Connecting Chronic Health Conditions with School Attendance: Improving Data Collection and Use

Tuesday, March 17, 2015
2:00 - 3:30 PM EST
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 3,000 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 the relationship between chronic health conditions and absenteeism

• Give examples of processes and strategies at the state and local levels that link chronic conditions with attendance data

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

Hedy Chang, Director, Attendance Works

Nancy Dube, President, National Association of State School Nurse Consultants (NASSNC)

Shirley Schantz, Director of Nursing Education, National Association of School Nurses (NASN)
Reducing Chronic Absence

Exploring the Implications for Collaboration Between Health and Education

Hedy Chang
Director
Attendance Works
What is Chronic Absence?

Chronic absence = missing so much school for any reason a student is academically at risk. Attendance Works defines it as missing 10% or more of school to promote early identification and better comparisons.

Chronic absence is different from truancy (unexcused absences only) or average daily attendance (how many students show up to school each day).
High Levels of Average Daily Attendance (ADA) Can Mask Chronic Absence

90% and even 95% ≠ A

Chronic Absence For 6 Elementary Schools in Oakland, CA with 95% ADA in 2012

Chronic Absence for 6 Schools in New York City with 90% ADA in 2011-12

98% ADA = little chronic absence
95% ADA = don’t know
93% ADA = significant chronic absence
Reducing Chronic Absence Matters
Because Attendance Reflects:

**Exposure to language:** Starting in Pre-K, attendance equals exposure to language-rich environments especially for low-income children.

**Time on Task in Class:** Students only benefit from classroom instruction if they are in class.

**On Track for Success:** Chronic absence is a proven early warning sign that a student is behind in reading by 3rd grade, failing courses middle and high school, and likely to drop-out.

**College Readiness:** Attendance patterns predicts college enrollment and persistence.

**Engagement and Positive School Climate:** Attendance reflects engagement in learning and a positive school climate.

(For research, see: http://www.attendanceworks.org/research/)
Multiple Years of Elementary Chronic Absence = Worse Middle School Outcomes

Each year of chronic absence in elementary school is associated with a substantially higher probability of chronic absence in 6th grade.

Chronic absence in 1st grade is also associated with:
- Lower 6th grade test scores
- Higher levels of suspension

Oakland Unified School District SY 2006-2012, Analysis By Attendance Works
The Effects of Chronic Absence on Dropout Rates Are Cumulative

With every year of chronic absenteeism, a higher percentage of students dropped out of school.

Find Out Why Students Are Chronically Absent

**Myths**
- Absences are only a problem if they are unexcused
- Sporadic versus consecutive absences aren’t a problem
- Attendance only matters in the older grades

**Barriers**
- Chronic disease
- Lack of access to health or dental care
- Poor Transportation
- Trauma
- No safe path to school

**Aversion**
- Child struggling academically
- Lack of engaging instruction
- Poor school climate and ineffective school discipline
- Parents had negative school experience
Asthma and Attendance in Oakland

- In 2011-12, students diagnosed with asthma are associated with higher rates of chronic absence:

<table>
<thead>
<tr>
<th></th>
<th>% Students Diagnosed with Asthma who were chronically absent</th>
<th>% Students not Diagnosed with Asthma who were chronically absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>17%</td>
<td>11%</td>
</tr>
<tr>
<td>African American</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td>Latino</td>
<td>12%</td>
<td>9%</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>47%</td>
<td>23%</td>
</tr>
<tr>
<td>White</td>
<td>10%</td>
<td>4%</td>
</tr>
</tbody>
</table>
AW Recommended Site Level Strategies for Debunking Myths and Identifying Barriers

A. Recognize Good and Improved Attendance
B. Engage Students and Parents
C. Monitor Attendance Data and Practice
D. Provide Personalized Early Outreach
E. Develop Programmatic Response to Barriers (as needed)
Improving attendance requires adoption of a tiered approach that begins with prevention.

