Managing Care for Students with Chronic Conditions: Examples of Shared Use of Electronic Health Records by Health Systems and Schools

Thursday, February 18, 2016
2:00 – 3:00 PM ET
Housekeeping

• All participant lines are muted
• Type questions into the Questions box
• Technical difficulties? Use the questions box
National Association of Chronic Disease Directors (NACDD) is comprised of over 6,000 specialized chronic disease practitioners working in public health departments across all 50 States and US Jurisdictions to prevent and control chronic disease.

The School Health Project assists Chronic Disease Directors and their staff to make informed decisions about a variety of school health issues.
Disclaimer

• This webinar was produced under a cooperative agreement with the Centers for Disease Control and Prevention (CDC).

• Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NACDD or CDC.
Learning Objectives

At the end of this webinar, participants will be able to:

• Explain how use of electronic health records (EHR) can improve delivery of health care and meet children’s health needs.

• List three key recommendations the state and/or local level examples provide to promote shared use of EHR between health systems and schools.

• Identify at least two actions you can take that apply information and tools/resources from the webinar to improve the management of chronic conditions in schools.
Presenters

Amanda Martinez, Public Health Consultant, NACDD

Freddi Adelson, School Nurse Consultant, Wisconsin Department of Public Instruction
Presenters

Margo Lalich, Director, School Health Services, Multnomah Educational Service District

Claudia Kane, Population Health Specialist III, Nemours Children’s Health System
EMR and EHR

• “Electronic medical records (EMRs) are digital versions of the paper charts in clinician offices, clinics and hospitals. EMRs contain notes and information collected by and for the clinicians in that office, clinic or hospital and are mostly used by providers for diagnosis and treatment.”

• “Electronic health records (EHRs) are built to go beyond standard clinical data collected in a provider’s office and are inclusive of a broader view of a patient’s care.” EHRs contain information from all the clinicians involved in a patient’s care and all authorized clinicians involved in a patient’s care can access the information to provide care to that patient.”

Increasing EHR Adoption and Use

• Per 2014 National Electronic Health Records Survey:
  – Certified EHR systems in physician offices increased from 2013 to 2014, from 67.5% to 74.1%
    (http://www.cdc.gov/nchs/data/databriefs/db236.htm)

• Per AAP survey of their membership:
  – EHR use in pediatric offices increased from 58% in 2009 to 79% in 2012
  – Barriers to EHR system adoption and implementation:
    Financial, organizational, legal or regulatory barriers, state of technology, content lacking pediatric functionality
    (Lehmann, CU, O’Connor, KG, Shorte, VA, Johnson, TD, 2015, http://pediatrics.aappublications.org/content/135/1/e7)
Increasing EHR Adoption and Use

• EHR use in hospitals increased, 76% non-federal acute care hospitals had adopted at least a Basic EHR system in 2014 and there is increasing advanced functionality (https://www.healthit.gov/sites/default/files/data-brief/2014HospitalAdoptionDataBrief.pdf)

• Numerous IT vendors (http://dashboard.healthit.gov/quickstats/pages/FIG-Vendors-of-EHRs-to-Participating-Professionals.php)
Care Coordination and EHR Adoption and Use – An Opportunity

• Promoting effective communication and coordination of care, a national priority
  (http://www.ahrq.gov/workingforquality/about.htm#priorities)

• Among the benefits of EHR, role in improving care coordination
  – “...Better integration among providers by improved information sharing
  – Viewable and up-to-date medication and allergy lists...
  – More convenient, faster, and simpler disease management.”
  (as cited https://www.healthit.gov/providers-professionals/improved-care-coordination)
Shared Use of EHR Between Health Systems and Schools: Can It Help?

- Children with medical complexities, chronic health conditions
  [https://www.childrenshospitals.org/~/media/Files/CHA/Main/Issues_and_Advocacy/Key_Issues/Children_With_Medical_Complexity/Fact_Sheets/Defining_Children_With_Medical_Complexities_100113.pdf]

- Experiencing fragmentation in health care, interfacing with multiple health care providers

- Many children with chronic conditions are in schools and require management during the school day

- Key role of school nurse
Poll Question

For those working at the state or locally, to what extent is EHR data shared between health system(s) & school(s)?

