This is the second in a series of Assuring Better Child Health and Development (ABCD) III issue briefs focusing on promising methods participating states are using to improve care coordination and linkages among providers of primary care and other community services for young children and their families. This brief describes the new web-based referral and tracking system that Oklahoma built into its pre-existing Preventive Service Reminder System (PSRS). The state designed this web portal to improve care coordination for children with or at risk for developmental delays. The web portal is being used in the state’s four ABCD III pilot counties. The state is already considering ways to adapt the web portal to coordinate care for other populations.

The ABCD program is funded by The Commonwealth Fund, administered by NASHP, and designed to assist states in improving delivery of early child development services for low-income children and their families. The program assists states by strengthening primary health care services and systems that support the healthy development of young children. Since 2000, ABCD has helped 27 states create models of service delivery and financing through a laboratory for program development and innovation. The ABCD III Learning Collaborative began in October 2009. For more information about ABCD visit: http://nashp.org/abcd-history.

Through the Assuring Better Child Health and Development Learning Collaborative (ABCD III) five states (Arkansas, Illinois, Minnesota, Oklahoma, and Oregon) are enhancing child development by improving care coordination and linkages among primary care providers (PCPs) and other providers of community services for young children and their families. The ABCD III state initiatives began in 2009, and a number of early lessons have already emerged.

A key feature of the Oklahoma ABCD III project is the adaptation of an existing statewide information system as the basis of a web-based mechanism (“web portal”) for pediatric and community providers to make and track referrals for low-income children identified as at risk of developmental problems. The web portal is built into the state’s pre-existing Preventive Services Reminder System. Currently, pediatricians, Early Intervention specialists and public health officials in four communities are testing the online system. The goal is to expand the use of the web portal to pediatric providers across the state as well as to explore its implementation to assist other populations served by Oklahoma’s Medicaid program. The lessons from Oklahoma’s ABCD experience in implementing a web portal outlined in this brief may inform the efforts of policymakers in other states as they strive to improve care coordination. They include:
• Provide clinic staff with the appropriate training needed to successfully operate a web portal upfront, along with ongoing technical assistance following implementation. Use hands-on practice facilitation to tailor and advance the implementation of technology in practices and referral sites.

• Develop information-sharing mechanisms that meet federal privacy protections.

• Partner with community stakeholders to ensure continued success.

• Collaborate/partner with a university.

• Look at existing web-based tools and infrastructure to see if they can be enhanced for care coordination.

INTRODUCTION

Oklahoma’s ABCD III project, Connecting the Docs: Improving Care Coordination and Delivery of Developmental Screening and Referral Services in Oklahoma, aims to advance systemic changes designed to improve outcomes for young children with and at risk for developmental delays. With the support of the state project team, four communities (Canadian, Garfield, Pottawatomie, and Tulsa counties) are piloting interventions to improve care coordination and communication of referral outcomes between primary care and community service providers. Each community has a core team representing primary care practices, Early Intervention agencies, local health departments, care coordinators, and family support (via the Oklahoma Family Network – a family-to-family health information center). These county teams meet regularly to strengthen relationships and to work with state partners to identify community needs and fine-tune improvement strategies identified by the state team.

The project uses a multi-faceted “Facilitated Change” strategy to implement practice-based interventions. A key component of this strategy is two Practice Enhancement Assistants (PEAs or practice facilitators) who are based out of the University of Oklahoma Health Sciences Center. The PEAs support participating primary care practices as they implement the interventions conceived of by the state ABCD III team. The PEAs help practices conduct Plan-Do-Study-Act (PDSA) cycles, which are four-step, rapid cycles designed to test and analyze the impact of improvements on a small scale. The PEAs also provide technical assistance to help practices use resources developed by the state team. The PEAs have been critical in both developing and nurturing the county teams during the pilot process. Foremost among the resources the PEAs have helped practices and community service providers implement is a web-based referral and tracking system or “web portal,” which is meant to create: 1) an infrastructure to coordinate isolated