**TIER 1**
All students
- Recognize good and improved attendance
- Educate & engage students and families
  - Monitor attendance data
- Clarify attendance expectations and goals
- Establish positive and engaging school climate

**TIER 2**
Students exhibiting chronic absence (missing 10%)
- Provide personalized early outreach
- Meet with student/family to develop plan
- Offer attendance Mentor/Buddy or Walk to School Companion

**TIER 3**
Students who missed 20% or more of the prior school year (severe chronic absence)
- Intensive case management with coordination of public agency and legal response as needed

High Cost

Low Cost

Truancy interventions
Criteria for Identifying Priority Students for Tier 2 Supports

- Chronic absence (missed 10% or more of school) in the prior year, assuming data is available.
- And/or starting in the beginning of the school year, student has:

  - In first 2 weeks: 2 absences
  - In first month (4 weeks): 2-3 absences
  - In first 2 months (8 weeks): 4 absences

Missing 10% any time after
Possible Tier 2 Interventions

- Assign Attendance Buddies
- Partner with families/students to develop Student Attendance Success Plan
- Recruit for engaging Before- or After-School Activities
- Connect to Walk-to-School Companion
- Offer plan or contacts for Health Support

Positive Linkages and Engagement for Students and Families
Attendance data can help identify how to target community and health resources.

This analysis divides all chronically absent 1st graders in Oakland Unified district into 4 tiers (almost quartiles) based upon their level of absence.
Ingredients for System-wide Success & Sustainability

- **Community**
  - Positive Messaging: Conveys why building a habit of attendance is important and what chronic absence is.

- **District**
  - Actionable Data: Is accurate, accessible, and regularly reported.

- **Students & Families**
  - Shared Accountability: Ensures monitoring & incentives to address chronic absence.

- **Schools**
  - Capacity Building: Expands ability to interpret data and work together to adopt best practices.

Strategic partnerships between district and community partners address specific attendance barriers and mobilize support for all ingredients.
45 States Self-Reported to DQC Collecting Data on Student’s Total Absences (DQC Survey 2013)

* CA did not participate in DQC Survey but AW is aware that attendance is not collected by the CA Dept of Ed though it is tracked locally, as is the case throughout the U.S.
** A subsequent discussion with CO revealed confusion over the survey; state dept of education does not collect attendance for individual students.
State Definitions of Chronic Absence Vary (DQC Survey 2013)

- Definition not provided (2 states)
- Definition based on truancy (unexcused absences) (7 states)
- Definition based on excused absences (1 state)
- Definition based on percentage of days missed (7 states)
- Definition based on total number of days missed (4 states)
Chronic Health Conditions and School Attendance: Data Collection and Use

The Role of State Departments of Health and Education

Nancy Dube, RN, MPH
NASSNC President
School Nurse Consultant, Maine
National Association of State School Nurse Consultants (NASSNC)

• 40 of the 50 states have school nurse consultants
• Consult and provide guidance to practicing school nurses
• Work in:
  – Departments of Health
  – Departments of Education
  – Both
• Contact information
  www.schoolnurseconsultants.org
  nancy.dube@maine.gov
NASSNC as a Partner

• Goals:
  – Support student health and attendance in schools
  – Provide best-practice guidance to school nurses
  – Training in data collection and reporting
  – Collaborate with other entities for data synthesis

• In collaboration with the National Association of School Nurses (NASN), NASSNC is developing a standardized data set for collecting chronic conditions

• Next steps could include connecting these data sets with absenteeism data
Chronic Illnesses in Children

• Overall, estimated **13 to 18 percent** of children and adolescents have some sort of chronic health condition, nearly half of whom could be considered disabled (Cohen et al., 2011; Perrin, Bloom, & Gortmaker, 2007; Van Cleave, Gortmaker, & Perrin 2010).

