1 SHIFT White Paper

1.1 School Healthcare Information Framework leveraging Technology (SHIFT)

School Healthcare Needs for Standards

Draft - March 2019

Gravity and SHIFT minutes 20191121

Health Resources and Services Administration: Maternal and Child Health


http://hl7.org/fhir/us/eltss/
Hi Ben,

Good to hear from you! Yes, I would be happy to meet with you to collaborate on the SHIFT project. Here’s the update — and need:

UPDATE: Folks are still quite interested in the SHIFT White Paper; see today’s MHWG notes for a more formal update. We are targeting completion by MAY2020. It can be used by HL7’s “African Outreach Project”; State Governments; HIMSS Advocacy teams (including Pennsylvania); School Board Associations; ISO TC215 expressed interest; HL7’s Accelerator Project “The Gravity Project” desires alignment (regarding SDOH aspects); other interests.

NEED:
- **Executive need**: Govern the work; Draft-edit; Final-edit; Publication; Marketing Plan; Feedback-and-Usage Plan.
- **Line-authoring need**: lots of stakeholder-types have expressed interest; they need to be contacted and instructed/coached on writing/reviewing/endorsing their pieces.

We need to complete about one stakeholder-type per week (for the ~20 stakeholder-types) in order to finish by MAY2020.
I am available on Saturday and Sunday evenings, (flexibly) around 8 pm ET US – beginning this weekend.

John

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

<table>
<thead>
<tr>
<th>Date</th>
<th>Author</th>
<th>Revision</th>
<th>Notes</th>
</tr>
</thead>
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<tr>
<td>20190301</td>
<td>Small-team</td>
<td>Original (skeleton) draft</td>
<td></td>
</tr>
<tr>
<td>20190717</td>
<td>Ben Atkinson</td>
<td>Nutrition section additions. Academy of Nutrition and Dietetics (AND) reviews.</td>
<td></td>
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<tr>
<td>20190718</td>
<td>John Ritter</td>
<td>Some minor edits. Request for AND’s inspection of EHR-S FM functionality regarding Allergies.</td>
<td></td>
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<tr>
<td>20190802</td>
<td>Gora Datta John Ritter</td>
<td>Agree to use existing Analytical Frameworks to guide the layout of the SHIFT White Paper</td>
<td></td>
</tr>
<tr>
<td>20190805</td>
<td>Gora Datta John Ritter</td>
<td>Created “SHIFT White Paper - Stakeholders Grid 20190805.xlsx” to identify categories for Stakeholders</td>
<td></td>
</tr>
<tr>
<td>20190809</td>
<td>Ben Atkinson John Ritter</td>
<td>Organized the Nutrition text into the Use Case Template (for Nutrition); Added some text</td>
<td>Ben will be unavailable the week of 2019-08-12.</td>
</tr>
<tr>
<td>20190810</td>
<td>Gora Datta John Ritter</td>
<td>Perfected the PSS-Lite. Reviewed/edited the Nutrition Use Case.</td>
<td></td>
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<tr>
<td>20190811</td>
<td>Gora Datta John Ritter</td>
<td>Moved additional text to its proper location in the Nutrition Use Case.</td>
<td></td>
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<tr>
<td>20190812</td>
<td>Gora Datta John Ritter</td>
<td>Added to the ICT Infrastructure and Outcomes sections of the Nutrition Use Case</td>
<td></td>
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<tr>
<td>20190813</td>
<td>John Ritter</td>
<td></td>
<td></td>
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<tr>
<td>20190902</td>
<td>Gora Datta John Ritter</td>
<td>Added about 20 more stakeholder types.</td>
<td></td>
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<tr>
<td>20190903</td>
<td>US Realm Task Force</td>
<td>Voted to approve the PSS-Lite.</td>
<td></td>
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<td>20190915</td>
<td>John Ritter</td>
<td>Added snippets to the Security section (based on recommendations from Security exerts).</td>
<td></td>
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<tr>
<td>20191002</td>
<td>John Ritter</td>
<td>Added “Smart School Bus” to Transportation Section.</td>
<td></td>
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<tr>
<td>20191018</td>
<td>John Ritter</td>
<td>Posted the current version of this document to Confluence page</td>
<td></td>
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<tr>
<td>20191027</td>
<td>Gora Datta John Ritter Brian Hagerty</td>
<td>SHIFT backgrounder offered to Brian. Update on ONC and Gravity project outreaches.</td>
<td>BH=P3 Innovation Center</td>
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<tr>
<td>20191101</td>
<td>Mobile Health Work Group conference</td>
<td>Consensus: The High-Level diagram (PowerPoint picture) of the SHIFT concept must be split into two separate slides</td>
<td></td>
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<tr>
<td>Date</td>
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<td>Time</td>
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<td>20191115</td>
<td>Igor Yuabov and John Ritter</td>
<td>1:00 pm ET US.</td>
<td>Brainstorm possible interaction with CHOP. Schedule a meeting on 20191121 at 6pm ET to create a one-page overview of SHIFT for CHOP executives.</td>
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<tr>
<td>20191121</td>
<td>Gravity team and John Ritter</td>
<td>2:30 pm ET US</td>
<td>With Gravity leadership team. Gravity and SHIFT projects need to mutually accommodate each other’s methods of envisioning food insecurity within the student population (methods include: data-devices, information handling, school services, and social services).</td>
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<tr>
<td>20191121</td>
<td>Igor Yuabov and John Ritter</td>
<td>6:00 pm ET</td>
<td>To create a one-page overview of SHIFT for CHOP executives.</td>
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<td>20191121</td>
<td>John Ritter</td>
<td></td>
<td>Added “Homeless Students” topic heading</td>
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<td>20191121</td>
<td>John Ritter</td>
<td></td>
<td>Added “Student Injuries” topic heading</td>
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<td>20191125</td>
<td>Katie Johnson and John Ritter</td>
<td></td>
<td>Brainstorm School Nurse topics</td>
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<td>20191210</td>
<td>Katie Johnson and John Ritter</td>
<td></td>
<td>First Draft of School Nurse section</td>
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<td>20191212</td>
<td>Katie Johnson, John Ritter, Sara Rigel, Leslie Buter</td>
<td></td>
<td>Sara Rigel is an expert in school based health centers.</td>
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<tr>
<td>20191215</td>
<td>Gora Datta, Ben Atkinson, John Ritter</td>
<td></td>
<td>The group reviewed the newly-added subtopics in the “Use Case Nurse” section and agreed to copy those subtopic headings (via an expanded template) to all Use Cases. Any Use Case that does not need a given subtopic can mark it as “Not Applicable”.</td>
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<td>20191216</td>
<td>Katie Johnson and John Ritter</td>
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<td>Added to School Nurse section. Adjust the Table-Of-Contents and Use-Case-Hierarchy. Brainstorm possible dissemination techniques.</td>
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<td>20191218</td>
<td>Katie Johnson, John Ritter, Kathleen Sande</td>
<td></td>
<td>Added to the section regarding educating incarcerated youth.</td>
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<tr>
<td>20191219</td>
<td>John Ritter and Katie Johnson</td>
<td></td>
<td>Added to the section regarding educating incarcerated youth. Added to the Nurse’s Section (the Maturity Levels).</td>
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<td>20191222</td>
<td>John Ritter</td>
<td></td>
<td>Added Novel Means of Transportation to Transportation Section.</td>
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<td>20191223</td>
<td>John Ritter and Katie Johnson</td>
<td></td>
<td>Added to the HIPAA and FERPA sections</td>
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<tr>
<td>20200102</td>
<td>John Ritter</td>
<td></td>
<td>Added to 7.31 School Attendance and</td>
</tr>
<tr>
<td>Date</td>
<td>Name(s)</td>
<td>Topic</td>
<td>Description</td>
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<tr>
<td>20200106</td>
<td>Igor Yuabov, John Ritter</td>
<td>Absenteeism</td>
<td>1:00 pm ET US. Polish the one-page overview of SHIFT for the CHOP folks.</td>
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<td>20200108</td>
<td>Katherine Graff; Ariel VanZandt; Katie Johnson</td>
<td>Immunization records in Washington State. Added to 7.4 Immunizations</td>
<td>Inviting Katherine Graff; <a href="mailto:katherine.graff@doh.wa.gov">katherine.graff@doh.wa.gov</a>; <a href="mailto:Ariel.vanzandt@doh.wa.gov">Ariel.vanzandt@doh.wa.gov</a></td>
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<tr>
<td>20200110</td>
<td>MHWG</td>
<td></td>
<td>• Per Keith Boone: Contact Alean Kirmak; HL7 PHWG; has contacts with AIRA (American Immunization Registry Association)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Seth Blumenthal; AMA. Focusing on SDOH efforts in HL7. Supporting SIREN, Gravity Project efforts. Engaging in various HL7 groups. Seth will try to identify experts who can offer input to SHIFT.</td>
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<tr>
<td>20200123</td>
<td>Tommy Reddicks; Jess Monk</td>
<td>Create Section 7.37 School Health Data and Other Health</td>
<td>How the School Nurse documents the care process. Description of the care-documentation process. Current state-of-the-art. Carrie Nicholson DNP, RN, NCSN</td>
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### Task Assignments

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<th>Description</th>
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</thead>
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<tr>
<td>20200127</td>
<td>Katie Johnson; John Ritter</td>
<td>the need (and obstacles) for using standardized codes.</td>
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<tr>
<td>20200127</td>
<td>Carrie (Manley) Nicholson; Katie Johnson; John Ritter</td>
<td>Target additions to 7.42 School Records and School Records Systems. Insert backgrounder about school nurses. Describe the need (and obstacles) for using standardized codes.</td>
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<tr>
<td>20200127</td>
<td>Tommy Reddicks; Jess Monk</td>
<td>Add to Section 7.37 School Health Data and Other Health</td>
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<tr>
<td>20200129</td>
<td>Tommy Reddicks; Jess Monk; John Ritter</td>
<td>1:00 pm Add to Section 7.37 School Health Data and Other Health</td>
<td>FINISHED</td>
</tr>
<tr>
<td>20200129</td>
<td>John Cottingham</td>
<td>512-337-9167; School safety experts will chat with me about SHIFT’s school safety tenets at 3 pm ET</td>
<td></td>
</tr>
<tr>
<td>20200203</td>
<td>Elaine Walsh</td>
<td>SHIFT with Elaine Walsh; [Optional: Katie Johnson]. Add to Section 7.36 Behavioral Health.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kathleen Sande can meet after dec 25. Send a few date/time proposals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Per Keith Boone: Contact Alean Kirnak; HL7 PHWG; has contacts with AIRA (American Immunization Registry Association)</td>
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### Expert Contact Information

<table>
<thead>
<tr>
<th>Date</th>
<th>Expert(s)</th>
<th>Contact Info</th>
<th>Area(s) of Expertise</th>
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</thead>
<tbody>
<tr>
<td>20191125</td>
<td>Katie Johnson</td>
<td><a href="mailto:johnsk5@uw.edu">johnsk5@uw.edu</a></td>
<td>Educating incarcerated youth</td>
</tr>
<tr>
<td></td>
<td>Kathleen Sande</td>
<td><a href="mailto:rkconsultants@comcast.net">rkconsultants@comcast.net</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leslie Buter</td>
<td><a href="mailto:Buterl@edmonds.wednet.edu">Buterl@edmonds.wednet.edu</a> <a href="mailto:buterbess@gmail.com">buterbess@gmail.com</a></td>
<td>Educating incarcerated youth</td>
</tr>
<tr>
<td></td>
<td>Sara Rigel</td>
<td><a href="mailto:sara.rigel@kingcounty.gov">sara.rigel@kingcounty.gov</a></td>
<td>Sara L. Rigel, MPH, CHES Public Health- Seattle &amp; King County</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>School Based Partnerships; Child Care Health Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tel: 206-263-8830 ; Fax: 206-296-3808 ; <a href="mailto:Sara.Rigel@kingcounty.gov">Sara.Rigel@kingcounty.gov</a></td>
</tr>
<tr>
<td>20200108</td>
<td>Katherine Graff</td>
<td><a href="mailto:katherine.graff@doh.wa.gov">katherine.graff@doh.wa.gov</a></td>
<td>Katherine Graff BSN, RN School and Child Care Immunization Nurse Consultant; Office of Immunization and Child Profile</td>
</tr>
<tr>
<td>Date</td>
<td>Name</td>
<td>Email</td>
<td>Organization</td>
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<tr>
<td>20200108</td>
<td>Ariel VanZandt</td>
<td><a href="mailto:Ariel.vanzandt@doh.wa.gov">Ariel.vanzandt@doh.wa.gov</a></td>
<td>Washington State Department of Health</td>
</tr>
<tr>
<td>20200114</td>
<td>Tommy Reddicks; CEO; (317) 519-4588</td>
<td>Paramount Schools of Excellence, Executive Director; <a href="http://www.paramountindy.org">www.paramountindy.org</a> ; <a href="https://healthdataproject.org">https://healthdataproject.org</a></td>
<td>Tommy Reddicks is a school administrator who has done work correlating data between health office visits and academic risk. He is also interested in building connections for communication with health and academic systems. He likely has some insights on how data exchange could advance child health from the perspective of a school administrator. He has built this website that pulls these concepts together.</td>
</tr>
<tr>
<td>20200123</td>
<td>Jessica (Jess) Monk; COO; 317-519-4588</td>
<td>Paramount Schools of Excellence; <a href="mailto:jmonk@paramountindy.org">jmonk@paramountindy.org</a></td>
<td>Paramount Schools of Excellence; Azure Angelov; Executive Director</td>
</tr>
<tr>
<td>20200124</td>
<td>Elaine Walsh</td>
<td><a href="mailto:jmonk@paramountindy.org">jmonk@paramountindy.org</a></td>
<td>Elaine is faculty at UW School of Nursing and is a researcher in suicide prevention in school-aged children.</td>
</tr>
<tr>
<td>20200125</td>
<td>Dr. Martha Dewey Bergren</td>
<td>Dr. Martha Dewey Bergren out of University of Illinois Chicago is a leading national expert on HIPAA/FERPA and the connections to school. She, Erin Maughan, and Katie Johnson were the developers of the NASN standardized data set.</td>
<td></td>
</tr>
<tr>
<td>20200129</td>
<td>John Cottingham</td>
<td>512-337-9167</td>
<td>School safety experts will chat with me about SHIFT’s school safety tenets</td>
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</tbody>
</table>

Dr. Elaine Walsh is faculty at UW School of Nursing and is a researcher in suicide prevention in school-aged children.

She has worked on this issue in WA and CA and has been very influential in policy and best practices. She was instrumental in passing legislation in WA requiring that all nurses and school staff...
have training in recognizing and addressing suicidal ideation in students. I will let her tell you more about her work, but I think she will provide very important information on behavioral health in schools.

On 2020-01-13 John Ritter wrote to Elaine: My suspicion is that the same types of data-collection and data-mining that would support suicide (early) detection, intervention, governance, and reporting – would also support many similar types of student-health concerns (such as absenteeism, bullying, depression, physical abuse, hunger, drug abuse, run-aways, and homelessness) Said differently, a well-constructed description of the “suicide health concern” would serve as a good pattern for many other types of health concerns.

The goal will be to capture the notion that schools are expected to provide a collection of services – in addition to (or in support of) a child’s education; some of those services touch on the student’s mental health. Specifically, schools might benefit from the use of advanced health information services and technologies. There may be ways of using advancements in health services and technologies to help prevent or reduce behavioral health issues (specifically, suicide). Examples of “technologies” might include: telehealth, blood sugar monitoring, drug abuse, bullying, drug-drug interactions, care coordination, reporting from the school nurses on the student’s daily status, increased (informational) awareness of “challenging life experiences” (such as the death of friend or relative, homelessness, sexual abuse, or divorce in the family). Examples of “services” might include methods of surveillance, identification of students who have certain risk factors, data-mining, student-reporting on (possibly) troubled classmates, and interventions via experts. What are the drivers? What are the costs? What are the barriers? What legislation exists? Does information flow to the correct stakeholders easily? What are the experiences of certain school districts who have had failures (or successes)? What are the population statistics (for child suicide)? What legislation can be proposed / adopted? Are school nurse services / expertise / interventions / communications adequate? [And many more questions along these lines…]

https://healthdataproject.org

Jessica (Jess) Monk

School health is often an ancillary consideration with respect to the student’s academic achievements. However, School Health and Academic Success are (arguably) correlated.