Table 1 – Key Partners in Oklahoma

<table>
<thead>
<tr>
<th>Partner</th>
<th>Agency and Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Intervention</td>
<td><strong>SoonerStart</strong> is Oklahoma’s Early Intervention (EI) program. SoonerStart is a joint effort of multiple state agencies, however, the Department of Education is the Lead Agency for EI.</td>
</tr>
<tr>
<td>Care coordinators</td>
<td><strong>Sooner SUCCESS</strong> provides care coordination for families, providers, and communities. Sooner SUCCESS sits in the Child Study Center Program at the University of Oklahoma Health Sciences Center. (See “University”).</td>
</tr>
<tr>
<td>Local health</td>
<td>Through the <strong>Child Guidance</strong> Program, local county health departments provide services to children and families including assessment, intervention, consultation, and education. The program is within the Oklahoma State Department of Health.</td>
</tr>
<tr>
<td>Family support</td>
<td>The <strong>Oklahoma Family Network</strong> (OFN) is a family-to-family health information center that provides peer support to parents of children with medical issues or disabilities. OFN also provides support groups for parents raising children with special needs or a disability.</td>
</tr>
<tr>
<td>Medicaid agency</td>
<td>The <strong>Oklahoma Health Care Authority</strong> houses the state’s Medicaid program, which is known as SoonerCare.</td>
</tr>
<tr>
<td>University</td>
<td>The <strong>University of Oklahoma Health Sciences Center (OUHSC)</strong> provides technical support for the Preventive Services Reminder System. OUHSC also supports Practice facilitators (Practice Enhancement Assistants) who provide technical assistance to the ABCD III pilots.</td>
</tr>
</tbody>
</table>
initiatives designed to ensure follow-up for referrals, linkages of subsystems, and monitoring of process and outcome measures; 2) a consistent single point of contact or service provision infrastructure across communities; and 3) a process to assure that families of children at risk for delay are connected with appropriate services.

**WEB PORTAL INFRASTRUCTURE**

The “web portal” is the mechanism participating pediatric practices and community partners in pilot counties use to initiate, follow-up on, complete, and communicate information about referrals for early childhood services in Oklahoma. The Oklahoma ABCD III team developed the web portal by building it into the pre-existing Preventive Services Reminder System (PSRS). PSRS is an open-source academic system designed and maintained by the University of Oklahoma Health Sciences Center (OUHSC) Department of Family and Preventive Medicine. OUHSC designed PSRS to help primary care practices improve preventive and longitudinal care. Preventive care recommendations are based on U.S. Preventive Services Task Force (USPSTF) guidelines.

PSRS was originally designed for networked Palm® handheld devices. The device would remind primary care providers (PCPs) to ask patients about past preventive services and current risk factors. The system is now accessible via a web browser from any web-enabled device, and it contains a number of elements and tools for PCPs including: an immunization registry, a secondary preventive services registry, visit and patient-specific recommendations at the point-of-care, data exchange with the state immunization registry, and routine data collection for practice-based research.5,6 The Agency for Healthcare Research and Quality (AHRQ) and the Medicaid agency (Oklahoma Health Care Authority) first funded the PSRS in 2002, and it has since been funded by a series of grants from the National Institutes of Health (NIH).7 The PSRS started as a way to track immunizations, but as it developed further, the state decided to add the capability to track well-child visits since they fit so closely with vaccine periodicity.

As a part of the Oklahoma ABCD III project, OUHSC has developed and added a new component to the PSRS: a “Request for Early Childhood Services,” also known among project participants as the “web portal.”

**HOW IT WORKS: OKLAHOMA’S LINKAGE PROCESS**

The web portal was designed specifically with the goal of improving care coordination for children with, or at risk for, developmental delays.8 The service linkage process in Oklahoma starts when the parent schedules an appointment for a child with a PCP. If the PCP is participating in the ABCD III pilot process and identifies a child with, or at risk for, developmental delays (for instance, concern about a motor delay), the PCP will enter a request for referral through the web portal. At this time the web portal shows the referral as pending. There are usually few pending requests in the web portal at a given time because referral agencies respond within 24-48 hours. This response time is due to statutory guidelines for Early Intervention that dictate that the agency must begin an initial response within two days.9

Once in the system, county-specific teams receive an email flag alert that a referral is pending. These county teams are composed of: Oklahoma’s Early Intervention (EI) Program; Sooner SUCCESS care coordination program (a collaboration between the OUHSC Child Study Center and the Oklahoma Department of Human Services); and Child Guidance (within the Oklahoma State Department of Health)(see Table 1). The agency most appropriate to meet the child’s needs triages the request for referral. Though the county teams had the option to choose which agency was the first to triage the request for referral, all four county teams – independently of each other – opted to have EI be the initial triage point.

When the appropriate agency receives and triages the request, the web portal lists the referral as processing. The appropriate agency then sends information around eligibility and what services the child will be receiving back to the PCP through the web portal, which then lists the request for referral as responded (for instance, undertaking an assessment that identifies motor delays that qualify the child for Early Intervention services, and a plan for physical therapy services to address the delay). At this point the PCP receives an email flag from the portal with a notification about the request for referral. The PCP then reviews the information sent back from the county team. Once the PCP indicates in the portal that s/he has reviewed the information, the referral process is completed (i.e., the primary care provider now has information in a medical record that indicates that the child is under the care of a physical therapist to address motor delays). The web portal does allow for a request to be withdrawn if the referral
was entered in error (i.e., a duplicate entry). For a map of the care coordination process please refer to Figure 1.