• Seven million children have asthma
  – **9.4%** of all children (Bloom, Cohen, & Freeman, 2011).
Six percent of children missed 11 or more days of school in the past 12 months due to illness or injury (Bloom, Cohen & Freeman, 2011).
Impact of School Attendance and Absenteeism

Indicators for:
- Underlying health condition
  - Mental health
  - Oral health
  - Physical chronic condition
- Academic success, Drop out rates
- Sense of community belonging
- Health patterns as adults
- Work attendance patterns as adults

School absence affects performance, contributes to school drop-out, has economic and social repercussions for individuals, families, communities
(Pennington & Delaney, 2008).
Absenteeism and Chronic Health Conditions

Chronic Absenteeism:

• Intersection of issues
• Complex and convoluted reasons for absences
• Chronic absenteeism without evidence of health condition may indicate underlying psychosocial issues that are underdiagnosed in children (Perry & Flanagan, 1986).
Absenteeism and Chronic Health Conditions

Absenteeism and Attendance:

• Issues related to the student's physical and mental health appears directly related to student attendance (Kearney, 2008).

• Students with a higher Body-Mass-Index (BMI) were more likely to miss school than students whose BMI was within normal range (Geier, et al., 2007).

• Mental health conditions often manifest themselves in the form of school refusal or school avoidance behaviors (Egger, Costello, & Anglold, 2003; King & Bernstein, 2001).
What can State Departments of Health and Education do?

• Work collaboratively to define chronic disease reporting
• Standardize criteria for chronic absenteeism
• Develop clear guidelines to collecting, using, and sharing data protecting student information (FERPA)
• Collaborate with other agencies/organizations
• Improve data collection systems
• Expand health services in schools
There is much more work to be done

1. Develop systems to collect/review absenteeism data at state or local level
2. Collect/Review data for chronic health conditions in schools
3. Identify hot spots for absenteeism and for health data, see how they align
4. Use data strategically to allocate health resources
5. With health programs/interventions, incorporate absenteeism as a data set
There is much more work to be done

6. Help message the importance of regular attendance and when to keep kids home (or not) due to illness

7. Use health data to identify what are the health-related barriers to attendance

8. Help to reach out and engage chronically absent students and develop plans to improve attendance

9. Call for data on chronic absence

10. Maintain FERPA compliance and protect student identity
Data Collection and Use Challenges

- Local control states
- Developing cross-systems support
- Skill sets of school nurses
- Time
- Technology
- FERPA restrictions
- Collecting de-identified data that is meaningful
FERPA and Data Sharing

• Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. §1232g, 34 C.F.R. Part 99 permits, but does not require, the disclosure of student level data to organizations conducting studies for, or on behalf of, educational agencies or institutions to:

  (A) Develop, validate, or administer predictive tests;
  (B) Administer student aid programs; or
  (C) Improve instruction.
Maine H1N1 Vaccine Effectiveness Evaluation

- US CDC Evaluation of Maine’s Vaccination Rates
- Examined student attendance data
  - More than 5 consecutive days absent during H1N1 months of October – December, 2009
  - Comparison with influenza vaccination data
- Sample of 17 School Administrative Units
- School nurses provided de-identified data
  (Uzicanin, et al., 2012)
Massachusetts
School Nurse Performance Improvement Project: Attendance

- Absenteeism related to health
- Using 10% benchmark - 18 days
- Following EWIS (Early Warning Indicators System) data from the state department of education
- Second graders attendance in previous year (1\textsuperscript{st} grade year) reviewed for high absenteeism. For those students:
  - Collect data on student attendance for 20 school days (one month) in second grade
  - Determine students missing 2 or more days (10%)
  - If at least 2 days, include reason for absence and apply nursing intervention as appropriate over additional 20 school days
  - Track these students for another additional 20 days, assess for any attendance improvement
The School Nurse Role
Effective Data Collection and Use

Shirley Schantz, EdD, ARNP, RN
Director of Nursing Education
School nursing is a specialized practice of professional nursing that advances the well-being, academic success and lifelong achievement and health of students.

98% (52 million) children spend their days in school.
75.1% of schools have a school nurse.

www.nasn.org
School nurses serve as this nation’s safety net for our most vulnerable children

• NASN is committed to improving health outcomes and academic achievement for all students.

• School nurses contribute to their local communities by helping students stay healthy, in school, and ready to learn, keeping parents and guardians at work.
School nurses influence attendance achievement graduation rates

- Repeated studies identified that school nurses reduce absenteeism (Maughan, 2003).
  https://www.nasn.org/PolicyAdvocacy

- A higher nurse to student ratio is related to better attendance (Pennington & Delaney, 2008).