Integration needs to occur between clinical professionals and school systems.

Data is often siloed in school systems. When data is properly shared with relevant stakeholders, academic scores increase.

Leslie Buter; can join at 11:30 am ET

Kathleen Sande is an expert on educating incarcerated youth (we worked together at the WA state department of education).

Sara L. Rigel, MPH, CHES
Public Health- Seattle & King County
School Based Partnerships | Child Care Health Program
Tel: 206-263-8830 | Fax: 206-296-3808 | Sara.Rigel@kingcounty.gov
Sara Rigel is an expert in school based health centers. Sara Rigel manages the school-based health center partnership with Seattle Public Schools. She is a national expert on how to best serve students through these partnerships.
Sara will join at 12:30 ET.
Her email is sara.rigel@kingcounty.gov.

“This is a very interesting topic. Often the records for incarcerated youth are not shared with schools since they often have different MIS systems, but each state has different ways to collect and to report school data. I think it would be great to assist in how they could add the health records for incarcerated youth to their school records.”

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HL7 Mobile Health Work Group White Paper

Sponsored by:
NOTE: This Work Group White Paper (WGWP), once completed, will be reviewed and approved by the Mobile Health Work Group. It has not been balloted or subject to formal review by the full HL7 organization. This WGWP expires five years from the date of publication.

Point of Contact Name and Email:

Matthew Graham

John Ritter

Gora Datta

Instructions: Insert URL for the co-chairs of the Work Group; on the Work Group web page select “Leadership” then right click and open in new window. Copy the URL which displays names of the WG co-chairs.

Instructions: If Work Group does not want to require Copyright, delete the optional section below.

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<table>
<thead>
<tr>
<th>Terminology</th>
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</tr>
</thead>
</table>
| Current Procedures Terminology (CPT) code set | American Medical Association  
| SNOMED CT                                  | International Healthcare Terminology Standards Developing Organization (IHTSDO)  
http://www.ihtsdo.org/snomed-get-snomed-ct or info@ihtsdo.org |
| Logical Observation Identifiers Names & Codes (LOINC) | Regenstrief Institute |
| International Classification of Diseases (ICD) codes | World Health Organization (WHO) |
| NUCC Health Care Provider Taxonomy code set | American Medical Association. Please see 222.nucc.org. AMA licensing contact: 312-464-5022 (AMA IP services) |

<Insert Table of Contents>

<Insert Table of Figures if applicable>
The PA General Assembly recently passed a Telemedicine Act (SB780) in mid-2018. The goal of that Act is to promote the effective use of telemedicine (a virtual healthcare visit) in Pennsylvania. Perhaps PA schools can leverage this new technological highway for schools that might: have a nursing shortage; be in a rural location; need an emergency (virtual) consultation with an emergency-care professional; need a consultation with a clinical specialist; need to coordinate care with certain members of a student’s care team; et cetera.

NOTE: SHIFT became an HL7-approved project on 2019-09-30.

NOTE: Describe the need for a Domain Model.

2 Abstract or Purpose

This White Paper proposes a visionary SHIFT in students’ health and wellness leading to an improved educational experience. SHIFT (“School Health Information Framework leveraging Technology”) describes an approach for improving/harmonizing the school’s programs, services, initiatives, information, and technology related to a student’s health, namely, a standards-based framework that promotes advancements in School Health Technology and Services.

OR RESTATEDED:
The SHIFT (“School Health Information Framework leveraging Technology”) White Paper proposes a visionary shift in students’ health and wellness – leading to an improved educational experience. SHIFT describes an approach for improving/harmonizing the school’s programs, services, initiatives, information, and technology related to a student’s health, namely, a standards-based framework that promotes advancements in School Health Technology and Services.

This White Paper provides a framework under which other types of documents can be conceived, created, and/or referenced so that next generation school health advancements can be made in a multi-disciplinary, multi-stakeholder fashion.

3 Introduction or Overview

3.1 Intended Audience

- Students
- Parent/Guardian
- Nurse and School Health System
- Staff (teachers, coaches, athletic trainers, dietitians, mental health, school counselors)
- External healthcare providers; emergency responders; public health providers; social services; law enforcement; delinquent, detained, incarcerated juvenile school student service professionals;
- State (immunization registries; Medicaid; CHIP; required reporting; financial assistance eligibility)
- School District (reimbursement; budget; risk-reduction; grants)
- System, Technology, and Material Supply vendors
- Supported by the international standards community.
- Governmental and Professional Organizations

3.2 Scope

The scope of the White Paper is to create a Framework that addresses the needs of various stakeholders who are involved in the health and well-being of students to facilitate learning and activities in the school environment. The White Paper envisions the set of healthcare standards that will support the Framework.

3.3 Background

School students need an adequate level of healthcare in order to thrive in the educational process. We propose a set of policies and practices that will SHIFT the educational process using a student-centered approach that integrates academic and health disciplines to enhance student learning and health. School Health currently comprises a complex patchwork of siloed and disconnected mandates, programs, services, initiatives, information, and technology. This Framework accommodates an incremental approach (for what? TBD) for all local, state, and national education systems to improve student learning and health.

[Editor’s note 20200121: Insert backgrounders that describe the stakeholders and their interests, thus motivating the reader to learn about the “interesting and compelling” stories that each stakeholder offers (as depicted in this White Paper.)]

[Editor’s note: POLISH THIS (20191210)]: The goal of this White Paper is to help promote the creation of child-centric systems of care. Schools are service-organizations, not profit-organizations. Traditional electronic health care systems were designed to capture billing information. School health systems are fundamentally different and
therefore must be designed with different goals, requirements, measurements, and governance in mind. Identify barriers and limitations of school health care systems, break down the information silos, and enable robust, well-disciplined, minimal, cost-effective, secure systems of information flow and workflow.

[Editor’s note: How best to state this?? (20191210)]:] A well-designed school health information framework is one whereby:

- Kids are safe and not completely unhappy to be stuck in school with their friends and teachers
- School Nurses practice legally and enjoy a gratifying professional career
- Stakeholders accomplish their goals
- School Health operations occur in a fiscally responsible and minimal manner
- Stakeholder aspirations are achieved. [Editor’s note: How best to state this goal???

3.4 Document Organization and Flow
3.5 Maturity Model

[Editor’s note (JR): For a good description of Maturity Modeling, see Appendix 3 of C:\Ritter\HL7\Mobile Health\LMIC subgroup\mHealth Technologies in Developing Countries.pdf]

xxxxxxxxxx

xxxxxxx

4 Topics/Content (adapt as needed)
4.1 Actors, Goals, and Messaging Transactions
4.2 Actors:

- Students
- Parents, Guardians, Chaperones
- Staff and Building Support (custodians, security, maintenance)
- Nutrition and Food Service Personnel (food service director, cook, cashier, dietitian)
- Special Education (Educational-Instruction Program)
- Legislative Requirements
  - ADA
  - HIPPA
  - FERPA
- School Visitors
- School Districts
  - Public
  - Private
  - Charter; Cyber-Charter
    - Career Technical Center [See: “Cooperative Education program at Keystone Central School District 20190730.docx” to help determine whether student’s health information ought to be exchanged with external businesses (where students serve as interns)]
  - Home School
  - Magnet
Advanced Placement courses at Colleges

- School Transportation Services
- Legislators
- Internal Healthcare Provider (School Nurse, School Physician, Athletic Trainer, Speech Language Pathologist, Occupational Therapist)
- External Healthcare Providers
- Payers
- Pharmacies
- Researchers and Academics
- System Vendors
- State
  - Department of Education
  - Legislative, Executive, and Judicial branches
  - Department of Health
  - Department of Social Services
  - Law Enforcement Agencies
  - Foster Child Agencies
  - Penal System
  - Indian Health Services
- Local, City, County
  - Community Health Centers
  - Child Development Centers; After-School Programs
  - Mobile Health Clinics
  - Public Health Department
- U.S. Federal
  - Department of Education
  - Department of Health and Human Services (CMS, CDC, SAMHSA, FDA, NIH, ATF, HRSA)
  - Department of Commerce (NIST)
  - Department of Homeland Security
  - Special (Diplomat, Military Base (local or foreign))
  - United States Department of Agriculture
- Standards Development Organizations
- Workforce Development organizations (to train people on the SHIFT)
- School Foundations

### 4.3 Goals

- Improve school health services
- Improve social services
- Educate the students regarding healthy/safe practices
- Leverage technologies
- Improve attendance
- Improve Quality of life
- Improve Student safety (hardening against threats)
- Address social factors (poverty, homelessness, etc)
- Seamless integration with the rest of the child’s healthcare team (dental, immunization, pediatrician, behavioral health, mental health, social determinants of health, nutrition health)
- Consumer-generated data (self-reported or machine-generated)

### 4.4 Information and Service Delivery Methods
NOTE: POLISH THE FOLLOWING:

- Mobile Health Devices and Platforms
- Health Information Exchanges
- Local Information systems
- Public Registries
- Extracurricular Activities (Field Trips; Competitions)

- Blueprints
- Pilot programs
- Models/templates
- Educational and healthcare initiatives

See: “Phone Call from School Nurse listed as Spam on Phone - blog 20191216.docx”

SHIFT Architectural components and maturity model

Ingredients for School Health Systems (see the Parthenon method of categorizing the ingredients)

1. Governance and national ownership
2. Health process domain components
   2.1. School Nurses
      2.1.1. Description
      2.1.2. State of the art
      2.1.3. Low Maturity
      2.1.4. Med Maturity
      2.1.5. High Maturity
      2.1.6. 
   2.2. Athletic Trainers
   2.3. Asdf
   2.4. Asdf
   2.5. Asd
   2.6. Fasdf
   2.7. 
   2.8. 20 Nutrition Experts
3. Foundation Components – eHealth infostructure
4. Foundation Components - ICT Infrastructure
5. Outcomes / Goals / Successes

"C:\Ritter\Healthcare\HIMSS\Rural Underserved HIT Work Group\The-Rural-Health-Facets-Framework_20150629.pdf"

"C:\Ritter\HL7\Mobile Health\LMIC subgroup\HL7-LMIC-Adoption-Phases 20130612.pptx"

4.5 Use Cases

Editor’s Note: Describe the concept of Use Cases and show the Use Case template here (along with descriptions of each subtopic in the Use Case hierarchy)

“Safe2Say” in Pennsylvania (where student uses mobile technology to report possible trouble: drugs, threats, bullying, etc)

4.5.1 Use Case template
• Description: Use Case DomainX
• Definition of Maturity Levels of DomainX
  o Low Maturity
  o Medium Maturity
  o High Maturity
• Foundation Components - eHealth infostructure
• Foundation Components - ICT Infrastructure
• Outcomes / Goals / Successes

4.6 Communication Interaction Framework

Comprehensive communication strategies that support interactions with:

• EMS; Public health clinics; weather services; air quality; food services; asthma, diabetes, obesity; administration of drugs; drug interactions; diet and nutritional analysis

4.7 Usage Conformance Rules
4.8 Data Types
4.9 Segments and Messages
4.10 Technical Guidance and Clarification
4.11 Framework Models
Here’s the CDC’s Whole School, Whole Community, Whole Child (WSCC) model:

1. Physical education and physical activity.
2. Nutrition environment and services.
3. Health education.
4. Social and emotional school climate.
5. Physical environment.
6. Health services.
7. Counseling, psychological and social services.
8. Employee wellness.
9. Student wellness
10. Community involvement.
11. Family engagement.

5 Open Issues

6 Conclusions

7 Appendix A: Use Cases (Specific to a Domain OR UNIVERSAL)

7.1 Use Case (Template): DomainX

7.1.1 Description: Use Case DomainX

7.1.2 Definition of Maturity Levels of DomainX

7.1.2.1 Low Maturity

7.1.2.2 Medium Maturity

7.1.2.3 High Maturity

7.1.3 Foundation Components – eHealth Infrastructure (Specific to a Domain OR UNIVERSAL)

7.1.4 Foundation Components – ICT Infrastructure (Specific to a Domain OR UNIVERSAL)

7.1.5 Outcomes / Goals / Successes (Specific to a Domain OR UNIVERSAL)

7.2 Use Case (Template): DomainX
7.2.1 Description: Use Case DomainX
- X[Describe the stakeholder’s interaction with students, student health, healthcare services, and student health information.]

7.2.2 Definition of Maturity Levels of DomainX

7.2.2.1 Low Maturity
- x

7.2.2.2 Medium Maturity
- x

7.2.2.3 High Maturity
- x

7.2.3 Foundation Components – School Health Program Structural Impacts
- x

7.2.3.1 School System Components
[Describe the conditions, situations, locations, arenas, or systems under which this stakeholder interacts with the student’s health.]
- Funding
- Component types

7.2.3.2 School Health Program infrastructure
[Describe the structural elements that are required to support the stakeholder in this domain.]
- x

7.2.3.3 School Health Context
[Describe the zzzzzz
- x

7.2.3.4 Student-Health Acuity Levels:
- x

7.2.3.5 Research Considerations
- Categories of Research
  - x
- Research professionals
  - x

7.2.3.6 Addressing Problems
- Problem Prevention
- Problem Mitigation
  - x
- Problem Mitigation professionals:
    - X
- Problem Adjudication
  - Problem Adjudication professionals
  - Problem Adjudication arenas

7.2.4 Foundation Components – eHealth Infostucture (Specific to a Domain OR UNIVERSAL)
- x

7.2.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
- Information and Communications Technology Infrastructure

7.2.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)

7.2.6.1 Goals
- x

7.2.6.2 Outcomes

7.2.6.2.1 Successes:
  - x
7.3 Nutrition [Nutrition and Food Service Personnel (food service director, cook, cashier, dietitian)]

7.3.1 Description: Use Case Nutrition

The nutrition and food service operations of a school affect students, staff, and the public. Its operations can cross internal and external stakeholders. For student safety and student academic performance, it is essential that the food service operation utilizes up to date recipe and menu information and that nutrition-related health concerns are documented accurately and accessible to the appropriate stakeholders that require them.

There are several main areas for improvement in school nutrition operations, each described separately below.

- Allergens and Ingredients:

[[[[EDITOR’S NOTE (John Ritter 20190718): Should “allergies” (in Ben’s text, below) be expanded to “allergies, intolerance, adverse reactions, sensitivities, and food-drug (or nutritionals-drug) interactions”?]]]]

Student allergens are an area requiring improvement in interoperability and standardization across school information systems and the FNMS. Allergies are usually reported by the parent or guardian, with varying levels of authenticity or accuracy. A paper or faxed copy of a medical provider document, a paper form filled out by the parent or guardian, or even a handwritten note written on paper are common forms of allergy documentation. Therefore, the allergy record of a student is likely incomplete or inaccurate. The USDA estimates that 20-25% of epinephrine injections occurring at schools are the result of school personnel being unaware of students’ allergies (https://www.usda.gov/media/blog/2018/05/14/food-allergies-helping-schools-prepare-respond).

Interoperability between a school and a medical provider or health information exchange could help alleviate the inaccurate and incomplete school allergen record. Medical systems internationally utilize standard messages to communicate and store medical diet and allergies, such as the HL7 Diet Order for V3 (https://www.hl7.org/implement/standards/product_brief.cfm?product_id=3177) or FHIR Nutrition Order (https://www.hl7.org/fhir/nutritionorder.html). The ability for a school information system or school-based FNMS to receive and store this information via existing standards is a great opportunity. Similarly, the student allergen record within the school information system and/or FNMS should be able to be accessed in other interoperable systems or mobile and personal health record systems in order to improve the safety of students away from the traditional school campus.