- No EHR use in schools at this time
- EHR use in schools, no access to health systems’ EHR
- Exploring shared EHR use, not yet initiated
- Implementing shared EHR use
Managing Care for Students with Chronic Conditions: Examples of Shared Use of Electronic Health Records by Health Systems and Schools

Wisconsin Partnership

Freddi Adelson, MS, RN
School Nurse Consultant
Statewide - Wisconsin

In 2013-14:

- 426 school districts
- Statewide enrollment: 874,414
- School Nurse FTEs: 442, Ratio 1:1649 students

- Local Control
- No law requiring school nurses only provision for “emergency nursing services”
- Voluntary participation in annual data collection for school nurses; in 2014-15, 30% of school districts reported (using NASN/NASSNC Step Up and Be Counted data points)
Healthy Learner Collaborative

• Group started meeting in 2009
• Includes nurses from schools of nursing, clinical practice settings, public schools, Head Start, and nurse administrators from the American Family Children’s Hospital - all with an interest in improving care for children with chronic conditions
• Based on the *HLM for Chronic Condition Management* from Minneapolis & St Paul Public Schools and described in detail in articles from JOSN, 2006
• Our group developed a vision and mission, met monthly, and sponsored annual events for school nurses
Healthy Learner Collaborative Vision

Working together, we will ensure that students with chronic conditions achieve optimal health, robust school attendance, and daily readiness to learn.
Healthy Learner Collaborative Mission

• Recognize, develop, and support the essential role of the school nurse, including the vital roles of leadership and advocacy.
• Identify and promote systems of collaboration among school nurses, educators, students, families, and health care providers including clinic nurses.
• Promote the use of evidence-based best practices to guide nursing practice.
• Promote the use of a preventative model to enable students to function at full potential especially during transitions, both developmental and between systems.
• Partner with health care systems, families, educators, and community members to support school nursing practice.
Improved Communication

School Nurse Access to the EMR

- Nemours Children’s Health System, Delaware
  NemoursLink®

- Portland, Oregon

- School Nurses employed by Children’s Hospital of Wisconsin
Improved Communication

- Minnesota and the Mayo Clinic - electronic portal
  - Improved ability of the school nurse to make critical decisions and efficiently care for students with asthma
- Overall well-received by school nurses with limitations
  - Communication with PCPs remained a problem
  - School nurses were still unaware of recent asthma exacerbations, hospitalizations and changes in care
  - School nurses were unclear on how recently the AAP available in the portal was updated

Networking

1. Who to include?
   – Health Informatics/IT
   – Hospital and health care organization management (e.g. chief medical officer)
   – Legal counsel
   – Privacy officer
   – Primary and specialty care providers
   – School nurse administrators

2. What would be their questions/reservations/objections?

3. We shared our vision
   – School nurse as integral part of health care team
   – Bidirectional communication between school nurse and health care provider
Asthma Action Plans

• The health care provider completes the asthma action plan (AAP) and obtains consent from the patient or guardian to release this information to schools.

• With this current process, 1% of students with asthma in Madison Metropolitan School District schools have an asthma action plan at school.
Simultaneous Initiative

American Academy of Asthma, Allergy & Immunology (AAAAI) presidential initiative

– Improve school based management of asthma
– Ensure that students with asthma have asthma action plan at school
Everything Came Together
Grant Award and Timeline

• June 2015: Submitted grant application to US Dept of Health and Human Services, Office of the National Coordinator for Health Information Technology
• September 2015: Notified of award
• November 2015: Kick off meeting with CareLink School Health Partnership team
• April - May 2016: Pilot
• September 2016: Full implementation
Using EpicCare Link for School-based Asthma Care

• EpicCare Link offers a read only version of Epic that is web based with service oriented features that makes it ideal for community based collaborative
  – Secure messaging feature for bidirectional communication
  – Also allows for web based viewing and communication
  – Activate an event monitor function when an AAP is updated
Goals