- School nurses are significantly less likely to dismiss a student from school early than non-licensed personnel, thus increasing students in their seats (Pennington & Delaney, 2008; Wyman, 2005).

- In one community, hiring nurses increased attendance, decreased dropout, and increased achievement (Cooper, 2005).
Importance of effective data collection AND use

• Make the connection between health and learning.

• Demonstrate the unique and critical contributions of school nurses to the health of school-age children.
  
  “Every student who comes to the health room needs something—it’s up to the school nurse to determine what he/she really needs” (Kansas School Nurse).

  https://www.youtube.com/watch?v=61ITQVCb0Ps

• Collecting / sharing data to advocate for the resources that students need to be healthy, safe, and in school.
Collaboration between NASN and NASSNC: National School Nursing Data Set

• Developing a national school nursing data set that describes the schools, the nature of the school nurse practice, and outcomes of care.
• Collecting data in the same way allows NASN to aggregate the data across the nation to show the effect of school nurses on student health and education.

https://www.nasn.org/Research/StepUpBeCounted
Data collection begins at the local level within the schools, school districts, or state agencies.

As data is collected, NASN will be testing methods to aggregate and report the data at the state and national level.

48 states and DC have a Designated State Data Champion who assists school nurse data collectors.
School Level Data - Number of Students:

- Enrolled in school(s)
- With a diagnosis of:
  - asthma
  - diabetes – type 1 & type 2
  - seizure disorders
  - life-threatening allergies
Health Office Visits-Disposition

Number of:

- Health office visits to RN resulting in the student returning to class or staying in school
- Health office visits to the RN resulting in 911 being called or regionally appropriate equivalent
- Health office visits to the RN resulting in the student being sent home
Olathe, Kansas – Annual Departmental Report...

I. Health room usage / Total visits
   • Percentage of students who visit the health room at least one time, average number of visits per student, percentage of students returned to class
   • Primary complaint/reason for visit
   • Number of meds administered

II. Immunization compliance and communicable disease monitoring
   • Comparison of local immunization compliance by building and to state compliance
   • Incidence of reportable diseases

III. Hearing, vision, and dental screening and follow-up coordination

IV. Student school and sport accident monitoring

V. Facilitation of emergency response
   • 911 calls by person, type, need to transport
   • Emergency epinephrine usage
   • CPR/AED/First Aid trained staff

VI. Student health acuity
   • Incidence of major health conditions
   • Change in incidence over time
   • At risk data

VII. Other departmental programs and initiatives
Data to improve delivery of health care in schools

- Identify school nurse service delivery models.
- Comparison of models of care vs individual nurse / student outcomes
  - Ex., What is the effect of FTE caseloads on completed vision and hearing referrals.
- Describe the relationship between service models and outcomes of care
Poll Question

For those working with chronic health conditions in schools (at the state or local level), to what extent do you collect and/or use attendance data?

- Not At All
- Very Little
- Somewhat
- To A GreatExtent
Presenters

Cheryl De Pinto, Medical Director, Maryland Department of Health and Mental Hygiene (MD DHMH)

Zachary Faigen, Former Biosurveillance Epidemiologist, MD DHMH
The Healthy Schools Dashboard: A Tool to Track Health and Education Outcomes

Cheryl De Pinto, MD, MPH
Medical Director, Office of Population Health Improvement and Office of School Health
Maryland Department of Health and Mental Hygiene
# Maryland Schools and Enrollment (2014)

<table>
<thead>
<tr>
<th>School Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>1,447</td>
</tr>
<tr>
<td>Non-Public</td>
<td>1,420</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Public School Population (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Kindergarten</td>
<td>29,811</td>
</tr>
<tr>
<td>Kindergarten</td>
<td>67,548</td>
</tr>
<tr>
<td>Elementary School</td>
<td>327,994</td>
</tr>
<tr>
<td>Middle School</td>
<td>187,227</td>
</tr>
<tr>
<td>High School</td>
<td>253,589</td>
</tr>
<tr>
<td><strong>Total Public School Enrollment</strong></td>
<td><strong>866,169</strong></td>
</tr>
</tbody>
</table>