- Cafeteria setup and operations (material supplies (e.g., food thermometers, mops, and dishwashing soap), food-consumption dinnerware, cleaning (disinfecting tables and doorknobs), personal hygiene (aprons, hairnets, and hand soap), restaurant devices (ovens, can openers, ladles, freezers, cutting blocks, garbage cans), food presentation and selection devices (bins, trays, racks, sneeze guards)
• Morning Breakfast delivery (grab-and-go foods)

• After School food delivery (athletics, clubs, events, daycare, shows, trips, ceremonies, celebrations)

• School-based waiting areas that may accommodate food consumption (e.g., staging area for early-arrival or late-stay students)

• Concession Stands / Coffee Shoppes / Vending Machines

• Shipping and Receiving of Food Materials

• Returns / Rejections / Waste Management (governance, measurements, and reporting)

• Storage of information regarding Free-and-Reduced student food-services

• IEP (Individualized Educational Plan) that contains a nutrition component (e.g., based on clinical orders, parental preference, or student need (e.g., verifying that a student successfully chews then swallows per each bite))

• Delivery / Administration of specialized nutritional-product or nutrition-supplement (e.g., delivering nutritionals to a student via a feeding tube or spoon-feeding)

• Staff (e.g., Nurse / Teacher) ad hoc examination or regularly-scheduled assessment regarding a student’s allergies, intolerances, adverse reactions, sensitivities, and food-drug (or nutritionals-drug) interactions

• Non-traditional (e.g., Home schooled, cyber school, outdoor educational, study abroad, study at community college, internships) students’ nutritional requirements

• others

7.3.2 Definition of Maturity Levels of Nutrition

7.3.2.1 Low Maturity: Nutrition

Food insecurity; no coordination with Social Determinants of Health protocols
No cafeteria; no milk service; students bring their own foods
No special or additional food services
Little ability to administer and assess students’ nutritional needs
Little or no communication with student’s care-community
Little oversight and reporting
Minimal student nutritional-health information exists; such information exists on paper
Minimal descriptions of nutritional ingredients; such information only exists on food-purchase forms and food encyclopedias
No food-related hygiene (e.g., no time for students to brush their teeth)

7.3.2.2 Medium Maturity Nutrition

Food stability; some coordination with Social Determinants of Health protocols
In-school cafeteria
Adequate communication with student’s care-community; Paper-based information interchange
Adequate oversight and reporting; general (summary) reports regarding food sufficiency
Food descriptions of nutritional ingredients and minimum daily requirements are posted on walls. Some food-related hygiene (e.g., Posters reminding students to clean their teeth; students routed to lavatories for teeth brushing after meals).

### 7.3.2.3 High Maturity: Nutrition

Food security; excellent coordination with Social Determinants of Health protocols.

- In-school cafeteria and other types of food acquisition and delivery (e.g., vending machines; delivery of specialized food products defined by students’ IEP specifications).
- Readily available foods for consumption before, during, or after school (including take-home and weekend foods).
- Excellent ability to administer and assess students’ nutritional needs.
- Excellent food choices; good oversight and assessment regarding the foods selected and actually consumed.
- Excellent communication with student’s care-community (including parents); information is interchanged electronically; reports, trends, and graphs are created and shared electronically.
- Excellent oversight and reporting regarding the food ordered, consumed, returned, and wasted; reporting regarding the food storage and operations.
- Food descriptions of nutritional ingredients and minimum daily requirements are readily available (at each food-delivery station; electronically or via daily poster; requirement-fulfillment is dynamically presented during cash register checkout).
- Recommendations for – or warnings against – the selection of certain foods is presented either at the moment of food selection or during cash register checkout.
- Excellent food-related hygiene (e.g., dental pics and floss available; tooth brushing and oral rise practiced, measured, and reported).
- Advanced devices are utilized (e.g., Bluetooth-enabled toothbrush (how many brushing strokes; date/time of brushing).
- National School-Lunch programs (and corresponding funding) are in place (e.g., U.S. Realm’s CHIP (Child Health Insurance Program).

### 7.3.3 Foundation Components – eHealth Infrastructure

Food and Nutrition Management Systems (FNMS):

- The FNMS in the school setting provide both food service and health-related, or clinical nutrition, functions. For food service functions these systems require the capacity to store and analyze food ingredients (or any pre-made or purchased food item, such as frozen pizza or a pre-made ham and cheese sandwich) at its most basic level. The details about food ingredients include: ingredient description, the size of the container or case the ingredient resides in, the weight or volume of the ingredient, the nutrition analysis of the ingredient, specific attributes of the ingredient (kosher, organic, local, etc), the USDA Child Nutrition label (denotes the components that the ingredient fulfills, for example: a slice of pre-made pizza could meet the requirements for one meat/meat alternate and two grains), the price of the item, the vendor from which the item was purchased, the vendor’s item identification number, the manufacturer of the item, the classification of the item for budgeting and planning purposes (dry goods, canned goods, fresh produce, seafood, poultry, etc), the storage location of the item within the school warehouse or kitchen for inventory purposes (item is stored in the freezer on shelf A2). There are many other pieces of information that school nutrition staff and students may require about a food ingredient or item, but the FNMS must be capable of storing, sharing, and analyzing all of them in order to provide accurate information for student health and departmental operations.
- These systems must then be able to incorporate the food ingredients into recipes. Recipes are a summarization of food ingredients, the instructional steps that need to be performed with the ingredients, the altered yield of the ingredients and final recipe as they are processed, the food safety considerations to be utilized throughout the preparation. After recipes are created, the FNMS must be able to organize them into menus for a particular service type, such as a lunch meal or afterschool snack. The system must be able to store current and historical predictions.
about how many of each recipe item within a given menu will be served. This is to
demonstrate that the school is providing recommended or required amounts of certain types of
foods, but also to accurately project how much food to make to ensure that all students are fed
and to minimize food waste. The school menus then must be able to generate food purchasing
information. By recording how many portions of a recipe to make, the FNMS should
therefore know how much of a recipe ingredient to purchase and when to purchase it based on
the recipe production details (for example, if an item is required to be thawed before baking it
may need to be purchased several days in advance of when the item is to be served).

- Interoperability of the FNMS is also crucial to obtain accurate information and reduce staff
  labor. By knowing the amount of food to be purchased, the FNMS should be able to
  communicate its food order to vendors. Similarly, vendors should be able to electronically
  send information about the filled food order back to the school; including information about
  any items that aren’t able to be delivered, or substitute items that are sent. This workflow
  exists in the commercial healthcare industry, so it should also be possible in the school
  setting. Since all schools create recipes and menus, the ability to share and store this
  information between schools, recipe and menu databases (such as
  https://healthyschoolrecipes.com/), students, and healthcare providers should be required
  functionality. The Health Level Seven, International (HL7) Orders and Observations Work
  Group and the Academy of Nutrition and Dietetics are developing a Fast Healthcare
  Interoperability Resource (FHIR) information exchange standard that will address these
  needs.

- Many school information systems and FNMS also do not utilize standardized value sets for
  allergens. Recently created food, drug, and environmental value sets present an opportunity to
  prepare for interoperability between school and medical systems, as well as to improve the
  accuracy of records; for example in clarifying a shellfish allergy into a specific mollusk or
  crustacean allergy as recommended by medical professionals. Utilization of the HL7 allergy
  and intolerance data sets should be considered to improve this lack of standardization

- Once a student’s allergy is known, identifying foods that may contain the allergen is a further
  hurdle. While the pharmaceutical industry in the United States has developed structured
  product labels that can communicate medication ingredients, instructions, and other label
  information, there is no such system for food or nutrition supplements. Adding food
  ingredient, allergen, characteristics (such as organic, local, kosher, halal, or low sodium), or
  other official labels such as USDA Child Nutrition labels to indicate food component values,
  is a manual task performed by food vendors, food manufacturers, and school nutrition staff.
  The manual entry of these descriptors of food items is laborious—for example all 300+ school
  districts in Washington State, USA likely manually added the calories, ingredients, an
  allergen code, a product weight and volume, and a price to the same Mozzarella Cheese Stick
  item. The manual entry may also be inaccurate a small percentage of the time.

- While allergies are very important for student safety, other components of food are also
  crucial. Diabetic students rely on carbohydrate content records of school food in order to
  properly dose insulin or other anti-diabetic medication. Students managing other acute or
  chronic medical conditions may also need to limit or increase their intake of macro- or
  micronutrients. Students following halal food recommendations from their mosque, or those
  observing a fast as part of their religious beliefs may also need to know how their food was
  prepared or what its ingredients are.

Students’ Health Information:

- School information systems and school-based FNMS also do not consistently store or share
  data in a standardized format. To both prepare for interoperability between these school-based
  systems and medical provider, health information exchange, and personal and mobile medical
  record systems, and to accurately store student medical information with school-based
  systems; utilizing standard clinical documentation is crucial. For nutrition services, the
Nutrition Care Process is a method to communicate nutrition care that is recognized internationally (https://www.ncpro.org). Further, recent collaboration between the HL7 EHR workgroup and the Academy of Nutrition and Dietetics have resulted in a detailed framework for requirements of the Nutrition Care Process in an electronic system (https://www.hl7.org/implement/standards/product_brief.cfm?product_id=369). An implementation guide that details how to share nutrition-related documentation in transitions of care, such as from the medical provider to a school, also exists (https://www.hl7.org/implement/standards/product_brief.cfm?product_id=478). By utilizing these existing standards, school information systems and school-based FNMS can greatly improve their ability to store and transmit health information to increase student safety.

Financial Management and Student Financial Information Exchange

- Schools’ foodservice programs rely on personal financial data about students and their parents or guardians to determine whether a student is required to pay cash, or whether the school can be reimbursed by the federal or state government in the United States for a student meal or snack. Interestingly, this same financial information that determines free or reduced student nutrition payment status, also affects many other aspects of school funding. So it is crucial to obtain timely and accurate financial information about students, siblings, and parents or guardians. Trends to reduce embarrassment of families or students about their financial status, language difficulties, and outdated web or mobile technologies can all lead to a school’s inability to collect accurate financial information. This can lead to decreased revenue for a school, as well as a missed opportunity to improve a student’s food security status and increase their ability to physically grow and learn. Interestingly, financial information is often self-reported, leading to inaccuracy.

- Students and their parents or guardian however can enroll in local, state, or federal financial assistance programs, such as the Supplemental Nutrition Assistance Program in the United States. Enrollment in many of these programs may automatically classify them as able to receive free or reduced price meals at school, or classify them as low-income and enable the school itself to be eligible for additional revenue or desirable programs. Therefore, enrollment status in a financial assistance program could be valuable information to be shared with a school, the same way that a medical insurer may share insurance plan enrollment status with a medical provider. This information should follow the student between different schools within the same district or group, and when the student transfers to another school district.

- Communication related to student or staff foodservice payment accounts is another area for improvement. With the continued move to cashless payment systems, many schools rely on outdated point of sale or web payment methods. Schools should utilize current payment systems whenever possible in order to increase revenue and increase participation in their foodservice programs. Systems should also allow secure and timely communication with parents or guardians about the status of foodservice (and other fee-based program, such as art supplies) accounts. A timely alert to a parent or guardian can prevent a student from accumulating large amounts of debt to the foodservice program.

- Students, parents/guardians, and school staff regularly require nutrition information away from the school campus. Class trips, athletic or performance events, or simply wanting to know what the special entrée on the menu for the next day is—these are all situations in which access to nutrition information may be beneficial or potentially lifesaving. The ability to access a student’s personal health information during an off-campus event may help the student, or the staff supervising the student, make a safe food choice if the student has food allergies or other nutritional needs. Detailed information about food served or prepared by the school could ensure that a student with specific nutrition requirements gets the safe and nutritious food that they need. All of this should be available in a mobile format, easily accessible to those with the documented need to access it.
7.3.4 Foundation Components - ICT Infrastructure Specific to the Nutrition Domain

Nutrition “app” (application)

Electronic smart cash registers

Label readers

Bar code readers

Card readers

Student ID cards that have monetary debit information for purchasing food

Student ID cards that have health conditions / restrictions / goals / contact information for external care team / instructions for emergency personnel / access token to break-the-glass-health information

Ability to monitor and manage personal nutritional requirements and corresponding nutritional consumption activities via an electronic application (that communicates with the school health system)

7.3.5 Outcomes / Goals / Successes

Goals

Student consumes the appropriate amount and type of nutritionals (as defined by the CDC and related healthcare / nutritional specialists)

The nutritionals that the students consume are compatible with the student’s:

- health conditions (allergies; diabetes; gluten / lactose intolerance; anorexic / bulimic)
- restrictions (obesity; malnutrition)
- personal preferences (vegan; cultural; religious)
- goals (athletic competitions; body building; growth chart ranges)

Outcomes

Increased parental / staff awareness of the student’s nutritional status, progress, conditions, and compliance to an established regimen

Increased student understanding of their nutritional goals and awareness of progress made towards those goals
Increased student nutritional education regarding requirements, guidelines, and consumption methods

Appearances of Successes versus Failures

Schools that have good food services yield:

- higher attendance and graduation rates (citation?)
- increased grade-point averages (citation?),
- fewer disciplinary problems (citation?)
- higher tuition costs (citation?) but lower overall food-related costs (citation?)
- fewer health problems (citation?)

7.4 Immunizations

7.4.1 Description: Immunizations

- [Editor’s note: insert description of the nominal Immunization process. See NASN]
- [Editor’s note: insert description of the nominal Immunization-Record creation and handling process.]
- [Editor’s note: insert Katherine Graff’s text here from WASH state.]
- Each School District’s data entry and data management systems are unique.
- Each U.S. State has a State Immunization Registry, but they do not flow between each state, territory, Commonwealth, WASHDC.
- Each State’s registry does not interoperable with each School District.
- Some School Districts can update the State’s Registry.
- See Immunization protocols listed at: https://www.cdc.gov/publichealthgateway/healthdirectories/healthdepartments.html
- Schools are required to ensure a healthy environment for all students. Vaccines prevent the spread of certain diseases and promote the health of not only the student – but the entire school population. Since students are traditionally in close proximity with each other, the risk for the spread of diseases is increased. All States (and School Districts) require students to be vaccinated (or immunized) against certain diseases; the list of diseases vary among jurisdictions. As a result, vaccinations must be administered by a health care professional and the resulting information shared with the educational jurisdictions. The vaccination information is often posted to a State Immunization Registry. School Staff are required to determine whether the student’s immunizations meet the State’s requirements. School Staff often benefit by following a cogent set of workflow rules and business rules for completing the student requirements. Those rules can be captured in paper or electronic format. Thus, information systems can be created that promote the successful completion of immunization requirements.
- Student Information systems (at each school District) may have an Immunization component. Student Information systems may provide the ability to determine whether a student has met the requirements. Additionally, State Immunization Registry systems may provide the ability to determine whether a student has met the requirements. Thus, duplication of the information and the corresponding data collection and management exists, wasting scarce human and monetary resources. Enhanced coordination between Schools systems and State Immunization Registry systems is therefore essential.
- School Administrator is required to adopt and follow regulations that promote Immunization compliance.
- Local and state health departments, and the CDC need to know the Immunization-compliance rates in order to direct resources to prevent the spread of vaccine-preventable diseases.
- Disease surveillance analysts improve the health of the student population by improving the process of immunization compliance. Standards-based information and systems enable the analysts to perform their surveillance and can offer expert guidance regarding improvements and interventions.
• Immunization records are returned to the parent or student upon withdrawal from the school. Immunization records may be transferred to the target school upon parental request.
• Immunizations may be received at the school or at an external clinical facility.
• Vaccines (and Booster Shots) may be received according to an established time period.
• Describe the stakeholder’s interaction with students, student health, healthcare services, and student health information.]
• Immunization may occur naturally (e.g., by having the disease and developing an immunity) or via a vaccination (or series of vaccinations).
• School Staff may be required to demonstrate immunity to certain diseases.
• Exemptions to immunization record requirements can be requested by a parent or guardian. All States offer exemptions for medical reasons and may offer exemption for personal or religious reasons.
• Redundancies are often necessary in immunization systems due to catastrophic situations. In such cases, a student may be re-immunized or tested for immunity.
• Students who are in special circumstances (e.g., homeless, refugee, migrant, or foster) can enter schools without immunization documentation.
• Students whose parents are on active military duty may be granted additional time to receive missing immunizations.

7.4.2 Definition of Maturity Levels of DomainX

7.4.2.1 Low Maturity
• Immunization records (IRs) are handled in a non-electronic, paper-based fashion by schools and providers.
• High dependency on the parent for gathering and conveying IRs.
• A health professional may not exist within a local school who is authorized (or capable) of reviewing student-immunization compliance (or the school nurse is not adequately available to complete the record-handling and compliance requirements).
• Parents are not adequately notified of the need for immunizations or booster shots.

7.4.2.2 Medium Maturity
• School District’s Student Record system exists, but is not robust.
• No interoperability between Student Information system and State Immunization Registry.
• State has a statewide policy that instructs the use of the State Registry system.
• Consents and Authorizations are captured and can help promote Immunization record exchange.
• School Nurses offer community and School Staff tutorials regarding the value of Immunizations.
• School Nurses provide referrals for students who are not in compliance (or who are due for upcoming immunizations).
• The student’s health care provider notifies the parent (and, if necessary, the appropriate School Nurse) that a student needs an immunization.
• The School Nurse notifies parents (e.g., by phone, email, fax, certified letters via regular mail, personal visits) that immunizations (or boosters) are required.

