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Implementing a Validated Developmental Screening Tool in a Rural Pediatric Primary Care Clinic to Enhance Early Diagnosis of Developmental Delays from Birth to 36 Months

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Executive Summary

Introduction of the Problem

According to the CDC, children age 3-17 years old, have a one in six chance of having one or more developmental disabilities (CDC, 2019). Early identification of developmental delays and disabilities are critical to a child's advancement in life and education. The Individuals with Disabilities Education Act (IDEA) Part C requires that children under 36 months found to have a developmental disability or delay be referred for Early Intervention (EI) services provided by each state (IDEA, 2018). The state of Illinois provides a variety of services for families that have children in need of EI services. Children may be referred for EI services by the healthcare provider or alternately families can request EI services through self-referral.

Studies have shown that EI for developmental delays improves academic outcomes for children when they receive services. EI services can drastically improve a child's performance in school by providing individualized assistive devices and training for children and families. EI helps prepare children to enter the school environment by strengthening development in the areas of delay and promoting achievement of developmental milestones. EI services specialize in the improvement of physical, cognitive, communication, self-help, and social or emotional skills for children from birth to 36 months of age. Some services can be rendered in the privacy of a child's home. Prompt referral for EI services can result in better academic performance for children entering kindergarten. Children that receive EI decrease their risk for inadequacy in school, dropping out of high school, teen parenthood, poor behaviors, and criminal activities, which are all risks associated with developmental delays (Gellasch, 2015).

Healthcare providers screen for developmental delays during wellness visits, identifying majority of children in need of EI services. The American Academy of Pediatrics (AAP)

recommends developmental screening of milestones at every wellness visit through age 21 years old. One rural pediatric clinic wanted to improve the quality of developmental screenings to ensure that they were optimally identifying children that may benefit from EI services. The pediatric healthcare providers wanted to follow best practice guidance by implementing a validated screening tool to maximize the number of children identified with developmental delays that are eligible for early intervention services. The clinic was previously using an in-house screening form to make referrals for EI services to children and families in need.

Literature Review

The literature review focused on childhood developmental screenings, EI services, IDEA, statistics on children with developmental delays, the impact of EI services on children, the long-term consequences of not providing EI services, AAP 2006 guidelines, and what screening tools are available for clinicians to screen children. In 2006, the AAP published guidelines recommending primary care providers use validated screening tools with at least 70-80% sensitivity and specificity (AAP, 2006). The AAP also recommends screenings during wellness visits at 9, 18, 24, and 30-months or when there is a concern (AAP, 2006).

A 2017 study reported that about 60% of pediatric clinics in the United States used standardized developmental screening tools, which is an increase in comparison to another study in 2015 that reported only about 23% of pediatric clinics used standardized screening tools (Gellasch, 2015; Moore et al., 2017). Standardized screening has been proven to identify developmental delays earlier than developmental surveillance alone (Guevara, et al, 2012; Vitrikas et al., 2017). Prompt identification of developmental delays and earlier receipt of EI services benefit children by improving life skills and school success. Studies show that 54-62% of children display an enhancement in appropriate behaviors, social relationships, cognition, and

an improvement in managing everyday activities upon completion of EI services (Gellasch, 2016).

Project Methods

The purpose of this DNP project was to assist the clinic in selection of a standardized developmental screening tool, implement use of this tool in practice, and to compare use of the standardized tool to the previous tool in terms of number of EI referrals and EI qualifications. Evidence from the literature review was used to choose two options for screening tools that best fit the needs of the rural pediatric clinic. The recommended tools were the Ages and Stages Questionnaire, 3rd edition (ASQ-3), and Pediatric Evaluation of Development (PEDS). The clinicians evaluated both tools and decided on the ASQ-3. The project was submitted to the Southern Illinois University Edwardsville institutional review board (IRB), approval was given as a quality improvement project and did not require further IRB approval process.

The ASQ-3 was implemented in June 2020 as the standardized screening tool. Office staff and providers were trained on how to administer and score the ASQ-3 via a PowerPoint presentation in May 2020. Parents were given the ASQ-3 upon arrival to their child's scheduled appointment. The completed questionnaires were scored by a medical assistant and reviewed with parents by a pediatric provider.