## Attendance

<table>
<thead>
<tr>
<th>School Level</th>
<th>Overall Attendance Rate (%)</th>
<th>Students Absent Fewer than 5 days (%)</th>
<th>Students Absent More than 20 days (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>95.7</td>
<td>39.9</td>
<td>6.2</td>
</tr>
<tr>
<td>Middle</td>
<td>95.4</td>
<td>40.6</td>
<td>8.7</td>
</tr>
<tr>
<td>High</td>
<td>92.7</td>
<td>34.1</td>
<td>16.9</td>
</tr>
</tbody>
</table>

# Chronic Conditions and Special Health and Support Services

<table>
<thead>
<tr>
<th>Top 3 Diagnoses*</th>
<th>Number+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>88,898</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>50,514</td>
</tr>
<tr>
<td>ADHD</td>
<td>39,737</td>
</tr>
</tbody>
</table>

* DM is least prevalent of all specified diagnoses: 2,531

<table>
<thead>
<tr>
<th>Nursing Interventions</th>
<th>Number+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Health Plan</td>
<td>22,125</td>
</tr>
<tr>
<td>Emergency Care Plan</td>
<td>21,131</td>
</tr>
<tr>
<td>IEP w/ Health Goal</td>
<td>18,992</td>
</tr>
<tr>
<td>504 Plan</td>
<td>23,485</td>
</tr>
</tbody>
</table>

Source: Annual SHS Survey SY 2013-2014
+ Not all Jurisdictions reported
Maryland School Health Services Program

• Maryland State Department of Education
  – Student Services and Strategic Planning Branch
• Maryland State Department of Health and Mental Hygiene
  – Office of Population Health Improvement
• 24 Jurisdictions
  – Local School Systems/Board of Education
  – Local Health Departments
  – Local School Health Councils
  – Hospitals
• Expanded Focus align program activities with HP 2020 and State Health Improvement Process Goals
  – **Office of School Health is within the Office of Population Health Improvement**
  – Priority setting with measurable objectives and targets
  – Engage diversity of local sectors to act to improve health by implementing evidence based programs == Local Health Improvement Coalitions
  – Identify critical research, evaluation, and **data collection needs**
Healthy Schools Dashboard

**Overarching Goal:** Improve student health and education outcomes

- **Transparency:** Measure a variety of student health outcomes that aligned with a subset of State Health Improvement Process metrics and education metrics that are shared publically.

- **Accountability:** Include health measures along with education measures in the assessment and reporting done by schools.

- **Collaboration:** Facilitate better data collection (surveillance), communication (sharing and reporting), integration and analysis of health and education data across various sectors at the local and state level.
# Healthy School Dashboard
(Example for Illustrative and Discussion Purposes Only)

**JURISDICTION NAME:**

<table>
<thead>
<tr>
<th>MEASURES</th>
<th>Fully in place</th>
<th>Partially in place</th>
<th>Under Development</th>
<th>Not in Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a school health advisory team in each school that reflects the eight components of coordinated school health</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>All beverages offered or sold in school meet strong nutritional standards</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>All persistent asthmatics have an individualized health plan</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Health and wellness goals are part of the school improvement plan</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Families are educated on important health and safety issues affecting the school success</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>A feasibility study has been done to assess how to achieve a ratio of students to registered nurse of less than or equal to 750:1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Students with chronic conditions are routinely monitored for attendance and academic achievement</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEASURES</th>
<th>Target*</th>
<th>Meets Target</th>
<th>Meets 75% of target</th>
<th>Meets 50% of target</th>
<th>Meets 25% of target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of students reporting they feel safe at school</td>
<td>90%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent of students without lead testing on entry into school (who are required to be tested) who are referred for lead testing</td>
<td>100%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent of students with behavioral concerns and/or ADHD who are evaluated and provided/referred for services to address identified academic needs</td>
<td>90%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent of students failing vision and/or hearing screening whose parents receive referral sources for follow-up evaluation</td>
<td>100%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent of schools designated as “Asthma Friendly” by the Maryland Asthma Control Program</td>
<td>75%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Percent of students who improve on one or more FitnessGram indicators</td>
<td>50%</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Column Totals**