7.4.2.3 High Maturity
• Immunization records are interoperable between the State Registry and the School District’s Student information system (and between State Registries).
• Consents and Authorizations follow the student (electronically).
• A vetted, third-party service specializes in performing IR record exchange validations and IR transfers and governance. [Editor’s note: insert Florida’s IR exchange model]
• Champion School Districts offer advice and guidance to other schools.
• Allows for verification for compliance in the State Immunization Registry (SIR) in lieu of parental-based paper-handling of IRs.
• State-Coalitions have been successfully formed that complete IR-sharing requirements.
• Surveillance experts (e.g., CDC or State Departments of Health) have sufficient means of accessing Student Records system and State Registries in order to perform clinical analysis, student health analysis, striated measures of targeted factors (such as graduation and/or attendance rates).
• Mandated reporting of IRs by health care providers into State Registries.
• IR information flows to a care provider (based on clinical need).

• Students are adequately distinguished and identified. Student-Identification factors that must be accommodated: name-changes of the student (e.g., due to marriage); name changes of the parent(s); adoption; foster status; military status of the parent; or incarcerated status.

• Protocols exist for mitigating cases where IRs are not readily available.

• A well-developed system notifies the relevant stakeholders of upcoming or completed immunization requirements (according to personal preferences (e.g., human language, Text Message or mail), scope of practice, organizational policy, and/or jurisdictional law).

7.4.3 Foundation Components – School Health Program Structural Impacts

• Schools must establish and adopt a set of Immunization Policies and Procedures.

• Schools must inform parents regarding immunization requirements, perhaps via:
  o Informational sessions with parents;
  o Printed forms and/or online forms.

• The School Nurse may oversee and/or provide instruction regarding the benefits of immunizations.

7.4.3.1 School System Components

[Describe the conditions, situations, locations, arenas, or systems under which this stakeholder interacts with the student’s health.]

• Funding for student health is often limited; the immunization compliance component of student health is also often limited. School Districts benefit from “freely-offered” electronic immunization systems and immunization interventions.

• Student health and educational experience is often improved when immunization rates are higher on a school-wide basis.

• Insurance Provider Organizations benefit from higher immunization compliance (e.g., preventative care).

• Un-insured or under-insured students require novel methods of receiving universal (free) immunization coverage (e.g., including Flu shots).

• Funding is required for providing educational materials and informational sessions regarding the benefits and accessibility of immunizations.

• Component types: Collaborate with providers and local health departments to improve immunization rates (e.g., immunization clinics; after-school hours of operation; school-based health centers).

7.4.3.2 School Health Program infrastructure

• School Nurse and School Administration adequately convey information regarding school law and health requirements to parents and guardians. For example: School Manual, Registration Packet, Forms, Websites, newsletters, reminders of immunization needs; notifications of lack-of-compliance).

7.4.3.3 School Health Context

• Children and adults may have immunization requirements. Schools, however, have particular requirements regarding information-collection and compliance reporting regarding students and certain staff members.

7.4.3.4 Student-Health Acuity Levels:

• Students’ medical conditions sometimes precludes the administration of a vaccination. Vulnerable or medically-fragile students may be more vulnerable to given diseases, but are not able to tolerate the nominal vaccination protocol. Such students may require specialized handling by School Nurse and/or Administrative Staff. Such students are particularly advantaged by higher immunization compliance of their fellow student population.

• All States allow for medical exceptions from nominally-specified immunization requirements.

• Low immunization rates among a given school make it particularly vulnerable to a vaccine-preventable disease outbreaks including combined school or interschool activities (e.g., a transmission of mumps in a wrestling competition; interactions at airports for long-distance student travel).

7.4.3.5 Research Considerations

• Categories of Research
  o Standards-based methods of describing IR content, IR-exchanges, and IR system behavior (e.g., HL7 FHIR standards).
  o International, national, State, and local researchers require well-designed immunization information.
Immunization information can be distinguished by individual student case or at the aggregate population level.

Research groups include: Drug manufacturers, payment organizations, NIH, CDC, news media, university-based, legislators, general public, standards-development organizations, and transportation industries.

- Research professionals
  - Research professionals include: Epidemiologists (study disease severity, outbreaks, and transmission); pharmaceutical scientists (examine efficacy of vaccines); laboratorians (identify diseases).

7.4.3.6 Addressing Problems

- Problem Prevention. The local, county, state, or federal Immunization Officers are charged with ensuring compliance, overseeing compliance, measures and enforcing school immunization laws.
- Problem Mitigation
  - Problem Mitigation professionals:
    - Law enforcement, medical professionals, school officials, and others may identify problems and recommend interventions.
- Problem Adjudication
  - Problem Adjudication professionals. School Officials, court systems, and medical professionals may address immunization issues.
  - Problem Adjudication arenas. Contentions may occur between parents of students who have been excluded from school due to immunization issues.

7.4.4 Foundation Components – eHealth Infostructure

- Each school must allocate sufficient monies and resources to purchase, train, and staff immunization-compliant systems.
- If the State Immunization Registry offers electronic information access to schools, then the school’s cost for accessing the State Immunization Registry is minimal. However, if the State Immunization Registry does not allow a school to access information regarding the student population, then that capability must be created within the school’s health information system (likely at significant expense).
- Opportunities exist for grant-making organizations to provide resources that enhance State Immunization Registry and schools. For example, if each state received funds to enhance their State Immunization Registry, then schools nationwide would soon have the information needed to promote immunization compliance resulting in a healthier student population.
- Information System and electronic infrastructure redundancies are beneficial for ensuring failover and restart measures.

7.4.5 Foundation Components - ICT Infrastructure

- Sufficient Information and Communications Technology Infrastructure are required in order for schools to exchange information with State Registry systems.

7.4.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)

7.4.6.1 Goals

- Each State shall have the ability for School Nurses to not only access their State Immunization’s Registry – but to update Immunization information in the State Immunization Registry. Currently, some States offer this capability; some States do not. In order for States to provide this ability, parental consents and authorizations must be present in the school’s information system.
- FERPA must be redesigned to allow a designated school health professional to enter Immunization information in a State Immunization Registry without prior parental approval in alignment with the (more interoperable) HIPAA requirements, which allow providers, health plans, and other covered entities to disclose protected health information to a State Immunization Registry without patient authorization (since the disclosure is allowed as a public health activity related to controlling or preventing disease).
- Immunization-Sharing agreements will be established among States allowing State Immunization Registry systems to freely share Immunization information with each other.
- Local school systems will be able to access Immunization information from other States.
• The State Immunization Registry system can determine and report a student’s Immunization compliance with the State’s School Immunization Requirements (e.g., reporting the compliance to parents, providers, and to appropriate school personnel).

• The State Immunization Registry system can determine and report Immunization compliance for a school student population (perhaps in a summary fashion, based on coverage rates, or for student’s needing subsequent immunizations).

• Each State Immunization Registry shall be fully funded.

• Locally-maintained, historical Immunization information will be added to the State Immunization Registry.

• Research professionals will be able to access and analyze complete, standards-based Immunization information.

• Research professional will be able to report their findings and recommendations with State Immunization stakeholders.

• Immunization Mitigation professionals will be able to access accurate, timely immunization information in order to serve the needs of their populations. For example, a Migrant Health Worker (or a Homeless Student liaison) will be able to identify the immunization and vaccination needs of local school students.

• Immunization information standards shall be widely available that enable secure, complete immunization information and achieve information-sharing requirements.

7.4.6.2 Outcomes
7.4.6.2.1 Successes:
  o Student daily attendance and graduation rates increase due to excellent Immunization compliance.
  o Immunization information barriers are successfully mitigated.
  o School Nurses have the immunization information that they need to maximize student immunization compliance.
  o Researchers have the immunization information that they need to promote healthy student and community population.

7.4.6.2.2 Failures:
  o The student arrives at a school and cannot be registered due to missing, incomplete, or invalid immunization documentation. For example, the documentation might be written in a foreign language or the immunization protocol that was acceptable in another country does not meet local requirements.
  o A student attends school without required immunizations and causes a disease outbreak.
  o A student arrives at school who has completed the necessary immunization requirements but lacks sufficient documentation, resulting in re-immunization (which wastes scarce resources). For example, a foster child may receive unnecessary re-immunizations due to documentation insufficiencies.
  o The School Immunization records are lost or destroyed (e.g., due to fire or flood) or a confidentiality breach occurs.

7.5 Oral Health
7.6 Athletic Training
7.7 Schools on Military bases
7.8 Students

(Consumer-Generated data; health goals; data collection devices; data communication devices; PHRs; packet of basic health information about the student’s health; biometric information (student id card; medic alert bracelet); administration/compliance of medicinals or therapies; SDOH; adverse behaviors; nutritionals; apps that the student uses (Safe2Say; Weight Control; Food Selection, etc)
7.9 Parents, Guardians, Chaperones

7.10 Use Case: School Administration and School Board

7.10.1 Description: Use Case School Administration and School Board
School Administrators and School Boards are required to evaluate the needs of the District and to allocate resources. School Administrators include: Superintendents, Department leaders, Principals, and the School Board.

Considerations include:

- Ethical distribution of scarce resources. See http://ojin.nursingworld.org/MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Vol31998/No3Dec1998/ScarceResources.html
- Legal requirements
- Risk reduction: students’ and staffs’ health and safety
- Funding
- Building safety and maintenance
- Transportation requirements
- Food service requirements
- School Programs and Offerings
- Compliance
- District goals
- Documentation requirements (e.g., documentation of adherence to Special Education protocols; documentation of IEP student progress; building environment (e.g., water, lead, noise, lighting, building-construction materials, chemicals, pesticides, allergenic materials, hazardous materials, sanitation requirements, and toiletry supplies).
- See: “Free Appropriate Public Education”, https://www2.ed.gov/about/offices/list/ocr/docs/edlite-FAPE504.html

7.10.2 Definition of Maturity Levels of School Administration and School Board

7.10.2.1 Low Maturity
- x

7.10.2.2 Medium Maturity
- x

7.10.2.3 High Maturity
- x

7.10.3 Foundation Components – School Health Program Structural Impacts
- x

7.10.3.1 School System Components
- Funding
- Component types

7.10.3.2 School Health Program infrastructure
- x

7.10.3.3 School Health Context
- x

7.10.3.4 Student-Health Acuity Levels:
- x

7.10.3.5 Research Considerations
- Categories of Research
  - x
- Research professionals
  - x
7.10.3.6 Addressing Problems
- Problem Prevention
- Problem Mitigation
  - Problem Mitigation professionals:
    - X
- Problem Adjudication
  - Problem Adjudication professionals
  - Problem Adjudication arenas

7.10.4 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)
- x

7.10.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
- Information and Communications Technology Infrastructure

7.10.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)
7.10.6.1 Goals
- x
7.10.6.2 Outcomes
7.10.6.2.1 Successes:
  - x
7.10.6.2.2 Failures:
  - x

7.11 Staff and Building Support (custodians, security, maintenance)

7.12 Security, Privacy, Confidentiality, Consents, Authorizations, Business Rules, Provenance; Personal Preferences

7.12.1 Description: Use Case Security Issues
Security issues appear at many different levels within the SHIFT continuum. Since need to be addressed through the creation and adoption of policies.

7.12.2 Definition of Maturity Levels of DomainX
7.12.2.1 Low Maturity
7.12.2.2 Medium Maturity
7.12.2.3 High Maturity
7.12.3 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)
7.12.4 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
7.12.5 Outcomes / Goals / Successes (Specific to a Domain OR UNIVERSAL)

[Editor’s Note: Get the stories from Australia regarding My Health Record; add some to the appendix regarding “Pain Points”.]
7.13 Special Education (Educational-Instruction Program)
7.14 Legislators
7.15 Legislative Requirements (Food Stamps; Safe2Say; many other related to health and safety)
7.16 School Visitors (Information regarding Food Restrictions on in-classroom celebrations; speakers about school-health issues)
7.17 School District Types (Public; Private; Charter; Cyber-Charter; Career Technical Center; Home School; Magnet; Advanced Placement courses at Colleges)

7.18 Internal Healthcare Provider (School Nurse)
7.19 Internal Ancillary Healthcare Provider (School Counsellor / Psychologist, Athletic Trainer, Speech Language Pathologist, Physical Therapist, Occupational Therapist, Vision Therapist, Audiologist, School Physician)
7.20 External Healthcare Providers (Pediatrician; Hospital; Clinic; etc)
7.21 Payers and Insurance Providers
7.22 Pharmacies
7.23 Research Organizations and Academic Institutes
7.24 System Vendors
7.25 Governmental Stakeholders (Local; County; State; Federal; Regional; International)
7.25.1 Local, City, County
7.25.1.1 Community Health Centers
7.25.1.2 Child Development Centers; After-School Programs
7.25.1.3 Mobile Health Clinics
7.25.1.4 Public Health Department
7.25.2 State
7.25.2.1 Department of Education
7.25.2.2 Legislative, Executive, and Judicial branches
7.25.2.3 Department of Health
7.25.2.4 Department of Social Services
7.25.2.5 Law Enforcement Agencies
7.25.2.6 Foster Child Agencies
7.25.2.7 Penal System
7.25.2.8 Indian Health Services
7.25.3 Federal
7.25.3.1 Department of Education
7.25.3.2 Department of Health and Human Services (CMS, CDC, SAMHSA, FDA, NIH, ATF, HRSA)
7.25.3.3 Department of Commerce (NIST)
7.25.3.4 Department of Homeland Security
7.25.3.5 Special (Diplomat, Military Base (local or foreign))
7.25.3.6 United States Department of Agriculture

7.25.4 Regional
7.25.5 International

7.26 Standards Development Organizations
7.27 Workforce Development organizations (to train people on the SHIFT)
7.28 School Foundations; Philanthropy; Grant
7.29 Foster Children

From Mark Stevens to Tom Boyd (see email of 20190207) – In regards to the Ask for 3b, it would be incredibly beneficial for foster children to have cloud-based EMRs as they are frequently displaced and are often denied access to services and education for a lack of a physical medical record...

7.30 School Attendance and Absenteeism
7.30.1 Description: School Attendance and Absenteeism

Students are required to receive educational instruction a certain number of days per year (nominally, 180 days per year). School districts are required to collect and report information regarding student attendance. Students may be absent from school for a variety of reasons (including family truancy and health issues). Absences may be “excused” or “unexcused”. A student who is chronically absent (also called truant) is at-risk for academic and later health problems. A student may be at the school but still skip classes.

- Reference: ESSA (Every Student Succeeds Act) requires reporting of chronic absenteeism data by state: Chronic Absenteeism - Attendance Works is an organization that is promotes student attendance https://www.attendanceworks.org/new-federal-education-law-includes-chronic-absence-tracking-training/

7.30.2

- x

7.30.3 Definition of Maturity Levels regarding School Attendance and Absenteeism

7.30.4

7.30.4.1 Low Maturity

- Little or no is data collected; no real consequence to the student for absenteeism; no effective way to enforce a better means of governance and/or discipline among Staff.
- Parents are not quickly and effectively contacted and informed regarding student absences.
- Interventions and routinely punitive in nature (rather than collaborative).

7.30.4.2 Medium Maturity

- Data are collected but are not generally effective in driving successful interventions.
- Parents receive a summary report regarding their child’s absenteeism, but has little effect.
- Interventions are offered inconsistently.
- Limited information is collected and limited analysis of the root causes of absenteeism.

7.30.4.3 High Maturity

- Detailed data are collected and utilized to develop effective interventions. For example, medical causes, school climate issues, family issues, SDOH, individually-tailored intervention.
- Continuity of a multi-stepped or multi-faceted plan.
- Effective sets of individually-tailored rewards / punishments.
- A multi-disciplinary team (including parents) surveils absentees and coordinates effectively to decrease absenteeism.
- The State offers clear definitions of absenteeism, chronic absenteeism, excused absence, and unexcused absence.
- The Schools have clear descriptions of levels of consequences and interventions.
- The State has clear governance and resources that promote increased attendance and graduation rates.
- Schools receive incentives for reducing absenteeism.
- Schools have well-designed plans that help mitigate absenteeism for students who have special health concern (including chronic health conditions). For example, a school may offer a 504 plan to help mitigate behavioral health issues; a school may have a “quiet room” that helps; McKinney-Vento laws are effectively supported for homeless students.
- School climate prevents bullying or various types of intimidation to promote attendance.
- Foster children receive effective coordination between the school and the legal system to minimize unnecessary absences.