**Implementing the Web Portal**

The Oklahoma ABCD III team is aware that in order for the web portal to be sustainable, it must meet the needs of those it serves. To successfully implement the web portal, the ABCD III team has relied upon both clinic support and community collaboration. By implementing the web portal this way, the ABCD III team has been able to facilitate clinic adoption of the web portal while also remaining receptive to feedback from community partners.

**Clinic Support**

The Practice Enhancement Assistants (PEAs) mentioned previously work closely with participating primary care practice clinicians and staff to integrate the web portal into their everyday routine. The PEAs also provide technical assistance for the web portal. The PEAs train clinic employees on the web portal functions and provide IT support for installing the security certificate/user names/passwords for the web portal. Once the web portal is running, the PEAs remain available to offer technical assistance on the issues detailed above. They initially visit each clinic once every two weeks and provide additional support via telephone and email as needed. The Oklahoma ABCD III team has found that once the initial implementation is complete and the web portal is in use, requests for support decline quickly, from one or two minor questions a week, to one or two minor questions a month. Oklahoma estimates that one PEA can manage approximately 150 practices after they are fully operational with the web portal.

**Community Collaboration**

The Oklahoma ABCD III team has responded to feedback on the design of the portal since the beginning of the project. Counties and practices have significant latitude to determine how they will respond to requests within the web portal – there is no one formal method across the state. This flexibility is critical to the project’s success, as each county team can use the web portal in a way that is tailored to its specific individual, personnel, workflow, and population needs.

The ABCD III team also acts on suggestions for modifications to the web portal to make it more useful to the county teams. Changes to the web portal made as a result of community feedback include:

- the ability to search both by county and by referral, which enables PCPs to limit the search only to those who they have referred;
- the addition of a feature where PCPs can “hover” over a patient’s name with the mouse in order to see a quick snapshot of actions taken to date; and
- a secure messaging feature that allows direct communication between clinics and community teams.

The ABCD III team has also worked closely with its community partners to ensure that all participating team agencies or
organizations have access to the web portal. Since family support professionals are not medical providers, the ABCD III team is collaborating with state partners to provide the necessary privacy (i.e., HIPAA) training prior to granting Oklahoma Family Network (OFN) team members access to the web portal. To date, one OFN representative has received this training, and the team is in the process of training more. Simultaneously, the ABCD III team is fine-tuning consent forms to clarify which community partner organizations have access to the web portal.

By being open to feedback, the Oklahoma ABCD III team has made the web portal more useful and practical to practices and community teams, which helps ensure that it will be used beyond the duration of the project.

**Advantages of the Web Portal**

The web portal seeks to minimize the time and effort needed to initiate, track, and follow-up on referrals. Prior to its development, PCPs in Oklahoma did not have a standard tool to make referrals for early childhood services and receive feedback on those referrals. The web portal now serves that purpose. The project team originally intended to create a paper-based fax-back form. With a paper form, the burden is on the PCP to write in the child's demographic information and identify the appropriate referral agency. In contrast, the web portal pre-populates most of this information for the PCP; it includes the demographic information for all children enrolled in the state's Medicaid primary care management program (SoonerCare Choice). An interagency agreement between the state Medicaid agency (Oklahoma Health Care Authority) and the University of Oklahoma Health Sciences Center facilitates this data sharing.

The university pre-populates the web portal with local county team information. Therefore the PCP does not need to identify the referral agency or a specific contact at an agency. The web portal automates this process. Further automating the process, the state is developing a dual HIPAA/Family Education Rights and Privacy Act (FERPA) form for families to sign to ensure that a PCP with HIPAA approval can receive information about a child from Early Intervention.

Another advantage of the web portal is that it helps eliminate duplicate screening. PCPs are able to upload the results of developmental screening from the Ages and Stages Questionnaire (ASQ) and attach them to the referral in the web portal. They can also elect to document ASQ screening scores only, without attaching a scanned instrument. This expedites the referral process for families by clarifying when Early Intervention does not need to screen the child and can move straight into in-depth assessment.

Furthermore, the web portal and its associated email alerts enable pediatric practices to stay informed about follow-up services provided to patients by Early Intervention and community service providers. Without the web portal, pediatric providers might not know the results of a given referral, including whether the child was assessed, if the child qualified for services, and/or whether the child is receiving support services.