- Fully in place: 12
- Partially in place: 8
- Under Development: 4
- Not in Place: 0

**Total Points:** Add the four sums above and enter on the right.

- Total equals 31-39 Points
- Total equals 20-30 Points
- Total equals 10-19 Points

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*Target values are for illustrative purposes only*

Adapted from the School Health Index, Centers for Disease Control and Prevention and the “Healthy School Champions Score Card” Colorado Department of Education.
Maryland State Health Improvement Process (SHIP)
State Health Improvement Process Measures

Healthy Beginnings

1. Reduce infant deaths
2. Reduce the percent of low birth weight births
3. Reduce sudden unexpected infant deaths (SUIDs)
4. Reduce the teen birth rate
5. Increase the % of pregnancies starting care in the 1st trimester
6. Increase the proportion of children who receive blood lead screenings*
7. Increase the % entering kindergarten ready to learn
8. Increase the percent of students who graduate high school
9. Increase the % of adults who are physically active
10. Increase the % of adults who are at a healthy weight
11. Reduce the % of children who are considered obese
12. Reduce the % of adults who are current smokers
13. Reduce the % of youths using any kind of tobacco product
14. Decrease* the rate of alcohol-impaired driving fatalities
15. Reduce new HIV infections among adults and adolescents
16. Reduce Chlamydia trachomatis infections
17. Increase life expectancy

Healthy Communities

18. Reduce child maltreatment
19. Reduce the suicide rate
20. Reduce domestic violence
21. Reduce the % of young children with high blood lead levels
22. Decrease fall-related deaths
23. Reduce pedestrian injuries on public roads
24. Reduce Salmonella infections transmitted through food
25. Reduce the number of unhealthy air days
26. Increase the number of affordable housing options*
27. Increase the proportion of persons with health insurance

Access to Health Care

28. Increase the % of adolescents receiving an annual wellness checkup
29. Increase the % of children receiving dental care
30. Reduce % of individuals unable to afford to see a doctor
31. Reduce deaths from heart disease
32. Reduce the overall cancer death rate
33. Reduce diabetes-related emergency department visits
34. Reduce hypertension-related emergency department visits
35. Reduce drug-induced deaths
36. Reduce emergency department visits related to mental health conditions*
37. Reduce emergency department visits for addictions-related conditions*
38. Reduce the number of hospitalizations related to Alzheimer’s disease

Quality Preventive Care

39. Increase the % of children with recommended vaccinations
40. Increase the % vaccinated annually for seasonal influenza
41. Reduce hospital emergency department visits for asthma
Steps to Dashboard Development

Step 1: Partnership and Buy-in

Population Health Improvement

Healthy Schools Dashboard

Maryland Department of Health and Mental Hygiene
- Chronic Disease
- Immunizations
- MCH
- Behavioral Health
- Environmental Health

Maryland State Department of Education
- School Health Services
- Counseling
- Instruction—PE and Health Ed
- Facilities

Local/other Partners
- Health Departments
- School System
- Local Health Improvement Coalitions
- Academic Centers
Steps to Dashboard Development
Step 2: Funding

- CDC 1305 Grant Expanded
- State Community Health Resources Commission funded pilot
- Leverage development and improvement of other data focused efforts
  - SBHC
  - School Health Services

Efforts to secure and expand funding are ongoing!
Steps to Dashboard Development
Step 3: Indicator Development*

School/System Data
- #LEA PD management
- % schools identify/track
- % schools w/ protocols to enroll in insurance programs

Ed Data
- Absenteeism among SSHCN
- Test scores among SSHCN

SHS Data
- Prevalence of chronic cond
- Care management
- RN treatments

Population Health Data
- % childhood obesity
- Enter K ready to learn
- HS graduation rate
- Test scores
- Violence/bullying rates
- School staff training
- **Absenteeism**
- Youth tobacco use
- Suicide
- Adolescent wellness exams
- Childhood dental care
- Hosp among uninsured
- Diabetes related ED visits
- BH ED visits
- Childhood IZ rates
- Asthma ED visits