7.30.5 Foundation Components – School Health Program Structural Impacts

- Due to its impact on student education and health outcomes, Chronic Absenteeism has become an issue of national focus in the USA.
7.30.5.1 School System Components
- Legal: Truancy Laws
- Staff: phones the parent and asks about the student’s location and status.
- Truancy Officer, Attendance Office, or Social Worker: may visit the home, collect information, may design a program or method to improve attendance.
- Funding is required to support truancy-prevention actions, services, and information handling.
- Component types: data-collection systems; information manager; classroom attendance report; interconnections between the student attendance system and the student health system.
- School-Clim ate Monitoring System.
- Electronic surveillance and information collection of various school components. For example, how often the Quiet Room was used and the statistics for its use by students. How crowded are the busses or hallways?
- Climate survey for Staff, Parents, and Students. For example, “How many days did you feel unsafe in the hallways this week?”

7.30.5.2 School Health Program infrastructure
Reference: National School Climate Center: https://www.schoolclimate.org/school-climate
How do we define School Climate?
- School climate refers to the quality and character of school life. School climate is based on patterns of students', parents' and school personnel's experience of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices, and organizational structures.

A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributing and satisfying life in a democratic society. This climate includes:
- Norms, values and expectations that support people feeling socially, emotionally and physically safe.
- People are engaged and respected.
- Students, families and educators work together to develop, live and contribute to a shared school vision.
- Educators model and nurture attitudes that emphasize the benefits and satisfaction gained from learning.
- Each person contributes to the operations of the school and the care of the physical environment.

7.30.5.3 School Health Context
- The School Nurse can recommend disability accommodations for student with health conditions (e.g., the school nurse can write a 504 Plan that permits a student to use a special elevator while recovering from an ankle injury or permits a student to use an inhaler to prevent an asthmatic attack).
- The school nurse can provide educational resources for families regarding management of student’s health conditions (e.g., the benefits of flu shots or hand-washing).
- The School Nurse can contact students who have reached an elevated level of risk for chronic absenteeism (to help solve problems that may be related to health concerns).
- The School Nurse can initiate and convene sessions with other school officials to offer advice regarding student attendance issues.

7.30.5.4 Student-Health Acuity Levels:
- x

7.30.5.5 Research Considerations
- Categories of Research
    - “In the United States, 14% of all public school students are chronically absent from school, missing 15 or more days per year. Chronic school absenteeism has been associated with poor academic performance, poor school engagement, and greater school dropout. Previous research has also found that children with chronic health conditions are more likely to have suboptimal school achievement, such as an inability to complete high school or obtain a GED, when compared with youth who did not have a chronic health condition.”
  - Research professionals
7.30.6  
**Addressing Problems**
- Problem Prevention
- Problem Mitigation
  - Problem Mitigation professionals:
    - X
- Problem Adjudication
  - Problem Adjudication professionals
  - Problem Adjudication arenas

7.30.6  
**Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)**
- x

7.30.7  
**Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)**
- Information and Communications Technology Infrastructure

7.30.8  
**Goals and Outcomes (Specific to a Domain OR UNIVERSAL)**

7.30.8.1  
**Goals**
- x

7.30.8.2  
**Outcomes**
7.30.8.2.1  
**Successes:**
  - Positive school climate.

7.30.8.2.2  
**Failures:**
  - x

### 7.31  
**School Transportation Services**

John met Todd at the Monroeville Chamber of Commerce breakfast on 2020-01-23. Todd is a transportation design engineer at TransSystems. He referred me to the Uffizio website (below).

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School Bus Management Software

Xxxxxxxxxxxxxx

20191222
Novel Transportation Types: Considerations for Schools
Schools often provide transportation services for school students.

If novel, non-traditional approaches are used for transporting students, certain considerations must be addressed, including:

- Determining who will vet, coordinate, and govern the drivers, credentialing, vehicles, student-pickup and delivery process, vehicular routing, load-balancing of students per vehicle, optimization, timeliness, reporting, payment, problem-resolution, information flow, equipment failure, traffic flow, emergency conditions, inclement weather considerations, ……xxxx
- Surveillance: Management and use of audio and/or visual monitoring and/or recording devices.
- Collection and governance of information that is related to the School District’s transportation of students.

From: John Ritter [mailto:johnritter1@verizon.net]
Sent: Wednesday, October 02, 2019 7:06 PM
To: (…)

(…) the following perspectives:
- My “School Board member’s” perspective.
- My “HL7 Personal Health Record Work Group" facilitator (and co-author of the “HL7 PHR System Functional Model” perspective).
- My leadership role in the SHIFT (“School Health Innovation Framework leveraging Technology) Project (via the HL7 Mobile Health Work Group).

(…):
- (…) children in primary and secondary school are primarily viewed as students, not “Patients”. Similarly, other people in the schools are not viewed as "Patients", but as Teachers, Cafeteria Workers, Maintenance Workers, Administrators, Bus Drivers, Coaches, Athletic Trainers, Social Workers, Librarians, Police Force workers, et cetera. Some of these people are likely to have or use health care information and/or health care devices. As a result, the term “Patient” seems to be outdated (particularly in the healthcare devices universe-of-discourse).
- Health care devices are not as narrowly scoped as they were fifteen years ago. Nowadays, there is a much wider variety of health care and safety devices, innovations, and “engines” that are likely to generate, contain, use, require, share, or route health care and safety information than previously envisioned. An extreme example of a new view of a health care and safety device might be a “Very Smart Bus”. That is, a bus that transports students whereby the bus: knows how many students are on the bus; knows the medications that the bus driver takes; knows the medical conditions of the students; knows the phone numbers of the nearest first-responders services and the corresponding alert-codes; discloses the GPS location of the bus; knows the bus route (and alternate bus routes); knows the weather conditions; knows the current traffic situations; displays photographs of the “bad guys” who might appear at a bus stop; knows the identity of the students who are supposed to depart the bus at a given stop (in case a student might be asleep or distracted); deploys a small helicopter drone from the bus, takes video images, and calls for help when an emergency occurs; utilizes a sniffer device that detects and distinguishes various types and levels of smoke; employs a breathalyzer device that prohibits a bus from starting if a driver is impaired; utilizes a set of sensors that apply the brakes or steers the bus to avoid danger; utilizes a set of cameras, flashing lights, and horns to alert other drivers regarding their dangerous/unlawful movements near the bus; utilizes accelerometers that notify appropriate directors and responders that the bus has been hit, broken down, or tipped over; and/or utilizes messaging devices that inform school personnel that the bus driver will need help
when the school bus arrives (e.g., urgently needs a bathroom break; needs some coffee; needs a substitute driver; needs a police or security-staff presence; needs a nurse; needs a principal, social worker, or psychologist; needs a special education worker; needs to transfer a student to another bus; needs an emergency responder, first aid measures, or emergency supplies (e.g., orange juice for a diabetic, a band aide, or bee sting ointment)).

- Thus, the term “Patient Care Device” needs to be broadened to include patient, non-patient, health, wellness, safety, trouble-prevention, situational-awareness, and information-reporting devices. (Note: I have no clue of a single term that might adequately encompass these broader perspectives.)
- I also wonder whether (…) adequately accommodate the broader scoping and functionality that newer devices and their corresponding services can afford. To be specific, can a single (…) Profile be written that depicts a “Very Smart Bus” (as described above)? What are the (…) standards that support a “Very Smart Bus (…) Profile”? I can envision the need for: Patient Records; Student Records; Care Coordination; Imaging; Sounds; Decision Support; Privacy, Security, and Confidentiality; Consents and Authorizations; Telehealth; Road Maps; Weather Maps; Communications; Broadband; Cloud Storage; Audit; Codes; Artificial Intelligence; Computer Vision; Remote Control; Automotive Sensors; Light Sensors; Smell Sensors; et cetera. This certainly exceeds (…) standards (alone) – and it exceeds the other organizations’ individual offerings as well. Perhaps a “Framework” approach might best accommodate the Next-Generation-Devices set that will succeed the (highly successful) “Patient Care Devices” base.

(…)

john

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xxxxxxxxxxxxxxxxxxxxxxxxxx

From: [School Leader]
Sent: Late August Day, 2019 11:00 PM
To: [School Leaders]
Subject: (…)

FYI... Elementary School bus driver on afternoon route did not have a certain street listed (…). Elementary student was safe on bus, and was returned to Elementary school where a parent was waiting . School Leader will follow up with the parents tomorrow and ensure them this will be resolved (…) with the bus garage supervisor. In addition, (…) ask the bus company about "live" real time communication between buses and Principals.

[School Leader]

7.32 Students with Chronic Conditions or Special Health Care Needs
7.32.1 Description

- Students who have chronic conditions often require intense care coordination based on factors such as: severity of the condition(s), access to care, availability of in-school resources, the family’s ability to provide care and support (relative to other needs that the family may have), asdfasdfasdf
- As a result, the school nurse (and other Staff members) may need to devote more resources to students with chronic conditions; correspondingly, the information requirements are also heightened. The School Nurse must be provided the ability to receive health-related information from external health care providers and provide regular updates.
- The school nurse needs regular, timely, high-quality, relevant updates from parents and other support personnel (such as the bus driver or cafeteria worker). The parent also requires regular updates regarding the student’s daily health status, response to care, and other educational activities. For example, the parent may need to know that the child had trouble breathing at recess due to increase pollen or very cold temperatures.
- Note that the School Nurse may be the sole healthcare professional that provides daily care for students who do not otherwise have supports for their health conditions at home.
- Students who do not receive adequate supports in school may adversely impact fellow students’ classroom experience. For example, a student who has a poorly managed behavioral or mental health condition may cause a classroom to be disrupted, adversely impacting the students, the teacher, the principal, and the parents.


Reference: CDC [https://www.cdc.gov/healthyschools/chronicconditions.html]

Reference: CDC’s WSCC (Whole School, Whole Community, Whole Child) Guidance
WSCC: Whole School, Whole Community, Whole Child model
Physical education and physical activity.
Nutrition environment and services.
Health education.
Social and emotional school climate.
Physical environment.
Health services.
Counseling, psychological and social services.
Employee wellness.
Community involvement.
Family engagement.

7.32.2 Definition of Maturity Levels of DomainX

7.32.2.1 Low Maturity
- x

7.32.2.2 Medium Maturity
- x

7.32.2.3 High Maturity
- x

7.32.3 Foundation Components – School Health Program Structural Impacts
- x

7.32.3.1 School System Components
[Describe the conditions, situations, locations, arenas, or systems under which this stakeholder interacts with the student’s health.]
7.32.3.2 School Health Program infrastructure
[Describe the structural elements that are required to support the stakeholder in this domain.]

7.32.3.3 School Health Context
[Describe the zzzzzz]

7.32.3.4 Student-Health Acuity Levels:

7.32.3.5 Research Considerations
- Categories of Research
  - Research professionals
    - Research professionals
  - X

7.32.3.6 Addressing Problems
- Problem Prevention
- Problem Mitigation
  - Problem Mitigation professionals:
    - X
- Problem Adjudication
  - Problem Adjudication professionals
  - Problem Adjudication arenas

7.32.4 Foundation Components – eHealth Infrastructure (Specific to a Domain OR UNIVERSAL)

7.32.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
- Information and Communications Technology Infrastructure

7.32.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)
7.32.6.1 Goals
  - X

7.32.6.2 Outcomes
7.32.6.2.1 Successes:
  - X

7.32.6.2.2 Failures:
  - X

7.33 Homeless Students
(See “PA House and Senate resolutions raise awareness of childhood homelessness 20191120.docx”)

7.34 Student Injuries
(See “What happens after a student athlete suffers a gruesome injury 2191121.docx”)
(See www.PSBAins.com for a sample of school association insurance options in Pennsylvania that cover student-accident, school-personnel-travel, and school-volunteer-risk concerns)
7.35 Use Case Nurse: Certified (Registered) School Nurse (NCSN: Nationally Certified School Nurse)

7.35.1 Description: School Nurse

State-level recognition / endorsement / certification: Differing levels of nursing licensing / credentialing / education / additional training / skills / specialization require differing levels of training. For example,

- in the USA a School Nurse may have:
  - Associate Degree in Nursing (ADN); typically two years
  - Bachelor of Science in Nursing (BSN); typically four years
  - Masters of Nursing (MSN or MN); typically two years

- Canada (similar to USA)
  - Demonstrate acquisition of the state-level requirements for licensure

Examples of levels-of-licensure (where the scope-of-practice is typically specified by each State) include:

- Advance Practice Registered Nurse (ARNP); requires additional education and a corresponding licensing examination
- Registered Nurse (RN); requires completion of an ADN or a BSN and a corresponding licensing examination
- Licensed Practical Nurse (LPN) or Licensed Vocational Nurse (LVN); requires a one-year education and a corresponding licensing examination

Examples of levels-of-certification (where the school-nursing competency is typically specified by each clinical specialty) include:

- National Certified School Nurse (NCSN); includes a School Nursing credentialing program
- American Nurses Credentialing Center (ANCC)

Initial certification requires the demonstration of a certain number of years of experience and a qualifying examination.

Subsequent (ongoing) certification requires the completion of a minimum number of years of practice as a school nurse (e.g., 2000 hours of practice with the past five years) and proof of continuing education within the school nursing profession.

Quantity of Nurses per school:

- Not all States require a school nurse.

Caseload and disparity of coverage:

- Caseload requirements may differ within school districts. For example, in Pennsylvania a single school nurse is typically expected to cover between 750 and 1500 students.
- Full-Time caseloads versus Full-Time-Equivalent (FTE) caseloads may vary by nursing schedule.
- School Nurses who work part-time have fewer hours with which to cover their assigned caseload. For example, a School Nurse who works a 1.0 assignment (i.e., fulltime) with 800 students has an “FTE caseload of 800”. A School Nurse who works a 0.5 assignment (i.e., halftime) with an 800 student caseload has an “FTE caseload of 1600”.
- Adequate student-access to a School Nurse is often dictated by the geographic location of the School District.
Per-Pupil Funding for School Nurse staffing:

- Schools Districts differ in their financial and funding capabilities. As a result, School Nurses’ wages, benefits, and coverage-expectations can differ widely. For example, a School Nurse whose caseload is 6000 students in a rural district, has less capacity to provide per-pupil care than a School Nurse whose caseload is 200 students in a single elementary school.

- in Special Education students may be expected

7.35.2 Definition of Maturity Levels of School Nursing Services

7.35.2.1 Low Maturity

- Struggles to meet the minimum standards of practice.
- Inadequate or nascent or level school nursing services.
- Inexperienced school nurse.
- Low level of school-nursing competency.
- Low level of (targeted, school-focused) training.
- Minimal training of the School Staff by the school nurse.
- Limited care coordination communications.
- Minimal compliance with health statutes and regulations.
- Minimal ability to complete information reporting requirements.
- Increase risk of nursing licensure due to inadequate level of nursing resources.
- Little or no access to professional development training.
- Overwhelming resource demands for students with high health acuity service needs. Inadequate ancillary support personnel and devices.
- Inadequate means of performing essential health screenings.
- Consents and authorizations do not exist, are paper-based, and are often inconsistently completed.
- Inadequate level of student health information service systems and devices.
- Little oversight of clinical nursing skills, practice, and outcomes.

7.35.2.2 Medium Maturity

- Meets the minimum standards of practice.
- Nursing competencies are proficient for the student population and student health acuity service needs.
- Proficient levels of preventative services and care coordination.
- Proficient level of (targeted, school-focused) training.
- Proficient compliance with nursing requirements and expectations.
- Routine coordination of care with health care professionals and other stakeholders.
- Summary, required (raw) student health information is collected and reported.
- Adequate resources exist to meet students’ health issues.
- Maintains nursing competencies through access to professional development training.
- School Staff receives basic training from the School Nurse for emergent and acute care.
- Compliance with required health screenings (e.g., vision and hearing).
- Integration between the student information system and the school health system.
- No direct access to an external, clinical health system.
- Consents and authorizations are present, but may be inconsistently formatted.
- Electronic student health information service systems and devices. Reports can be generated. Little system and/or device interoperability.
• Routine performance oversight by human resources manager. Limited clinical oversight and competency review.