To Improve:
1. Percentage of asthma action plans completed by providers
2. Percentage of asthma action plans available to school nurses in grant district
3. Communication and care coordination with school nurses and primary care providers including transmission and use of AAPs in school
4. Asthma care administered by school nurses
5. Asthma control in pediatric asthma patients
Workflow

Input
- IT (FTE and build) for School EpicLink
- HIPAA training for school nurses (provided by UW)
- Epic training for school nurses (provided by UW)
- Implementation staff FTE (PI, school nurse liaisons, MMSD IT)
- Legal support (provided by UW)

Activities
- HIPAA training
- EMR training
- Coaching of school nurses during school year re: EMR, workflow, messaging, privacy

Outputs
- Number of school nurses completing EMR and HIPAA training
- Number of school nurses with available school nurse liaison

Intermediate outcome
- Number of available asthma action plans sent to schools via EMR
- Number of successful information bundles sent via the EMR

Initial outcome
- Number of school nurses querying the EMR appropriately
- Number of school nurses utilizing EpicCare Link messaging to PCP
- Number of PCP sending alerts (measured by event monitor notifications in EpicCare Link) to school nurses regarding changes to asthma care

Results
- Increased care coordination among patient, school nurse and PCP
- Increased asthma control (ACT scores)
- Decreased school absences, school nurse and health care visits due to asthma
How Do We Measure Success?

• EMR meaningful use and interoperability
  – # of new healthcare users (school nurses) to the EMR
  – # of new secure messages from the school nurse to PCP
  – # of charts appropriately queried

• Asthma care
  – Asthma Control Test (ACT) Scores
  – Asthma Medication Ratio (AMR)
  – Health care utilization – PCP, urgent care, school visits
  – Insurance coverage

• Patient, provider and school nurse satisfaction (survey)
Anticipated Challenges

• Workflow Changes
  – How to handle communication with families that now involves a third party
  – How busy school nurses work this into their daily workflow
  – Ensuring that the patient remains at the center of the loop

• Address scalability to other providers and conditions
Scalability

• Once the system is built, it can be used to help track other chronic disease processes
  – Food Allergy
  – Obesity
  – ADHD
  – Sickle Cell Disease

• Can provide essential community partnerships to address:
  – Transitions of Care
  – Disparities of Care
Pearls

• Get your buy-in first. Don’t come to the table until all are on board
• Think about what you can offer them
• Use your resources (e.g., Nemours) as you move forward
Managing Care for Students with Chronic Conditions: Examples of Shared Use of Electronic Health Records by Health Systems and Schools

Multnomah Educational Service District, Oregon

Margo Lalich, BA, RN, MPH
Director, School Health Services
District Background

• Multnomah Education Service District (MESD) - Portland, Oregon
• 100K+ students ages 3 - 21 years; 8 school districts, 172 schools, 450 square miles
• Comprehensive school health services program
• Largest school health program in Oregon, 50% of school nurses in Oregon work for MESD
School Health Services Structure

- Director
- Coordinator
- Supervisors 4-5
- School Nurses
- Program Nurses
- 1:1 Nurses
- Special Needs Nurses (SNN)
- Nurse Consultant

- Nurse on Special Assignment (NOSA) – Nurse mentor to new hires
- Screening Team
- Immunization Team
- Outdoor School – Outdoor education program
- School Health Assistants
Role of Special Needs Nurses (SNNs)

- 4 full time SNNs providing case management to 162 students and consultation to all school nurses
- 35 students receive daily nursing care from 1:1 RNs and LPNs
- Lead position to coordinate healthcare of students with complex and chronic health needs
- Assess health needs of referred students
- Facilitate coordination of health services
- Provide consultation to building nurses
- Liaison between parent, school community, medical providers
- Multidisciplinary team member for Individual Education Plan (IEP)/Individual Family Service Plan (IFSP)
Definitions from HB 2693

- **Nursing Dependent**: Students require 24 hours/day 1:1 skilled nursing assessment and care—i.e. immediate availability of RN/LPN on premises and within audible and visual range of student.

- **Medically Fragile**: Students face daily the possibility of a life-threatening emergency requiring the skill & judgment of a professional nurse i.e. full-time nurse in the building/on the premises.