* Indicators are still under development
Steps to Dashboard Development

Step 4: Technology and Data Use

- Population Health Measures
- Education/Academic Measures
- Health Care Management
- Promotion of Academic Success

Data Integration

Data Aggregation
Steps to Dashboard Development
Step 5

Overcome Challenges
• Planning
  – Who still needs to be at the table?
  – Whose buy-in is still needed?
  – How to communicate benefit to skeptics?
  – Buy-in on final selection of indicators
• Implementation
  – Data confidentiality (health and education data)
  – Aggregate vs. individual level data
  – Flexibility of data usability and interface (technology)
  – Nimbleness of programs to respond to data
  – Sustainable Infrastructure (funding and staffing)
Next Steps

• Assessing most feasible current data system to build technology platform
• Translation of population health measures into school/student level indicators to finalize indicator list
• Development of data sharing and data use agreements to facilitate integration of health and academic data
• Engage local population health partners to get buy-in to prioritization of school related measures and interventions
The Maryland ESSENCE Program and School Absenteeism Data

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ESSENCE

• ESSENCE = Electronic Surveillance System for the Early Notification of Community-based Epidemics

• ESSENCE is a syndromic surveillance system
  – Rapid automated system
  – Uses non-traditional data sources
  – Based on syndromes rather than diagnoses
  – Can query for specific symptoms or syndromes
  – May provide earlier indication of disease outbreaks and suspicious patterns of illness
Provides one piece of information to be interpreted in the context of other current surveillance data sources.
Data Purpose and Uses

• Surveillance of school absenteeism data is widely employed as a method to monitor illness in communities. Currently, other states incorporate this data into ESSENCE or similar syndromic surveillance systems and have found this data useful.

• School aged-children are among the first to be affected by infectious diseases
  – High attack rate compared to other age groups
  – Likely to spread disease to family members
Timeline for Incorporation of School Absenteeism Data into ESSENCE

- Directive for Statewide Expansion of ESSENCE to School Absenteeism Data (Nov 2010)
- Presentation done for the Directors of Student Services (Feb 2011)
- 3 school systems reporting data (Nov 2011)
- Secretary of Health issues Executive Order (January 2012)
- MOU Signed by all 24 jurisdictions (Feb 2012)
- All 24 Maryland jurisdictions reporting to school absenteeism data into ESSENCE (June 2012)
- Data moved to production in ESSENCE (June 2012)
- Meet with all 24 Maryland jurisdictions (Feb 2012)
- Local public school system provided access to their data (July 2012)
- Training (August 2012)
School District Collaborations

• Individual meetings with all 24 jurisdictions
• Presentation and discussion to answer questions and alleviate concerns
• Attended by:
  – Administrative leadership
  – School health services
  – School system IT
  – Local health department staff
Memorandum of Understanding

• Each school system signed an MOU with DHMH regarding the transfer of school data

• Outlines the following:
  – DHMH’s legal ability to collect the data
  – Data elements to be shared
  – Data access and protections
School Absenteeism Data Transfer Process

- School A
- School B
- School C
- School D

County School System Database → DHMH Server → ESSENCE → Local Health Department → Local Public School System
ESSENCE School Absenteeism Data

• Data are provided daily from all public schools in Maryland (n ≈ 1,400)
  – Raw absenteeism number
  – Total number of students enrolled
  – % of students absent
  – No identifiers are collected