In addition to minimizing the burden on PCPs, the web portal also facilitates the state's ability to monitor and evaluate the model. The web portal indicates completed feedback loops (in which the PCP refers a child for services and receives information about the results of the referral) and provides the screening/referral documentation necessary for billing purposes. The design allows the Oklahoma ABCD III team to electronically review web portal usage to measure trends in referrals and track the average length of time a referral stays in each stage of the process by participating county. This information helps the ABCD III team identify any bottlenecks in the system or areas where additional improvement may be needed to help close the feedback loop.

**Financing**

The initial Preventive Services Reminder System was funded by a grant from the Agency for Healthcare Research and Quality (AHRQ) with additional support provided by the Oklahoma Medicaid agency, and began in 2002. Since 2004, however, the PSRS has been funded through a Career Development Award (K08), which was awarded to the developer by the National Institutes of Health. Since the child development piece of the PSRS and the web portal enhance the usefulness of the program, the K08 funds were able to be used to build the web portal into the Preventive Services Reminder System. ABCD III grant funds were used to support the pilots. The state is using ABCD III funds, as well as funds from a medical home contract, to fund the practice enhancement assistants. The activities of the web portal are closely aligned with medical home activities within the state.

**Results to Date**

The ABCD III team has been tracking the use of the portal in each of the four pilot communities as it has been
implemented. As of September 2011, there were 177 requests for referral in the web portal. Of these 177 requests, 85 percent (150) resulted in feedback to the primary pediatric provider, which is considered substantially higher than standard practice. Of this 85 percent of referrals for which there was pediatric feedback reported, about 75 percent (112) of the referrals were officially completed by the agency and reviewed by the pediatrician; 25 percent (38) showed that the local agency had determined eligibility and/or services and were awaiting pediatric provider review in order for the referral to be declared “completed.” An additional 12 percent (22) were processing, whereby the county team had received the referral from the pediatric practice and were undergoing the assessment to determine eligibility and services. The remaining referrals (about 3 percent of total requests) were either pending county team review (1) or withdrawn due to error (4). The state ABCD III team has found that the information flow process to date has, thus far, been useful and exciting for the participating communities.

Data from a previous University of Oklahoma Health Sciences Center project (“Helping Family Physicians Screen and Identify Children At-Risk for Developmental Delays”)14, which was funded by the Association of University Centers on Disabilities (AUCD) and the Centers for Disease Control and Prevention (CDC), included 862 chart reviews in three clinics. The chart reviews showed wide variability in the practices’ results, but overall, primary care providers identified 47 children as having or being at-risk for a developmental delay; they referred 14 of these children to Early Intervention, and they had information concerning the outcome of the referral for 8 of those 14 children. The aggregate result is documented feedback to primary care providers in 17 percent of charts (8 out of 47 children), which is much lower than the web portal data to date of 85 percent (150 out of 177 children).

**STATEWIDE IMPLICATIONS FOR CARE COORDINATION**

Oklahoma’s ABCD III team offered each of its pilot counties the option of using the web portal or the paper-based fax-back form. Some of the practices were hesitant to use the web portal at first; but after hearing positive feedback about the portal, all four pilot counties chose to implement it. Oklahoma has experienced declining state budgets and increased financial pressure in the wake of the recession. The notion of providing more efficient care coordination (i.e., simplifying referrals for PCPs, and eliminating duplication of efforts) makes it very attractive to the practices.

In an effort to sustain and spread the successes of ABCD III, the state is looking to capitalize on the popularity of the web portal within the pilot practices by sharing it with others outside of the ABCD III pilot who may find it helpful. The project team has found a lot of interest in the web portal within the state. A demonstration of the web portal within the state Medicaid agency (Oklahoma Health Care Authority) drew more than 60 personnel. Many attendees saw the portal as having uses and implications beyond ABCD III. Beyond child development, agency staff sees the web portal as an opportunity to potentially improve care coordination and service linkages for mental health and substance abuse services, among other ideas.

The ABCD III team is exploring these other uses/implications to ensure the sustainability and spread of the project. One potential future use of the portal for sustainability may be incorporating its use into Oklahoma’s medical home program, which provides enhanced payment to primary care practices that varies based on increasing levels of medical home capacity. In addition, the state Chapter of the American Academy of Pediatrics is exploring ways for the practicing physicians to earn Maintenance of Certification (MOC) credit if they learn the web portal system. Maintaining certification is required for pediatricians every ten years.

**LESSONS LEARNED**

The Oklahoma ABCD III team has learned a number of lessons while developing and implementing the web portal.