- **Medically Complex**: Students have a complex and/or unstable physical and/or social-emotional condition that requires daily treatments and close monitoring by a professional.
We Wish...

• “...we had access to the hospital EMR. It would make our job so much easier.”
Background

• 2013 - Adopted School EMR (HealthOffice Anywhere)
• 2014 - Supplied portable scanners to all nurses allowing real-time uploading of health documents into EMR.
• 2014 - SNN access to Oregon Health and Science University (OHSU) EHR (Epic)
• 2016 - Only school nurse program with electronic documentation system in Oregon
Background

• In July 2014, MESD School Health Services (SHS) met with pediatric team at OHSU to discuss the delivery of nursing care in the school setting to students with complex health needs.
• Meeting with team of pediatricians, led to focusing on the care coordination of established OHSU patients and providing the SNNs access to OHSU Connect as the most strategic next step.
• Quarterly reports have been provided to the team of physicians.
• The SNNs have had access to the OHSU EHR for one complete school year.
• In August 2015, MESD SHS contracted with evaluator to assess the impact on care coordination and student outcomes following access to the OHSU EHR. The project is scheduled to be complete by June 2016.
The Value of Access

• The right information, at the right time, for the right reason
• MESD SNNs are essential partners in optimizing the delivery of healthcare in the school setting
• Improve mutually desired outcomes related to the Triple AIM
• Improve continuity of care
• SNNs crucial link between the care being prescribed by the provider, delivered in the home and in the school setting: consistency and accuracy
• Students spend a 1/3 of their day in school
• Care in the school should be consistent with care in the home
The Value of Access

• Improve communication between providers and SNNs, decrease faxes and phone calls increasing staff efficiency

• Assure accuracy and consistency of care for all students including those new to culture who have limited health literacy

• Rapid access to information will improve student safety and attendance

• Timely information from the SNN supports physicians treating and managing care more effectively meeting the Triple AIM
OHSU – MESD School Health Services
Care Coordination

• Goal: To ensure the safety of students by providing the highest standard of nursing care in the school and community setting so that every student has the opportunity to achieve their educational potential.

• 2014-15, 27 of the 162 students receiving direct case management are receiving primary and tertiary care from OHSU
What Matters?

• Student health and safety
• Student attendance and participation
• Family engagement
• Timely, accurate, and equitable care
Research Questions

• How does access to OHSU EHR impact the coordination of care in the school for students with complex medical health needs?
• Does access to OHSU EHR impact outcomes for students attending school?
• What are the key elements of coordination of care and access to OHSU EHR that impact outcomes for students with complex medical health needs?
SNN Feedback: 2014-15 Example Quotes

• Ability to access a complete list of medical problems helps me to get a better idea of the child’s health and how to care for them in school.

• Check full list of medications and dosages, not just what’s given at school.

• Quicker start or return to school. EMR removes barriers that prevent us from moving forward in a timely manner. We are able to immediately get to work on preparing to safely care for the student at school.

• I was able to access the records in EMR, contact the physician for parameters to have in place at school and facilitate a safe and timely return to school.
SNN Feedback: 2014-15 Example Quotes

• Healthcare knowledge gained from EPIC has helped me in working with the student at school to becoming more independent at school.
• Quickly able to get signed orders. As a result I was able to train staff and facilitate a quick re-entry into school.
• Track a student’s hospitalization and plans for discharge so that everything is in place when they return.
• Check upcoming appointments and email OHSU concerns that I have.
Program Evaluation Timeline

• 2014-15
  – Access to OHSU EHR
  – Periodic meetings with medical team/social workers
  – Collect anecdotal data
  – Submit quarterly reports to medical team

• 2015-16
  – Contract with program evaluator
  – Develop evaluation surveys
  – Draft report
  – Present results
  – Engage other health systems
Lessons Learned to Date

• More often than not the primary care provider is not the one writing the orders for the student.
• The nurse is the liaison between the providers.
• Providers have limited knowledge of what is required to provide nursing care in the school setting.
• Nurses are experiencing less stress, feel safer in their practice, and want expanded access for caseload assigned to other health systems.
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Delaware’s Student Health Collaboration

Claudia Kane, MS
• School nurses requested improved communication with Nemours clinicians and access to health information of their students/Nemours patients.