• Definition of absent is standardized across the State

• Data is transferred to DHMH in the early evening
<table>
<thead>
<tr>
<th>Date</th>
<th>Region</th>
<th>School System</th>
<th>School Name</th>
<th>Enrolled</th>
<th>Absent</th>
<th>Percent Absent</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/30/2014</td>
<td>County 1</td>
<td>ES</td>
<td>School A</td>
<td>428</td>
<td>20</td>
<td>4.67</td>
</tr>
<tr>
<td>9/30/2014</td>
<td>County 1</td>
<td>ES</td>
<td>School B</td>
<td>264</td>
<td>12</td>
<td>4.55</td>
</tr>
<tr>
<td>9/30/2014</td>
<td>County 1</td>
<td>ES</td>
<td>School C</td>
<td>314</td>
<td>14</td>
<td>4.46</td>
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<tr>
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<td>ES</td>
<td>School D</td>
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<td>13</td>
<td>2.23</td>
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<tr>
<td>10/01/2014</td>
<td>County 2</td>
<td>MS</td>
<td>School E</td>
<td>411</td>
<td>17</td>
<td>4.14</td>
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<tr>
<td>10/01/2014</td>
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<td>MS</td>
<td>School F</td>
<td>648</td>
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<td>10/01/2014</td>
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<td>School G</td>
<td>651</td>
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<td>3.53</td>
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<tr>
<td>10/02/2014</td>
<td>County 3</td>
<td>HS</td>
<td>School H</td>
<td>595</td>
<td>23</td>
<td>3.87</td>
</tr>
<tr>
<td>10/02/2014</td>
<td>County 3</td>
<td>HS</td>
<td>School I</td>
<td>393</td>
<td>12</td>
<td>3.05</td>
</tr>
</tbody>
</table>
The Data

• Data can be queried in the following ways:
  – Entire State of Maryland (at the State level only)
  – By Jurisdiction (State, LHD, Schools)
  – By School ID
  – By School Type
    • Elementary, Middle, High, and Other

• Automated ESSENCE alerts:
  – By algorithm
    • Uses historical data
  – By threshold
    • Set by each jurisdiction
Threshold Alerts

• Each jurisdiction has a percent absenteeism threshold
  – Majority are 10%
  – Some jurisdictions have different thresholds for high schools vs. elementary schools, etc.

• When a threshold is exceeded, the individual school will contact the local health department via email or phone

• ESSENCE can be programmed with these thresholds and can automatically generate an email when a threshold is exceeded

• Thresholds can be programmed at the jurisdiction or individual school level
Data Limitations

• Reasons for absence are not collected
  – Cannot verify that increase in absenteeism is due to illness or disease by ESSENCE absenteeism data alone

• Absences cannot be linked with other data sources in ESSENCE
  – E.g., emergency department chief complaints or over-the-counter medication sales

• Secretary’s Executive Order
Current Data Uses

• Daily disease surveillance
  – School absenteeism data is monitored on a daily basis, primarily on a jurisdictional level
  – Compared with other ESSENCE data sources to identify events of public health significance
  – Local jurisdictions have access and will be able to monitor on a school by school basis

• Used to assist in outbreak investigations

• Seasonal Influenza

• Emerging Infectious Disease Surveillance, e.g., EV-D68
Next Steps

• ESSENCE epidemiologists will continue to monitor school absenteeism data
  – Will focus on jurisdictional data
  – Will monitor daily to determine if any jurisdictions are surpassing their absenteeism threshold

• Determine proper thresholds for each jurisdiction and school
  – Calculated 95\textsuperscript{th} percentile and Mean+2SD of daily percent absent across each county and school type
  – Daily percent absent = \# absent / \# enrolled * 100
Additional Resources


Resources Available Online at Attendance Works, http://www.attendanceworks.org/tools/tools-for-healthcare-providers/ including:

Additional Resources

Every School Day Counts. The Forum Guide to Collecting and Using Attendance Data

Present, Present, Engaged, and Accounted For: The Critical Importance of Addressing Chronic Absence in the Early Grades

Maryland State Health Improvement Process:
http://dhmh.maryland.gov/ship/SitePages/Home.aspx

Alleghany County PA - data sharing framework and case study:
http://www.alleghenycounty.us/WorkArea/DownloadAsset.aspx?id=32826
http://www.aisp.upenn.edu/wp-content/uploads/2014/05/Allegheny-County-Case-Study.pdf

School Health Index, CDC: http://www.cdc.gov/healthyyouth/shi/

Colorado Healthy School Champions Score Card:
http://www.healthyschoolchampions.org/score-card
QUESTIONS

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Thank you!