7.35.2.3 **High Maturity**
• Exceeds the required standards of practice.
• Nurse performs program planning and surveillance (to anticipate and prevent student population health issues).
• Nurse has ready access to advanced clinical guidelines.
• Building-level and individual student information is analyzed and reporting requirements are met. The analyses are routinely used to update the school health program’s plan.
• Resources exist to prevent student health issues and to sufficiently train Staff identify and refer health problems.
• Required screenings are completed, analyzed and disclosed to the public. Additional health screenings for BMI, oral health, and/or behavioral health. Assist parents with acquiring additional health services and/or devices.
• Direct interchange between the school health system and external, clinical health systems.
• School-based consents and authorizations are well-formatted, and immediately accessible by the school nurse and other (relevant) stakeholders. Consents and authorization that are generated by external parties are shared with the school health system. Consents and authorizations are hosted on easily accessible health information exchanges. Information about pending expirations are forwarded to relevant stakeholders. Consents and authorizations metadata are linked to individual elements of health documents and are available to downstream users of the data.
• Electronic student health information service systems and devices. Reports are automatically generated and routed (based on rules-engines). Systems and/or devices are interoperable. Supports robust care coordination. Consumer-generated health data is uploaded to the school health system. School nurse uses portable devices to access and update student records, to generate reports, and to support care coordination.
• Mentors other school nurses.
• Regularly scheduled clinical competency review by veteran health care professional.
• Consistently meets the “Framework for 21st Century School Nursing Practice” competencies.
• School Nurse Administrator evaluates the nurse’s job performance and evaluates clinical competency.
• Under the supervision of a School Nurse Administrator, the School Nurse creates a professional development plan, establishes performance goals, objectives, and measures.

7.35.3 **Foundation Components – School Health Program Structural Impacts**


1. School Nurses in the U.S.
2. How School Nursing is Funded
3. School Nursing Practice


7.35.3.1 **School System Components**
[Describe the structural components that comprise a school system (from a given stakeholder’s perspective).]
• Funding
School District-type: Public, Private, Charter, Cyber, Home School, Boarding School, Military school Department of Defense Dependents School (DoDDS), Domestic Dependent Elementary and Secondary Schools (DoDESS), Military-base

Community Resources and other Support Services Context: (e.g., distance to hospital, fire, volunteers, police, security, pharmacy, counsellors)

Leadership Structure, Governance Support, and other Support: e.g., Intermediate Unit, cooperative purchasing, technical support, professional development, consultative expertise (e.g., legal, media, policy, professional),

Examples of school system components include: classrooms, hallways, stairs, information systems, cafeteria, restrooms, doors, busses, staff members, students, heating system, water system,

7.35.3.2 School Health Program infrastructure
A well-designed school health program infrastructure is characterized by:

- The existence of a cogent, well-maintained set of Policies, Procedures, and Protocols
- See: “The Healthy Learner Model for Student Chronic Condition Management – Part 1”; by Cecelia DuPlessis Erickson, RN, MPH; Patricia L. Splett, PhD; Sara Stoltzfus Mullett, RN, MPH; and Mary Bielski Heiman, RN, MS, CNS.
- See: Access to a nurse at school from NASN: https://schoolnurses.net.nasn.org/blogs/nasn-profile/2018/01/02/school-nurse-workforce-study-infographics
- Access to a nurse administrator
- Access a method of nurse-governance
- The ability to conduct evidence-based practice (best-practice) protocols, measures, and reporting capabilities
- Onboarding, training, orientation, and continuing education, and in-service training.

7.35.3.3 School Health Context
[Describe the factors (from as given stakeholder’s viewpoint) vis-à-vis various components that impact the process of providing services.]
E.g., A nurse views a cafeteria differently than a cafeteria worker, and differently than a maintenance worker.
- Student Contexts: e.g., transient; immigrant; prison; military-station; military deployment;
- Student experiential Context: SDOH, stressors resulting from variable family situations (e.g., excessive poverty or excessive wealth); human language variables; cultural differences.
- Geographic, cultural, urbanicity, etc Context.

7.35.3.4 Student-Health Acuity Levels:
- See: WA Student Acuity https://www.doh.wa.gov/portals/1/Documents/6000/StaffModel.pdf
  o Nursing-Dependent: requires one-to-one, student-to-nurse coverage; Student requires a nurse to be within audible and visual range of the student.
    ▪ Medically-fragile: student daily faces the possibility of life-threatening emergency; student requires the ready-availability of a full-time school nurse.
    ▪ Medically-Complex: Complex and/or unstable social or emotional condition, requiring daily treatment and close monitoring by a registered nurse. Life-threatening events can occur in an unpredictable fashion. Requires an RN’s care at least one day per week, plus daily accessibility to an RN.
  ▪ Health-Concern; student has stable, predictable health concerns.
  o School Building Acuity: School Nurse provides coverage for a school building based on established health parameters and organizational requirements. For example, the quantity of English Language learners, free-and-reduced-meals, McKinney-Vento (homeless), number of student with Special Education requirements, Disability-Accommodation (ADAAA Section 504) needs

7.35.3.5 Research Considerations
- Categories of Research
  (Erin Maughan can identify the areas of research)
  o Clinical Guidelines
  o Care Delivery Model
  o Certification
  o Professional Development
National Student Health Information Dataset
National Database of School Health Information; (e.g., de-identified; grouped; summarized; aggregated)
National Student Health surveys
Nurse’s Data-Management: Creation, import, curation, sharing, disposition or disposal of the data
Best practices regarding the nurse’s use of Student Health Information
Student Health Conditions: bullying, mental health, SDOH, absenteeism, sleep, asthma, diabetes, care coordination;
Public Health
Surveillance
Analysis of the ROI on the allocation of scarce nursing resources; e.g., impact of increased nursing resources on absentee-reduction or successful graduation.

• Research professionals
  - Ask for input from: Erin Maughan, PhD; NASN; Research Director
  - American Nurses Credentialing Center (ANCC) professionals
  - CDC
    - NCHS (National Center for Health Statistics)
    - NIOSH (work-environment and occupational health)
    - CDC’s FastStats website provides quick access to statistics on topics of public health importance. See [https://www.cdc.gov/nchs/fastats/default.htm](https://www.cdc.gov/nchs/fastats/default.htm); (every school is required to collect certain health-related data)
  - National Center for Education Statistics (NCES)
  - Data Quality Campaign (targeting education-related data)

7.35.3.6 Addressing Problems

• Problem Prevention
• Problem Mitigation
  - Problem Mitigation professionals:
    - X
    - X

• Problem Adjudication
  - Problem Adjudication professionals; e.g., School Principal, specialized consultant, or Intermediate Unit service, medical expert. Examples of Adjudication services include:
  - Problem Adjudication arenas:
    - Determining optimal (e.g., safe, healthy, manageable, effective) class-size
    - Determining exclusion policies regarding immunization
    - Determining staff training (specific disorders (such as seizure, blood-borne pathogens, diabetes, allergies)
    - Determining the number of hours of coverage by school nursing staff, librarians, counsellors, family-support workers, volunteers)
    - Determining optimal resolutions regarding: legal questions / issues / unfunded mandates / parental involvement / parental/student requests/demands/accommodations / special-status student (e.g., emancipated minor, 504 Accommodation Plan, homeless (McKinney-Vento), special education)

7.35.4 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)

• Record and information capabilities
• Information coding capabilities
• Information templates, assessment instruments, and forms
• Information system
• Nursing Process: Assessment / Diagnosis / Plan / Implementation / Evaluation (ADPIE) process
• Student Health Documentation Framework: NANDA, NOC, NIC; OMAHA; Washington State Codeset
• Consents and Authorizations Framework
  - Roles:
- Collector / Manager / Custodian / Data Steward
- School Staff
- Parent / Guardian
- External: e.g., clinics, hospitals, other schools
  - Adjudication for competing Consents and Authorizations

- Information workflow:
  - Internal: Teacher, teaching assistants, principal, coach, bus driver, maintenance worker, dietician, food service personnel, Safety and Security personnel
  - External: Parent, clinic, care team, Emergency Response, Registries (e.g., Immunization), previous school / next school,
  - Consent and Authorization Mechanism

- [Editor’s note (20191210) Adjust this or delete it:] User preference, scope of practice, organizational policy, and/or jurisdictional law
- User-Preference management Framework (e.g., religious, cultural, food, care provider, human-naming, emergency contact, judicial directive, treatment options, health-condition accommodation, Do-Not-Resuscitate,

7.35.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
- Communication technology, devices, and services
  - School System Communication Infrastructure (e.g., phone, Internet, Satellite, Broadband, Fiber-optic cable, fax, flying drone, Uber or Lyft)
  - Stationary or Portable computing device
  - Parental-communication technology (e.g., phone, messaging device, alerting device, video device)
- Medical devices (e.g., infusion pump, cardiac monitor, diabetes monitor; seizure-mitigation devices, pedometer, wearable devices, durable medical equipment)
- Telehealth equipment and services
- Student Transportation services (e.g., transporting a student who is sick – or who missed the bus – to a home, residence, or school of record)
- Remote Care service: (e.g., the nurse may collect health information from a reporter and recommend certain interventions to be performed by school staff or perhaps by a Good Samaritan)
- Inventory and equipment request, transportation, delivery, and management (e.g., request for locating the nearest epi-pen, inhaler, or emergency medication)
- Information Services
  - Data collection
  - Data storage
  - Data curation
  - Data sharing
  - Data management
  - Business and Workflow management
  - Care communication and coordination

7.35.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)

7.35.6.1 Goals
- Establish national governance of Student Health Data
  - Information silos are bridged
  - Information is shared in a cogent, well-disciplined, secure, and ethical manner.
- Establish baseline benchmarks for school-health-services delivery; discloses the metrics regarding schools’ performance; staff job-satisfaction;
- Establish clinical guidelines expert systems (that can offer advanced clinical guidance to generalized healthcare providers)
- Establish just-in-time First Aid guidance systems (that can offer real-time guidance to people serving in the role of a Good Samaritan); e.g., mobile app offering First Aid advice.
- Establish information-connections to public health organizations (e.g., daily report of absenteeism by school building that can help the school nurse perform building-level health surveillance)
- Establish “Centers of Excellence” that offer centralized clearinghouses for quality-school-health research results.
- Establish ubiquitous, model “Child Study Teams” for surveillance and early intervention of special education students and struggling students (e.g., a school health professional leads a multi-disciplinary team and coordinates and plans a holistic approach to a student’s health and education progress.
- Establish a structured Process Improvement Plan template database for use by every School District (e.g., each template should establish a baseline, identify goals, identify processes, implement the processes, measure the outcomes, evaluate the plan (based on measured data)).
- Establish Safe-Reporting protocols (for reporting and mitigating errors).
- Establish Magnet-like models for delivering School Health Services. A magnet-model depicts the structure for supervising nurses, providing training, establishing certification, and clarifying the roles for School Nurses.

7.35.6.2 Outcomes

7.35.6.2.1 Successes:
- See: Use of in-school Telehealth program in Howard County School District, Maryland [article].
- See: Seattle King County Public Health (SKCPH) [article] regarding the establishment of information-connections to public health organizations.
- See: (Sara [reference]) for an example of a School Based Health Center that offers a comprehensive set of student health services. [https://www.seattle.gov/education/about-us/about-the-levy/health/school-based-health-centers]

7.35.6.2.2 Failures:
- Near-miss episodes: improper surveillance of student’s health condition; improper administration of medical interventions; improper control of the environment (e.g., exposure to allergens); failure-to-rescue (e.g., inadequate supplies; improper surveillance, analysis, diagnosis, communication, training, or treatment) See: [https://journals.sagepub.com/doi/abs/10.1177/1059840510376384]
- Clinical errors: medication errors; improper documentation of a medication administration (see: NLM [https://www.ncbi.nlm.nih.gov/books/NBK2656/]; NASN [https://www.nasn.org/advocacy/professional-practice-documents/position-statements/ps-medication])
- Law Suits: breach or inappropriate disclosure of student health information; malpractice.
- Failure to use proper (secured) information transmission channels.
- Improper maintenance and use of health-related tools, supplies, and devices.
- Intentional or unintentional harm at school (e.g., accidental falls, sports injury, chronic bullying, stabbing, self-harm, or suicide).
- Theft or breach of computerized devices that contain health information.
- Failure to restrict access to student health records or to protect passwords.
- Failure to adhere to the correct care-provision protocols (i.e., a correct medication treatment is comprised of the: correct patient, correct medication, correct dose, correct route-or-administration, correct timing, and correct documentation).
- Failure to receive timely access to student health information (e.g., a parent fails to provide accurate information, failure to gain access paper or electronic records, failure to convey health information to appropriate stakeholders).

7.35.7 References

School Nurse Competency (Connecticut, USA)
[https://portal.ct.gov/-/media/SDE/School-Nursing/Publications/Competency_in_School_Nurse_Practice.pdf]

7.36 Behavioral Health

7.36.1 Description: Use Case DomainX
- Behavioral Health (BH) is inseparable from other types of health, including: physical, mental, social, community, familial.
- BH permeates all aspects of the student’s life.
- BH issues can be identified, anticipated, mitigated; can be chronic or acute, situational.
- Students often spend almost half of their daily, active time in school thus, school is an ideal setting to detect (possible) BH needs.
- Trusted, trained adults are in a position to observe, monitor, and communicate a child’s BH.
- BH principles, best-practices, trainings, and effective documentation can help inform the method of observation, communication, and intervention.
- Therefore, BH information, services, and interventions are critical ingredients to successful educational experience.

7.36.2 Definition of Maturity Levels of DomainX

7.36.2.1 Low Maturity
- BH information is not gathered, tracked, used, or shared.
- BH issues are not readily visible to responsible authorities at the school (perhaps due to the preponderance of incidents and corresponding information, or to the lack of resources for reviewing and identify patterns, or to the lack of in-school personnel who are tasked with identifying BH issues, or reluctance to disclose the actual source of a distress).
- School Staff are reluctant or unable to engage in an intervention that is not directly related to their primary responsibility.
- The school creates an environment that contributes to adverse mental health issues.
- School Staff fails to adequately address adverse school environments.
- BH issues are known, but are not successfully communicated to the proper staff or personnel (either internal or external to the school).
- Parents are unaware of BH issues demonstrated at school; parents either expects the school to provide BH remedies or hopes that an adult at school can provide BH support; parents are reluctant to inform the school of known BH issues / diagnoses known to the family.
- The student is unable or reluctant to report distress.
- Students fails to disclose concerns about other students.
- The school fails to provide an adequate mechanism for students to report concerns about themselves or others.
- External organizations fail to provide adequate, available financial or personnel resources regarding BH issues.
- External organizations fail to appreciate the need to identify and mitigate BH issues.
- External oversight and governance organizations are inadequately informed of BH issues or are unable to provide sufficient interventions.
7.36.2.2 Medium Maturity
- BH information is inconsistently gathered, tracked, used, or shared. The information is not standards-based and therefore not readily usable or interoperable.
- Information regarding BH issues are available to responsible authorities at the school but lack the resources for designing interventions. In-school personnel who are tasked with identifying BH issues struggle to provide interventions.
- All school Staff are trained to identify and are expected to report BH issues (e.g., via “Gatekeeper Training”) based on school policies.
- The school creates an environment that advances BH.
- School Staff support a safe, positive, nurturing school environment.
- BH issues are successfully communicated to the proper staff or personnel (either internal or external to the school). Interventions may not be fully implemented; measures may not be sufficiently collected.
- Schools and parents communicate regarding BH issues. Parents’ expectations regarding the school’s role in providing BH remedies are realistic. Parents and schools exchange status reports regarding BH interventions. Parents and schools exchange information regarding known BH issues / diagnoses; a plan is developed for offering interventions for acute issues or for ongoing support of unresolved issues.
- The student reports distress; a plan is developed.
- Students disclose concerns about other students.
- The school provides an adequate mechanism for students to report concerns about themselves or others.
- External organizations provide adequate, available financial or personnel resources regarding BH issues.
- External organizations appreciate the need to identify and mitigate BH issues.
- External oversight and governance organizations are informed of BH issues and are able to provide certain interventions.