• School nurses were not routinely recognized as part of the care team and therefore not able to access protected health information found in the medical record which would improve health outcomes for their students, our patients.

• A multi-disciplinary team was formed to develop a way to facilitate the exchange of medical/education information between school nurses and Nemours clinicians.
The Unique Delaware Formula

- Delaware Department of Education laws require a Registered Nurse in every public school building
- Nemours is the only pediatric health organization in Delaware
  - Providing about 25% of the pediatric primary care services
  - Providing pediatric specialty care
  - Providing pediatric emergency services
- Nemours electronic medical record (Nemours One – EPIC) has a community portal branded as NemoursLink®
- Progressive Delaware school nurses who are very passionate on behalf of the students they care for
- Delaware is a small state with three counties
Contracts / Consents

Partner Agreement: 
Signed by Superintendent or Principal

User Agreement
Signed by the school nurse

Parent/Patient Authorization
Signed annually

http://www.nemours.org/health-professionals/nemourslink/student-health-collaboration.html
• DSNA Conference includes School Nurse Training at Nemours duPont Hospital for Children

• Broad Provider Awareness – Overview sessions (Primary Care/Specialists e.g. cardiology, orthopedics, neurology, ophthalmology, concussion clinic)

• Care Team Meetings (*Meet and Greet*) with Primary Care

• This year: Community Café with School Nurses, Advanced Practice Nurses and Specialty Nurses from hospital
NemoursLink® is based on EpicCare Link, which is licensed from Epic Systems Corporation.

Pilot go live in 2005 with 3 Primary Care practices in the Delaware Valley.

2006 roll out to Delaware Valley and Florida primary care practices.

2009 began to allow non-Primary Care practices to join (referring providers).

2012 Student Health Collaboration.
Nemours providers and clinicians can use the SnapShot to verify a patient’s participation in the Student Health Collaboration program.

In the Care Team section of the SnapShot (bottom left) the school district will be identified.

Scanned auth forms located in Media section of EPIC
## Patient List

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>MRN</th>
<th>ID Type</th>
<th>Sex</th>
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<td>Fam Med</td>
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### Physical Examination Form

**Name:** April Zztest Jr. (DOB: 8/8/2002)

#### PHYSICIAN REMINDERS
1. Consider additional questions on more sensitive issues.
   - Do you feel stressed out or under a lot of pressure?
   - Do you ever feel sad, hopeless, depressed, or anxious?
   - Do you feel safe at your home or residence?
   - Have you ever tried cigarettes, chewing tobacco, snuff, or dip?
   - During the past 30 days, did you use chewing tobacco, snuff, or dip?
   - Do you drink alcohol or use any other drugs?
   - Have you ever taken anabolic steroids or used any other performance supplement?
   - Have you ever taken any supplements to help you gain or lose weight or improve your performance?
   - Do you wear a seat belt, use a helmet, and use condoms?

2. Consider reviewing questions on cardiovascular symptoms (questions 6–14).

#### MEDICAL FINDINGS

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<thead>
<tr>
<th>Item</th>
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<tbody>
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<td>Appearance (Marfan stigmata, kyphoscoliosis, high-arched palate, pectus excavatum, achondroplasty, arm span &gt; height, hypertelorism, myopia, MVP, aortic insufficiency)</td>
<td></td>
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<td>Eyes/ears/nose/throat • Pupils equal • Hearing</td>
<td>Normal</td>
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<td>Lymph Nodes</td>
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<td>Heart • Murmurs (auscultation standing, supine, +/- Valvular)</td>
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<tr>
<td>• Location of point of maximal impulse (PMI)</td>
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<td>Pulses • Simultaneous femoral and radial pulses</td>
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<td>Lungs</td>
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#### MUSCULOSKELETAL

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<th>Area</th>
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<td>Neck</td>
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<td>Normal</td>
</tr>
<tr>
<td>Functional • Duck-walk, single leg hop</td>
<td>Normal</td>
</tr>
</tbody>
</table>