Deidentified copies of all ASQ forms for children from birth to 36 months of age seen in June and July 2020 were placed in a file for the researcher. Additional data obtained from the site included the number of children that qualified for EI during the implementation period. A pediatric nurse practitioner (PNP) performed a chart review for June and July 2019 to determine the number of children from birth to 36 months of age screened pre-intervention, the number referred for EI services, and the number who qualified for EI services. All data was entered into

an Excel spreadsheet for data analysis. The clinic pediatrician/owner, nurse practitioner, and medical assistant were administered a post project questionnaire to gain feedback for continued quality improvement.

Evaluation

The data was analyzed using descriptive data, percentage changes, and percentage differences. The data collected included the date of service, age, if an EI referral was made, and if the child qualified to receive EI services. There were significantly less children screened in 2020 (n=38) compared to 2019 (n=71), representing a 46.5% decrease. There was an even larger decrease of 81.8% in the overall number of children referred for EI services. In June and July 2020, only two children were referred to EI (5.3% of those screened) and both children qualified for services. Whereas in 2019, six children identified as qualifying for EI (8.5% of those screened) out of 11 (15.5% of those screened) that were referred. The average age of children referred to EI showed a decrease with the age of 10.5 months in 2020, compared to 13.9 months in 2019. The significant decrease in number of children screened and referred was due to an overall decrease in office visits due to the COVID-19 pandemic. The smaller sample size may have resulted in skewed data during the implementation period. While the decreased number of patients was expected, there was a significant decrease in the number of children referred for EI services that was not expected.

A post-intervention guided interview form was distributed to staff to obtain feedback on developmental screening with the ASQ-3 to inquire about their overall experience with using ASQ-3 during wellness visits, the feasibility for parents and staff, and if they noticed an improvement with EI referrals after implementation. One staff member stated, “[The ASQ-3 is] overall good... [and it is] a little more time consuming, but gives a lot of information...It is

reassuring for parents with concerns to a breakdown of where their child falls on the domain.” Regarding the decrease in the number of referrals, the same staff member said, “I wonder if we were over referring prior to this. It seems like this screening tool is preventing needless referrals.” All staff members in the office said that they like the ASQ-3 and they will continue to use it. Two staff members also mentioned having a little difficulty with the ease of use for parents in the problem solving and personal social domains. Overall, the clinic staff and parents were satisfied with the new developmental screening process.

The COVID-19 pandemic contributed to project limitations. The project lead was not allowed to meet in person at the clinic early in project development due to safety measures intended to slow the spread. Communication took the form of phone calls, emails, and text between the project leader, and clinic providers, and staff. Additionally, the pandemic caused a drastic decrease in patient volume at the clinic. The clinic established strict patient, staff, and visitor restrictions in an effort to prevent exposure to COVID-19. Overall changes in patient visits and office flow may have decreased the validity and significance of the data.

Impact on Practice

The implementation of the ASQ-3 in the rural clinic achieved a desirable outcome. Parents received more specific information about their child’s development that was broken down into domains. The ASQ-3 screening and subsequent education provided families with guidance about their child’s growth and development as well as what milestones to watch for. Children with developmental delays benefit the most when they can be identified as soon as possible and given a prompt referral for EI services. The practice benefited from a more efficient screening process that reduced the number of unnecessary EI referrals. Project data and provider interview indicate that previous screening tool may have resulted in over-referral to EI. Prior to

this project the clinic used a non-standardized developmental screening tool for which they could not bill insurance. The clinic can now receive reimbursement for administering the ASQ-3.

According to NASHP (2019), the state of Illinois provides Medicaid reimbursement at the rate of \$16.07 with the CPT code 96110 for screening a child with “AAP recommended tools.”

Conclusions

This DNP project resulted in the numerous positive outcomes. A validated development screening tool that met AAP guidelines and fit the needs of this rural pediatric clinic was selected and implemented. The early detection of developmental delays in children birth to 36 months was enhanced by reducing the number of unnecessary referrals sent for EI services. Additionally, it was found that the ASQ maybe more effective at identifying delays earlier than the previously used tool. During the implementation of the ASQ-3, it was found that remembering to select an age adjusted screening form for prematurely born children was a challenge. It was discussed and recommended that placing alert labels or stickers on the charts of prematurely born children, similar to allergy alert stickers, may help to remind staff to select an adjusted questionnaire for more accurate screening. Overall, this project was a success and has potential for further inquiry and expansion.

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