7.36.2.3 High Maturity
- x

7.36.3 Foundation Components – School Health Program Structural Impacts
- x

7.36.3.1 School System Components
[Describe the conditions, situations, locations, arenas, or systems under which this stakeholder interacts with the student’s health.]
- Funding
- Component types

7.36.3.2 School Health Program infrastructure
[Describe the structural elements that are required to support the stakeholder in this domain.]
- x

7.36.3.3 School Health Context
[Describe the zzzzzz]
- x

7.36.3.4 Student-Health Acuity Levels:
- x

7.36.3.5 Research Considerations
- Categories of Research
  - x
- Research professionals
  - x

7.36.3.6 Addressing Problems
- Problem Prevention
- Problem Mitigation
  - Problem Mitigation professionals:
  - X
- Problem Adjudication
Problem Adjudication professionals
Problem Adjudication arenas

7.36.4 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)
- x

7.36.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
- Information and Communications Technology Infrastructure

7.36.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)
7.36.6.1 Goals
- x

7.36.6.2 Outcomes
7.36.6.2.1 Successes:
- x

7.36.6.2.2 Failures:
- x

7.37 School Health Data and Other Health

7.37.1 Description: School Health Data and Other Health
- School Health data has the potential to offer insights into possible student health and academic advancements and interventions. However, school health data needs to be analyzed and made available to relevant stakeholders based on targeted condition-based inquiries.
- School Health Data (SHd) is predictive of academic outcomes.
- When shd is shared among schools and other health sectors, outcomes improve.
- Statistics reveal the benefit of early health interventions. Those interventions can occur at schools.
- School readiness is a school health issue.
- “Academic health” is a defining term for health in schools.

7.37.2 Definition of Maturity Levels of School Health Data and Other Health

7.37.2.1 Low Maturity
- The school has no SN. A Staff member may field the student’s health concerns and attempt to apply a short-term, ad hoc remedy; contact a parent; or call for an emergency responder.
- The school nurse is reactive to student-health concerns, but is unable to capture data via a means that can cause the health concern to be adjudicated via a best practice approach.
- The school administrator (or school board) fails to recognize the importance of health data and health services with respect to overall student achievement.
- An external clinical professional is unable to access updated student health data.
- A student offers health complaint to a school staff member, but the complaint is misinterpreted or is not addressed.
- School nurse is not able to access health industry data (describing a particular disease, condition, or injury) or relevant student health-history data (e.g., a previous occurrence of the student’s current condition).

7.37.2.2 Medium Maturity
- The school has a school health information system that is able to disclose (proposed) health-related decision-making components.
- The school health staff is aware that certain student health data exists, but is either unable to access the information or does not have the skills/training to use the data that is accessed.
- The system lacks the ability to predict the risk of academic failure (that stem from student-health concerns).
• A student offers health complaint to a school staff member and is evaluated by the school nurse, but the complaint is misinterpreted or is not fully addressed.

7.37.2.3 High Maturity-
• School health data is used as a predictor of academic outcomes.
• School-level health data is used to inform the need for academic interventions.
• School administrators and school board members value the positive impact that a school nurse has on the student population.
• Cross-sector data sharing is utilized between the education and health sectors.
• Teachers support student health advocacy.
• The School Nurse employs a trauma-informed approach when evaluating a student’s reported concern in lieu of an obvious medical condition.
• The student health information system communicates well with the school information system.

7.37.3 Foundation Components – School Health Program Structural Impacts
• School information systems are ubiquitous; school health information systems are being developed to various degrees. However, the integration of the two systems requires further investigation and innovation.
• The Response to Instruction/Intervention (RTI) / Multi-Tiered Systems of Support (MTSS) approach offers system-based methods of providing academic and behavioral support for students who are experiencing academic difficulties.
• Legal pathways are required for sharing student health information; HIPAA and FERPA are foundational regulatory components.
• MOUs may inform information-sharing pathways between schools and health care provider institutions.
• Consent-to-Treat and Release-Of-Information forms enable students to receive health care interventions and to receive/transmit information regarding the care provided.
• School Administrators and School Boards must provide formal and operational approval and proactive promotion for school health programs and services.
• Health care providers are sometimes required to offer health services to community members in order to maintain non-profit status. Some of those resources could be donated to schools if the schools are prepared to accept the health care provider’s services and accommodate their requirements. Outcome measures need to be prepared and transmitted to the health care providers. Those measures need to be automatically and transparently generated and made available to the health care providers. Oversight of the outcomes ought to exist.

7.37.3.1 School System Components
[Describe the conditions, situations, locations, arenas, or systems under which this stakeholder interacts with the student’s health.]
• The School Secretary, School Nurse, School Nurse Aide, SBHC (school-based health clinic), FQHC (federally-qualified health center), direct partnership with health care providing organization
• School Administrative Staff; internal or external Social-Emotional health care providers.
• Schools often allocate dedicated offices within buildings for health service encounters. Mobile health centers also offer services that complement services that are offered in the school setting. School Nurses automobiles often serve as mobile health units. Also, School Nurses often provide planned interventions or mobile emergency care in an ad hoc fashion and wherever required.
• School Information Systems and School Health Documentation Systems, Guidelines, Assessments, Consent Agreements, doctor’s notes, care plans, medical reports, patient-directed laboratory tests (perhaps via a SBHC and based on policy and/or jurisdictional law).
• The level of care provided is often based on adequate funding or in-kind/donated health care services and resources.

7.37.3.2 School Health Program infrastructure
[Describe the structural elements that are required to support the stakeholder in this domain.]
• [Editor’s note: This is already covered in other sections]

7.37.3.3 School Health Context
• FERPA specifies communications with parents (or is mitigated via in loco parentis protocols) regarding student health interventions (especially in emergent situations).
• Certain Social Determinants of Health protocols must be mitigated based on School Policies and Procedures and the School Nurse’s constraints, resources, and scope of practice.
• External care providers may be able to coordinate student health surveillance, care, and reporting with school health personnel.
• The School Nurse (and other qualified school staff) are often in a better position to regularly screen and monitor the health status of students (especially those who are at risk for health and social concerns).

7.37.3.4 Student-Health Acuity Levels:
• [Editor’s note: This is already covered in other sections]

7.37.3.5 Research Considerations
• Categories of Research
  o The correlation between student academic achievement and student health ought to be studied and the results broadly disseminated.
    ▪ Key data research points for correlation must be identified. The corresponding systems need to manage those data points for collection, analysis, and development of research-informed plans.
  o The efficacy of child-centered, holistic school health systems needs to be examined and evaluated.
  o The efficacy of data-sharing and system interoperability needs to be examined and evaluated in terms of student, school, and population outcomes.
  o The efficacy of policies and legislation needs to be examined for their ability to successfully and cost-effectively promote child well-being.

• Research professionals
  o Professional statisticians
  o Health policy analysts
  o APHA (American Public Health Association)
  o AARP (American Association of Retired Persons)
  o National Academy of Medicine
  o Centers for Disease Control and Prevention
  o NASN (clinical guidelines for specific health concerns that may be applied in the school setting)
  o Specific organizations who are dedicated to performing advanced school health analysis (e.g., Paramount health data project)
  o Standards Development Organizations
  o School-level research regarding specific health conditions (for example, asthma, falling, or diabetes). Professionals include: School Administrator, School Nurse, biostatistician, director of research, director of academics or curriculum
  o Public/Private/Charter School research analysts

7.37.3.6 Addressing Problems
• Problem Prevention
  o There are two classes of health encounter –related problems: acute and systemic. Each type needs specific approaches to successfully anticipate problems and assemble the appropriate surveillance instruments and methodologies.
• Problem Mitigation
  o Long term problems can employ research to create predictability towards successful long term outcomes. For example, a well-educated child is better prepared to obtain an adequate level of income. A child who is able to read at grade level by third grade has a much higher chance of graduation than their peers who cannot read a grade level – which in turn predicts six to nine years of extended life (per APHA).
  o Problem Mitigation professionals:
    ▪ Advocates who perform research and present corresponding evidence towards best practices.
    ▪ A governing body or legislators can enforce proscribe mandates and regulations.
    ▪ A periodic review of mandates to ensure continued relevance and sustainability.
    ▪ A coherent means of collecting compliance measures (automatically versus manually) and a means of reporting those measurements.
    ▪ Risk-management professionals who can analyze arenas of potential liability and offer recommendations to minimize exposures.
• A professional (or a process) that provides analysis, reports, and benchmarking on other District’s progress, outcomes, compliance status, and relative ranking, enabling one District to quickly identify a model for implementing a mandate.

• Problem Adjudication
  o Problem Adjudication professionals. Local community developmental organization; CDC; school-led initiative; school board special mandate or special investigatory task force; State dept of Edu; accrediting authority; for private school, likely the benefactor(s); school administration and local councils or city government; National Task forces (e.g., equity, trauma-informed, school violence, school safety)
  o Problem Adjudication arenas: advocacy groups, lobbyist; special-interest groups (e.g., to harden the entrances to schools; adjudicating contentions between funded/unfunded mandates and school health and safety concerns; HIPAA/FERPA expert; school information system security and risk management regarding data sharing, data exposure, and any technological entry point. Breach of existing data communication protocols and/or technology.

7.37.4 Foundation Components – eHealth Infrastructure (Specific to a Domain OR UNIVERSAL)
• Communications technology (wired or wireless); bandwidth service-level agreements, measures, and governance; hardware that stores or process health information (e.g., a copier, printer, fax machine, or laptop computer) must secured and governed (including when the devices are repaired, sold, or repurposed). Information equipment and software services that attempt to de-identify data. Cloud-based information and communication technology must be HIPAA-compliant. Electronic envelopes must be capable of protecting its contents, tracking its uses, and hiding and masking certain portions of its data content based on user-role, time constraint, and/or security token. Data sharing agreements among participating organizations. School health system. School information system. Dashboard that discloses the use (and misuse) of school information. Data warehouse. Catalog that points to all information containers (including geographic locations, location of keys, and identification of the managers, passwords, retention/destruction management protocols, access control protocols and access logs. Technology administrator, implementer, facilitator, and trainer.

7.37.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
• Information and Communications Technology Infrastructure. Electrical power / backup power protocols. Risk reduction / failover / fraud detection / access control / log management. Hardware/software versioning management protocols.
• Telehealth encounters require many foundational components (e.g., device, lighting, power, noise, camera, microphone, bandwidth, health records, user-roles, student health information, recordkeeping, care coordination with third-parties, assistive (sometimes electronic) medical devices, wireless, Bluetooth, workflow engine, best-practices and clinical decision-making engines, and electronic screening forms).

7.37.6 Goals and Outcomes (Specific to a Domain OR UNIVERSAL)
7.37.6.1 Goals
• Students’ health is maximized via a robust blend of student health systems and student information systems. Nurses, academic professionals, and other stakeholders are provided with every means of accomplishing their shared mission.

7.37.6.2 Outcomes
7.37.6.2.1 Successes:
  o Editor’s note: Tommy and Jess will replace with a better use case: When high levels of lead are identified as a problem with certain school children. That information is shared with the schools and in partnership with the local health department, and local families, the school identifies student who evidence behavioral and academic problems that are typically associated with lead exposure. A plan is developed that help mitigate the levels of lead in various homes or neighborhoods. Information regarding health risks for lead exposure are shared with identified, resulting in early mitigation and intervention, reduced liability exposure for the school, and graduation, living longer, living better.
  o Using health as a screening agent, students who are at risk for behavioral or academic problems are identified faster than via traditional academic means.
Pediatrician can see school nurse encounter information in order to make a more accurate diagnosis and treatment plan; the school nurse can see the pediatrician’s notes in order to ascertain whether the student has a condition about which the pediatrician is unaware.

[From Tommy Reddicks 20200203] A school is tracking longitudinal correlations between health encounters and academic achievement. At this school, a chronically sick 7th grade student visits the nurse 6 times in the first month of school. After recording similar visits for neurological issues (six times for repetitive headaches), the nurse reflects on the local data showing academic risks associated with neurological health encounters. With this health information acting as screening data, the nurse contacts school administration and informs them of the student’s potential academic risks related to their condition. The principal meets with the grade level team (the team working with the student daily) and develops an academic watch for them alongside additional academic supports beyond normal instruction to make sure the student receives extra support and attention given their health risks. As a result, the student maintains moderate academic gains and eventually graduates from high school.

[From Tommy Reddicks 20200203] A student is tested for lead at the school by the local public health agency. Through a consent to treat and release of information process, the test results are shared back with the families and with the school, and the school is notified that 8 of their students have tested positive for home lead exposure. The public health agency then begins a remediation and intervention program with the families and the school begins a plan that allows teachers to better understand the classroom level impacts involved with lead poisoning, including individualized behavioral and academic plans to help the children find success amidst the myriad of potential lead poisoning complications that may materialize in the school setting.

7.37.6.2 Failures:
Elementary students are exposed to heavy amounts of lead in the water and in the surrounding environment. Students’ behavior is adversely impacted resulting in severe misbehavior and expulsion, long-term neurological damage, and negative academic outcomes. Lack of screening or early detection of environmental causes of adverse behaviors.

7.38 Use Case Nurse: School Health Clinics

<<Sara Rigel will offer input here>>

7.38.1 Description: Use Case School Health Clinics
Attributes of School Health Clinics (SBHC)
- SBHC’s can be associated with city, county, state agencies (e.g., Seattle School District)
- Seattle has supported school-based health clinics since 1989
- SBHC’s funding varies (e.g., via taxes or via other, non-tax-based means).
- SBHC are accountable to various agencies.
- About 2% (?reference?) of schools in the USA have SBHCs.
- Staffing of SBHCs must be managed.
- Various contracts must be maintained.
- Licensing is required for qualified SBHCs.
- SBHCs require input from school information systems in order to provide health care services and to surveil and measure the care-giving process. For example, a SBHC may need information about a student’s recent academic performance in order to determine the adequacy of the SBHC’s management of the student’s ADHD intervention.

- Reference: Legal Resources for School Nurses
- C:\Ritter\Healthcare\NASN\School_Nursing_and_School-Based_Health_Centers.pdf
• Data-sharing agreements must exist
• Schools are the de facto enforcers of immunization compliance. Immunization records must be handled by school health systems.
• School health systems may interact with exterior systems (e.g., State Immunization Registries) to fulfill health information management expectations. Such systems can be paper-based or electronic; each method require pre-defined (and perhaps, regulations may be defined individually by schools) handling regulations.
• SBHCs must anticipate and accommodate all HIPAA-FERPA requirements.
• SBHCs must perform care coordination based on HIPAA-FERPA requirements.
• A student’s rights to independently authorize care varies by State; (e.g., consider the tension between the parents desire to know and the student’s health care and the students’ desire for privacy)
• Billing the student’s health services to the parent’s insurance coverage may inadvertently result in a disclosure of protected health information.
• Robust (i.e., preventative) screening of a student’s health in a SBHC might result in the discovery of other health needs (that might rise to a level that requires care; such care might then cascade into the possible need for parental involvement).

7.38.2 Definition of Maturity Levels of DomainX
7.38.2.1 Low Maturity
7.38.2.2 Medium Maturity
7.38.2.3 High Maturity
7.38.3 Foundation Components – eHealth Infostucture (Specific to a Domain OR UNIVERSAL)
7.38.4 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
7.38.5 Outcomes / Goals / Successes (Specific to a Domain OR UNIVERSAL)

7.39 Use Case: Student Health and Education Information Requirements: HIPAA and FERPA
7.39.1 Description: HIPAA and FERPA
Xxxxx

HIPAA was originally intended to cover school health concerns. However, the complexities of the school health environment caused focus on the clinical environment with the expectation that the school health environment requirements would be address at a later time. Unanticipated consequences resulted from the delayed attention to school health information and School health systems requirements. For example, consents that were intended to cover asdf

Misunderstanding of privacy and confidentiality concerns caused school nurses to struggle to share H1-N1 pandemic flu of 2009-2010 information.