*Consider ECG, echocardiogram, and referral to cardiology for abnormal cardiac history or exam.
*Consider GU exam if in private setting. Having third party present is recommended.
*Consider cognitive evaluation or baseline neuropsychiatric testing if a history of significant concussion.
Asthma Action Plan - Asthma Action Plan (Notes from 09/30/05 through 09/28/15)

Asthma Action Plan by Elizabeth Crowe, MD at 9/20/2015 10:33 PM

Author: Elizabeth Crowe, MD  Service: (none)  Author Type: Physician
Filed: 9/20/2015 10:34 PM  Note Time: 9/20/2015 10:33 PM  Status: Signed
Editor: Elizabeth Crowe, MD (Physician)
Asthma Action Plan for
DOB:

Green Zone: All Clear
This is where you should be every day!

<table>
<thead>
<tr>
<th>No coughing or wheezing</th>
<th>Sleeping well</th>
<th>Able to run and play</th>
</tr>
</thead>
</table>

Take these medicines every day: Flovent HFA 44 mcg 2 puffs by metered dose inhaler 2 times per day with spacer device

Use Flovent twice daily during spring and fall allergy seasons. Start Flovent at the start of cold symptoms in the winter.

• Follow your asthma trigger control plan to avoid things that bring asthma.
  Avoid these triggers:
  Cigarette smoke
  Colds/Flu
  Pollen

Yellow Zone: Caution
This is NOT where you should be every day.

<table>
<thead>
<tr>
<th>Coughing</th>
<th>Wheezing</th>
<th>Short of breath</th>
<th>Chest feels tight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard to run and play</td>
<td>Coughing wakes you up at night</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Start taking Albuterol HFA 2 puffs by metered dose inhaler now
   If you feel better in 20 minutes, then take Albuterol HFA 2 puffs by metered dose inhaler every 3-4 hours for 2-3 days.
2. If you don't feel better within 20 minutes, repeat step #1 and call your doctor.
3. If symptoms get better, but relief doesn't last 4 hours, take
   Albuterol HFA 4 puffs by metered dose inhaler now and call your doctor.

Call your doctor at Dept: 302-378-5100 for more instructions.
Discharge InstrucBons

Discharge Documentation and Orders

Discharge Information

<table>
<thead>
<tr>
<th>Discharge Provider</th>
<th>Date/Time</th>
<th>Disposition</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sylvie M.H. Lebel, MD / 302-651-4200</td>
<td>07/08/15 1624</td>
<td>DC to Home or Self-Care</td>
<td>(none)</td>
</tr>
</tbody>
</table>

Discharge Orders

Discharge Summary Note

Discharge Summary

Printed AVS Reports

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Report</th>
<th>Action</th>
<th>User</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/8/2015 4:15 PM</td>
<td>DISCHARGE INSTRUCTIONS</td>
<td>Printed</td>
<td>Alicia Alexander, RN</td>
</tr>
<tr>
<td>7/8/2015 4:15 PM</td>
<td>AVS Signature Page</td>
<td>Printed</td>
<td>Alicia Alexander, RN</td>
</tr>
<tr>
<td>7/8/2015 3:46 PM</td>
<td>DISCHARGE INSTRUCTIONS</td>
<td>Printed</td>
<td>Alicia Alexander, RN</td>
</tr>
<tr>
<td>7/8/2015 3:46 PM</td>
<td>AVS Signature Page</td>
<td>Printed</td>
<td>Alicia Alexander, RN</td>
</tr>
</tbody>
</table>
Research and Evaluation Overview

Study 1
Nemours Provider Interviews

Study 2
School Nurse Surveys

Study 3
Diagnoses profiles of students in SHC

Study 4
Healthcare Utilization

Study 5
Parent Survey

Parent / Guardian

Nemours Provider

School Nurse

Student
Study 1: Nemours Provider Interviews

Communication Efficiencies

Time 1

- Specialty group nurses reported communication inefficiencies, e.g. “long list of calls” from school nurses
- Especially time consuming early in school year regarding medication discrepancies
- Nurses in primary care practices reported that current communication system is “time consuming,” involves “a lot of paper work” and described as “busy work.”
- Phone messages problematic: don’t know if urgent (e.g. about an acute episode) or request for paperwork or forms needing completion

