis and intervention services for families, especially those from traditionally marginalized communities. We intend to assess family perceptions of brief primary care procedures related to ASD management, whether the process met family needs and answered their questions, whether the recommendations provided were useful and achievable, and whether the visit supported their understanding of their child's diagnosis and the resources available to them.

RESOURCES PROVIDED

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APPENDIX

- https://vkc.vumc.org/vkc/triad/training/stat/physicians/