- **Provide the appropriate training up front, along with ongoing technical assistance following implementation.** The PEAs devoted significant time to training individual practices at implementation. The training was tailored to each individual practice so that the web portal would best fit with that practice’s workflow. The PEAs’ demonstrations and assistance with implementation and IT issues helped address some initial concerns in some practices about using a new tool (the web portal) while they were implementing other technology, such as electronic medical records. The PEAs have remained involved post-implementation and provide continued technical assistance.
Develop information-sharing mechanisms that meet federal privacy protections. Oklahoma developed security certificates to ensure only authorized persons have access to the portal. These certificates dictate which computers can access the portal. This greatly increases security and makes the portal a secure, HIPAA compliant, web-based framework. The state also developed a dual HIPAA/FERPA consent form to ensure that a PCP with HIPAA approval can receive information back from Early Intervention. With this form in place the state was able to add boxes to the web portal to indicate that HIPAA and FERPA consent are on file.

Partner with community stakeholders to ensure continued success. The Oklahoma ABCD III team has been very accessible and receptive to the practices and county teams piloting the web portal and this has resulted in positive feedback. The state has listened closely to feedback from community partners on what would make the portal more useful and made revisions to meet their needs. Examples of these improvements include the addition of check boxes at the bottom of the response page to indicate whom among the four partners touched the referral during the process and the addition of gentle guidance cues in the web interface to prevent and educate about system mismanagement, yet are minimally intrusive to workflow.

Collaborate with a university. The Oklahoma Medicaid agency's partnership with the University of Oklahoma Health Sciences Center is extremely fruitful and has been fundamental to the development and success of the web portal. Based out of the university, the practice facilitators have been instrumental in the implementation and continued technical assistance of the project. The university benefits from this partnership by learning more about the dynamics of early childhood referrals that can be used in the future to design and study similar interventions that improve the quality of care. Additionally, work on the ABCD III project informs and enhances university researchers’ past and current research on child development.

Look at existing tools to see if they can be enhanced for care coordination. As mentioned earlier, the PSRS, developed with funding by AHRQ and the Medicaid agency, was already considered a useful and well-accepted tool among PCPs. The Oklahoma ABCD III team was able to build the web portal into this already existing system, simultaneously improving its functionality and supporting care coordination. Other states should look at existing resources upon which to build an electronic system to facilitate referral and follow-up among various providers. Immunization registries, for example, might provide a useful platform from which to begin to build a care coordination information system.

CONCLUSION

Oklahoma’s web portal has emerged as an effective tool to coordinate care and share information across multiple providers on referrals and follow-up services for young children within four communities. Furthermore, the web portal’s popularity has ensured not only its success in all of the pilot counties, but has also garnered interest from other stakeholders as well. The Oklahoma ABCD III team plans to use this interest to support its sustainability and spread throughout the state. The state plans to provide continued support for the web portal to make it more valuable to practices. Additionally, the state plans to explore avenues for expanding the web portal to other populations with the knowledge that doing so will likely ensure not only the web portal’s survival and spread beyond the project but also advances in care coordination more broadly.

ENDNOTES

1 For more information about ABCD III please visit the National Academy for State Health Policy's (NASHP), “About ABCD III” page: http://nashp.org/abcd-history.


3 For more information about the Oklahoma Family Network visit: http://www.oklahomafamilynetwork.org/.

4 Hanlon and Rosenthal, Early Lessons, pg. 19.


7 Ibid, pg. 33.

8 For a thorough explanation of the web portal and how it fits in the Preventive Services Reminder System please see the presentation by Zsolt Nagykaldi, Assistant Professor of Research and Clinical IT Specialist, at the University of Oklahoma Health Sciences Center, in Tracking Linkages: A Closer Look at Data tools in Minnesota and Oklahoma. Available here: http://www.nashp.org/webinars/abcd-eval-workgroup/lib/playback.html.


11 If the child is not enrolled in SoonerCare Choice the PCP can still use the portal, but must enter that child's demographic information.


16 Providers must reach MOC requirements to remain board certified by the American Board of Pediatrics (ABP); practices can conduct quality improvement projects that meet the standards set by the ABP in order to maintain certification. Oklahoma is also exploring the option of setting use of the web portal as a tool that could help PCPs achieve medical home recognition. For more information please visit: https://www.abp.org/ABPWebStatic/?anticache=0.37695307220874186#murl%3D%2FABPWebStatic%2Fmoc.html%2F3d%2Fmocwebsite%2Fmoc%2FAboutmoc%2Fmoc%2Fmaintenanceofcertification%2Fmoc%2F4eprtstructure.html.