Time 2

- Communication efficiencies
  - “.....So this for us eliminates the nurses having to call us every time that there’s a dose adjustment that’s made...they can see them on their own.”
- Time saved
  - “It has saved time – school nurses don’t have to call with every little thing, for example kids with bleeding disorders...before they would have to call to know what to do, when to give meds, how long to let the nose bleed go -- and now ...guidelines for how to care for this child have saved a considerable amount of time and reduced the length of calls.”
Study 2: School Nurse Survey Results

The Student Health Collaboration
IMPROVING COMMUNICATION. ENHANCING STUDENT HEALTH.

IMPROVING CARE COORDINATION AND QUALITY:
FINDINGS FROM THE SCHOOL NURSE SURVEY

September 12, 2013

Marina Kaplan, PhD, and Jia Zhao, PhD

Introduction
School nurses provide essential nursing care to children, many of whom have complex medical conditions that require careful management and care coordination. Delaware is somewhat unique in mandating a full-time, registered nurse in every school. As such, Delaware public school nurses are positioned to be functionally involved in children’s health care on a day-to-day basis, making them a critical component of a child’s health care team. Recognizing this, a multidisciplinary team was formed by Nemours, the Delaware Department of Education and the Delaware School Nurses Association to develop a means to facilitate the exchange of critical medical/education information between Nemours clinicians and school nurses via NemoursLink®, a web-based portal into Nemours’ electronic health records. Contractual agreements with Nemours and parental consent are required for school nurse read-only access to a patient health record. This innovative and groundbreaking program is referred to as the Student Health Collaboration (SHC). The three broad aims of the SHC are to: (1) Enhance quality of care (2) Improve health of the population and (3) Reduce cost of care.

The Present Study
The purpose of the present study was to evaluate the effectiveness of the SHC from the perspective of Delaware school nurses. We used a single group pre-post survey (electronic surveys) methodology to collect data regarding changes in school nurse perceptions of care coordination, communication, access to medical information, enhanced delivery and quality of care, as well as reported utility and usability of the NemoursLink® tool itself.

Response rates were satisfactory (71.4 percent for pre-test surveys (referred to as Time-1 [T1]), and 52.7 percent for post-test surveys, referred to as Time-2 [T2]).

Respondents were asked to answer a number of survey questions measuring perceptions of quality of care coordination relative to students who are Nemours patients and relative to students who are served by other community health care providers. This enabled comparisons between groups of student patients.
## Top 10 Most Common Diagnoses

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>2012-2013 School Year (5,423 unique diagnoses)</th>
<th>2013-2014 School Year (9,161 unique diagnoses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild Intermittent Asthma</td>
<td>98 1.8%</td>
<td>162 1.8%</td>
</tr>
<tr>
<td>Delayed Milestones</td>
<td>96 1.8%</td>
<td>160 1.7%</td>
</tr>
<tr>
<td>Esophageal Reflux</td>
<td>87 1.6%</td>
<td>152 1.7%</td>
</tr>
<tr>
<td>Hypermetropia</td>
<td>84 1.5%</td>
<td>145 1.6%</td>
</tr>
<tr>
<td>Mild Persistent Asthma</td>
<td>83 1.5%</td>
<td>145 1.6%</td>
</tr>
<tr>
<td>Constipation</td>
<td>77 1.4%</td>
<td>143 1.5%</td>
</tr>
<tr>
<td>Attention Deficit Disorder with Hyperactivity</td>
<td>69 1.3%</td>
<td>133 1.3%</td>
</tr>
<tr>
<td>Eczema</td>
<td>57 1.1%</td>
<td>116 1.2%</td>
</tr>
<tr>
<td>Autistic disorder</td>
<td>46 0.8%</td>
<td>108 1.0%</td>
</tr>
<tr>
<td>Obesity</td>
<td>42 0.8%</td>
<td>78 0.9%</td>
</tr>
</tbody>
</table>
**Study 4: EMR Evaluation**

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Asthma related ED visits one year prior to enrollment in SHC</th>
<th>Total ED visits one year after enrollment in SHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/2013</td>
<td>79 Asthma related ED visits (34 patients)</td>
<td>38 Asthma related ED visits (24 patients)</td>
</tr>
<tr>
<td></td>
<td>• 1-14 asthma related ED visits per child</td>
<td>• 1-10 asthma related ED visits per child</td>
</tr>
<tr>
<td>2013/2014</td>
<td>38 Asthma related ED visits (24 patients)</td>
<td>29 Asthma related ED visits (20 patients)</td>
</tr>
<tr>
<td></td>
<td>• 1-6 asthma related ED visits per child</td>
<td>• 1-7 asthma related ED visits per child</td>
</tr>
</tbody>
</table>

*If student was enrolled in SHC in the 2012/2013 school year, one year prior was calculated based on initial enrollment date (n=78)*

**For students who were enrolled later in the 2013/2014 school year, there is not a full 12 months of data to use for the after enrollment visit calculations (n=134)*
Study 5: Parent/Guardian Survey

- Gathered data from 113 parents/guardians on their opinions about the SHC, school days missed, work days missed by the parent, and parent reported student health.

- Statistically significant improvement for “I think the Student Health Collaboration has helped school nurses better care for my child.” (p=0.032)

- Statistically significant decrease in the number of school days missed (p=0.033)

- Marginally significant decrease in the number of work days missed (p= 0.073)

Figure 1: Mean differences of work days missed by the parent/guardian and school days missed by the child due to their child’s illness.
Next Steps

- Continue gathering data to complete comprehensive evaluation
- Complete an implementation guide for external requests
- Provide consultation to other state organizations interested in replicating model
- Refresh communication products and training video
- Begin to expand beyond Delaware
- Share NemourLink functionality enhancements e.g. event monitoring
- Reinforce program as a key component of the Patient Centered Medical Home training with primary care practices
- Pilot telehealth with school nurses
Lessons Learned – So far

- Champions are key
- Don’t recreate - Use systems already in place
- Have a cause - Filling a gap creates purpose
- Provider education and understanding - the role of the school nurse
- Buy-in is essential – What’s in it for me?
- Forming workgroups and/or committees are necessary to move the project along
- Establish ways to get parental feedback
Key Factors to Success

- Committed champions at systems level (education & medical)
- Licensed Registered Nurses in schools
- Consent/Authorization form
- Robust Electronic Medical Record (EMR)
- Partner and User Agreements
- Nurses skilled in working in electronic medical records
- Training/TA/project oversight – dedicated staff time
- Resources available (e.g. legal, privacy, health informatics, clinical, etc.)
“The collaboration is such an asset to providing the best care to our students. It has been a great resource for me to see what appointments or procedures have been done so that both parent and nurse are on the same page. Sometimes I am able to give the parent a reminder about upcoming appointments or follow ups by checking doctor’s notes.

Another great aspect is that it allows me to help the parents understand the medical information. So many times the parents are overwhelmed with all the different medications and treatments that just having a little support from the school nurse may make all the difference. It is so nice to be able to feel that you have the whole picture. After all, our goal is to treat the whole child.”

- Submitted by School Nurse
Additional Resources

Federal and National Resources:
https://www.healthit.gov
http://www.himss.org
https://www.amia.org/about-amia

EHR Basics:
https://www.healthit.gov/providers-professionals/learn-ehr-basics

Certified EHR Technology:

Certified Health IT Product List: http://oncchpl.force.com/ehrcert
Additional Resources

Child Health Informatics Center (CHIC) and Council on Clinical Information Technology (COCIT):
http://www2.aap.org/informatics/COCIT.html
http://www2.aap.org/informatics/MedicalHome.html
http://www2.aap.org/informatics/StateResource.html

Special Requirements of Electronic Health Record Systems in Pediatrics:
http://pediatrics.aappublications.org/content/119/3/631

Health Information Technology & the Medical Home:
http://pediatrics.aappublications.org/content/127/5/978
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Webinar Evaluation:
https://www.surveymonkey.com/r/S2XTBC5