The 2007 Virginia Tech campus shooting (which left 33 dead, including the shooter) exposed the fact that there were limitations regarding the exchange of health information that otherwise might have prevented the loss of life and mitigated safety concerns about students with (possible) mental health concerns who could be at risk to themselves and others. Letters of Technical Guidance were issued post-event that offered an evaluation and response to the event, however such guidance needs to be developed and disseminated in advance in order to reduce the occurrence of such events.
List of Possible Ingredients for this HIPAA/FERPA Section (Draft); (please expand):

- Problems and opportunities
- Statement of overarching goals of a student-centered and holistic approach to care provision in schools
- Balance the need for sharing information versus protecting the privacy and confidentiality of the information. Note: the current balance is not correct.
- The estimated cost of current HIPPA/FERPA barriers with respect to consents and authorizations.
- Recommendation: Time should invested in analyzing today’s requirements and envisioning future systems that are efficient and: can exchange info, reduce costs, coordinate external and internal care providers, promote the health of communities (of which, schools are a part), other 1, other 2, other 3.
- Evaluate the health of the nation’s school health systems and develop methods of normalizing best practices.
- Reengineer health care approaches away from (nominally) simply offering “sick care” to also offering “preventative care”.
- Foundational Tenet: Health outcomes predicts educational outcomes; educational outcomes predicts the health of future generations.
- (Others) ….

Certain regulations were adopted that contributed to the information siloing of the current (hidden) health information systems that are in schools. For example, Lear identified the fact that the health care processes of education systems results in a hidden health care system. System structures were designed to support care (within those systems), rather than being designed to support a holistic, student-centered approach to care (within the schools). This system-approach (rather than a student-centered -approach) resulted in unanticipated information-sharing burdens and correspondingly increased costs of sharing data.

Early, uncoordinated health information systems and regulation approaches resulted in:

- Increased data management costs
- Increased difficulty the care experience among the stakeholders
- Increased complexity of population health management systems
- Increased workloads, burdens, and inefficiencies for healthcare professionals

Certain policies were written by health policy decision-makers that

- Julia Lear, 2007, “Health At School: A Hidden Health Care System Emerges From The Shadows”

FERPA (1974) regulations were designed to provide the privacy and security of health information.


Enforcement Rule History: https://www.hhs.gov/hipaa/for-professionals/special-topics/enforcement-rule/index.html

- 2004-09-15: Extension of Expiration Date of Interim Final Rule
- 2005-09-14: Extension of Expiration Date of Interim Final Rule
- 2006-02-16: HIPAA Enforcement Rule – Final Rule
- 2009-10-29: HITECH Act Enforcement Interim Final Rule
HIPAA has three components:
- Privacy Rule (2003):
- Compliance and Enforcement Rules (2015-): Meaningful Use….

HIPAA and FERPA requirements differ in their scope and approach for protecting student health information, sometimes resulting in the need to interpret and adjudicate differing information-handling needs. (e.g., immunization data-sharing requirements).
- Immunization information management and data-sharing are covered by HIPAA requirements; school immunization information requirements are covered by FERPA requirements.
- Care coordination must be mitigated based on HIPAA-FERPA requirements.
- *Reference: US Dept of Education re: difference between HIPAA and FERPA*

Non-uniform data-management among Health Care Provider Organizations, Schools, and Public Health Organizations:
- States require students to be immunized against certain diseases. States collect and manage provider-generated data regarding student’s immunization status. However, FERPA limits the data-sharing of immunization records. Direct data-sharing between the State’s Immunization Registry and the School Health Information System does not exist, causing the School Nurse to manually (re-)enter the student’s immunization record.
- A healthcare provider is authorized to administer immunizations, however the provider’s collection and distribution of that immunization record may not be handled in a uniform, standardized manner (i.e., shared in a cogent, normalized fashion) due to competing jurisdictional laws.

**EXEMPLAR**: Washington State has successfully developed an Immunization Data Management method by creating an Immunization School Module within the State’s Immunization Registry System. The Immunization School Module aggregates immunization information by-school, enabling successful identification and analysis of compliance.

Examples of HIPAA versus FERPA coverage:
- Student-immunization information generated by a health care system is covered by the HIPAA regulations.
- Student-immunization information delivered to a School District’s student file is covered by the FERPA regulations.
- Student-immunization information delivered to a private school’s student file is covered by the FERPA regulations.

FERPA regulations apply to schools that receive federal funding (typically, all Public Schools). (Note: Private and/or religious schools typically do not receive federal funding.)

When a State

Failure under hipaa:
- Asdf
7.39.2 Definition of Maturity Levels of HIPAA and FERPA

7.39.2.1 Low Maturity
7.39.2.2 Medium Maturity
7.39.2.3 High Maturity

7.39.3 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)

7.39.4 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)

7.39.5 Outcomes / Goals / Successes (Specific to a Domain OR UNIVERSAL)

OUTCOMES:
- Best practices are employed when developing the next generation of advanced information systems and policies.
- Privacy and security attributes are well-anticipated and successfully accommodated in advance information solutions.
- Information silos are replaced with well-designed systems of information storage, management, and interchange (with all appropriate consents and authorizations as transparent, automated foundations).
- The information that comprises the Trust in a system is accessible to the relevant stakeholders via audit logs and notifications and reports in a timely, user-directed fashion.

GOAL:
- There are a good number of legacy regulations that result in inefficient and redundant processes, based on paper records, paper record storage, copying paper records for transmittal. For example, redundant data entry of immunization records. Inefficient use of vaccine supplies.
- Efficient use of Electronic Documentation Systems to generate, manage, and transit student health information (initially, targeting immunization records).
- Efficient collection, management, and sharing of parental/guardian consents and authorizations. Note: students who are of “adult legal age” or who are emancipated minors may provide consents and authorizations.
- Information sharing could best be accomplished by using the structure and services provided by electronic information systems to manage permissions and accesses to data.
- Information structures and services could reside in local school building, or could be offered by a conglomerate systems-of-systems, or could be offered by a cloud-based service.
- Facilitate the flow of information to those stakeholders who have a legitimate (documented) need-to-know.

Xxxxxxxxxxxxxxxxxx


HIPAA for Healthcare Professionals: https://www.hhs.gov/hipaa/for-professionals/index.html

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7.40 Juvenile Justice and Incarcerated/Detained Students

Kathleen Sande will offer input here.

7.40.1 Description: Juvenile Justice and Incarcerated/Detained Students

Incarcerated Student Population Attributes:
- Cut off from their friends, family, familiar surroundings
- Possible history of family of troubles
- Low-income level
- High school graduation rate
- College entrance statistics
- Later-in-life success rate
- School-to-prison pipeline description, mechanisms, and mitigation
- Substance abuse issues
- In-prison gang influence; outside-prison gang influence
- Inability to join school clubs and activities and attend school-social events, musicals, birthday parties,
- Inability to be exposed to the normal school methods of child-misbehavior, intervention, punishment, and successful mitigation and behavior
- Inappropriate learned-responses alters the student’s ability to successfully socialize and succeed in the school (discipline and regulation) environment
- Inherent medical / mental conditions (e.g., dyslexia; hyperactivity; visual / auditory impairment)
- Reference: Charles Basch; Columbia U.; Literature Review: Nine conditions that urban children encounter that result in poor educational outcomes; “Healthier Students are Better Learners”
- Recidivism rates
- School Board and School Staff ought to receive seminars regarding Juvenile Justice
- A given school that provides educational services for incarcerated student may provide education (and health services) for two types of populations: incarcerated and non-incarcerated students. The record systems are often separated.
- A student who is convicted of a crime may live at a detention center.
- The student usually lives in a room (alone) and is restricted from wandering.
- The classroom size is smaller (due to the safety risk).
- The student is faced with a courtroom setting where further remanding and personal disposition will occur.
- The student may be retained in a student-oriented prison or detention center until age 25, and possibly disposed to an adult prison afterwards.
- Graduation rates.
- Absenteeism.
- Health concerns.
- Counselling services.
- Prevention.
- Mitigation.
- Resiliency.
- Loss-of-innocence.
- “Torture” / attack / abandonment / isolation in prison.
- Training of Staff.
- Special rules and expectations for students returning to school (after prison)?
- Special accommodations for student after prison (e.g., smaller class size, extra help with learning units, behavioral help, special teacher’s aide, additional physical activity, restriction from accessing certain areas of the school (cash register, locker room))
- Family support; peer interactions; friends.
• Department of Corrections.
• Interchange (and interoperability) of student health records.
• Health care standards, healthcare systems, information workflow, and information business rules for incarcerated or detained students.
• Online learning.
• Special performance-reports (conditions-of-release) demanded by a judge?
• Parole officer, health provider, counsellor, parent create an MDT (Multi-Disciplinary Team) who create a plan, protocol, conditions, restrictions, measures that must be followed.
• School Nurse can provide targeted health services and meet any reporting requirements by the parole officer.
• The Principal and School Staff receives notification regarding an incoming student’s incarceration.
• Privacy notifications should be included in the incoming student’s records (so that the student’s privacy is not violated).
• The public may have a right to know if a person has committed a sexual crime (as a registered “Sex Offender”).
• Reference: Deb Came: Expertise regarding student information at the State level in Washington State.

Resources:
• School Staff awareness/training/policies/regulations of typical slippery-slope towards prison, dropout, or other failure-to-thrive. Methods and resources for identifying and mitigating students who are at-risk.

Managing Stakeholders
• Social Workers, principals, counselors, teacher’s aides, bus drivers
• Programs: Mitigating before/after school activities; trauma-informed education programs; culturally-responsive competence and programs

7.40.2 Definition of Maturity Levels of DomainX
Reference: Multi-tied systems of support (MTSS)

7.40.2.1 Low Maturity
• Parents / Staff are unaware of the student’s at-risk leanings or behavior; no mitigation measures.
• Only broadly-constructed, generalized supports are offered to the entire student popular. The school system does not adequately respond with specialized interventions.

7.40.2.2 Medium Maturity
• Parents / Staff are aware of the student’s at-risk leanings or behavior; mitigation responses are in-place
• Special supports are offered to targeted students; e.g., student with trouble reading receives extra, short-term attention

7.40.2.3 High Maturity
• Parents / Staff are predictive of the student’s behavioral risks; preventative measures are regularly offered and practiced
• Students with severe needs are identified, diagnosed, resources are allocated, progress is monitored; Special Education services are implemented; e.g., student requires and receives ongoing, intensive support
• Students who are at risk for incarceration are identified early and mitigation means are successfully implemented.

7.40.3 Foundation Components – eHealth Infostructure
The school health system should provide data for research that will improve juvenile justice student success (see “Outcomes: Successes”, below).

Data should be created that will enable:
• Individual teachers to use the data to monitor individual student’s progress and adjust corresponding plans.
• Individual school systems to use the data to measure, monitor, and validate their service delivery efforts.
• The juvenile justice system to use the data to cross-analyze approaches used in heterogeneous venues.
• The education system and administrative leadership teams to use the data to develop leadership advocacy and professional development training and mitigation.
• Legislators to use the data to balance and allocate resources and to monitor spending and quality.
• Other stakeholders to create, maintain, use, and (appropriately) share data with relevant members of the student’s multi-disciplinary team.

7.40.4 Foundation Components - ICT Infrastructure
• Information and Communications Technology Infrastructure
• Intervention: School-based virtual participation in school education, programs (e.g., virtual classroom learning; web-based viewing of sporting events, musicals)
• Equipment and technology could offer remote support and involvement of the student (with all proper security and confidentiality protocols in place)
• What are the means by which the State succeeds in providing a “free and equable education” for students who are in prison (or who are in boarding homes or who are restricted to their home)?

7.40.5 Foundation Components – School Health Program Structural Impacts
• Magnet organizations
    7.40.5.1 School System Components
    • Funding
    • Component types
    7.40.5.2 School Health Program infrastructure
    • x
    7.40.5.3 School Health Context
    • x
    7.40.5.4 Student-Health Acuity Levels:
    • x
    7.40.5.5 Research Considerations
    • Categories of Research
      o Legislative Statutes, School Policies, and School Regulations need be developed based on measurable, high-quality evidence.
    • Research professionals
      o x
    7.40.5.6 Addressing Problems
    • Problem Prevention
    • Problem Mitigation
      o Problem Mitigation professionals:
        x
    • Problem Adjudication
      o Problem Adjudication professionals
      o Problem Adjudication arenas

7.40.6 Goals and Outcomes
    7.40.6.1 Goals
    • x
    7.40.6.2 Outcomes
    7.40.6.2.1 Successes:
      o Early intervention success in decreasing juvenile crimes.
      o Incarcerated student successfully returns to school, graduates, and reintegrates into society.
      o School Boards and School Staff become aware of best-practice methods for reintegrating incarcerated students.
Model statutes, administrative codes, and protocols are available to all School Districts and State Legislatures regarding juvenile justice education.
Grants and other funding is available successfully create and manage education inside juvenile justice institutions.
Standardized outcome measures exist regarding all aspects of juvenile justice educational systems.
Adequate juvenile justice support personnel exist, including: advocates, compliance reporters, school administrators, teachers, counsellors, population health researchers, nurse administrator, content expert (who provides training on problem-descriptions, mitigation methods, and best-practices), care coordinator, law enforcement, parole officer, stakeholder convener, problem-adjudicator.

7.40.6.2.2 Failures:
- Public schools fail to reintegrate students who were incarcerated.
- Society pays a much higher (monetary and societal) price for students who are re-incarcerated.
- Student fails to acquire necessary skills to successfully function in society.
- Student fails to earn living wages or to earn an otherwise increased lifetime wage.
- Student harms self or others.
- Student joins a negative peer and/or support group (e.g., gangs).
- Children of a student who was incarcerated is negatively impacted and generational incarceration may occur.
- Family members of a student who was incarcerated may be negatively impacted.

7.40.7 References

From Kathleen Sande (20191218): Here is the contact person in PA who has a job similar to the one I had in WA State. He would be a good person to provide Pennsylvania State’s perspective:
- Ken Krawchuk, Neglected-Delinquent Coordinator of services for PA Incarcerated school students
- (717) 787-7135
- email kkrawchuk@pa.gov

Pennsylvania legislature seeks to improve juvenile justice:

Helping youth find education pathways after release:
https://www2.ed.gov/students/prep/transition/pathways-transitioning..

Recommendations on youth exiting incarceration and school records:
www.njjn.org/our-work/improving-education-for-youth-in-juvenile-justice-snapshot

This is a great report with lots of background:

Education behind Bars is a good resource:

The Center for Juvenile Justice Reform at Georgetown University has many resources. This is one:

And you will find many tools on this website:
www.neglected-delinquent.org

The Department of Justice and the Department of Education jointly released Guidance on Juvenile Justice schools:
7.41 Use Case: Students who need Professional Nursing Support

< Leslie Buter will offer input here >

7.41.1 Description:
- Use Case Students who need Professional Nursing Support
- Health Conditions; e.g., diabetes
- A nurse is required to provide nursing services; the service cannot be performed by another person.
- School nurse service-offering regulations often differ within each State.
- Delegation of nursing services may not be uniform by each State. (e.g., a nurse may not be permitted to grant a teacher the ability of offer a specified health intervention to a student).
- Some teachers or Staff may not be willing (or able) to understand and perform certain student-health interventions (e.g., a teacher might not desire to use a needle to deliver epinephrine; or a teacher may not be able to read and report certain medical measurements; a Staff member may not understand the rationale or gravity of a certain medical intervention; a custodian might not understand the restrictions, guidelines, and use of certain cleaning products; a food service worker might not understand the restrictions regarding the re-use of a cleaning rag that may contain allergenic residues).
- Professional Nurses are licensed healthcare practitioners.

7.41.2

7.41.3 Definition of Maturity Levels of Professional Nursing Service Offerings

7.41.3.1 Low Maturity
- Students’ health conditions are not identified; or they are identified, but only the most severely affected are given interventions.
- Nursing support and coverage is inadequate; one nurse covers thousands of students
- Only emergency care is provided.

7.41.3.2 Medium Maturity
- Students’ health conditions are identified and a nursing care plan exists.
- Nursing support is nominally adequate; one nurse covers 750-1500 students (which meets the minimal legal requirements)
- Mobile nursing is routinely practiced.
- Nursing coverage exists based on the health-condition acuity of the students’ health conditions or temporarily-injured students.
- Teachers receive adequate instruction from the nurse to help mediate student’s health conditions.
- x

7.41.3.3 High Maturity
- Nursing support is continually superior.
- At least one nurse in each school; coverage exists for students’ who have health needs.
- School-based health center; a provider can prescribe medical and/or behavior health interventions.
- Health education is a routinely offered by the School Nurse.
- Student support groups exist for students who have health conditions.
- Students have Special Interest Groups that support future health careers; nurses serve as (possibly paid) advisors.
• Telehealth / telemedicine capabilities are readily available
• Professional consults are easily achieved.
• X
• X

7.41.4 Foundation Components – eHealth Infrastructur (Specific to a Domain OR UNIVERSAL)
• School-based electronic health record systems collect and share health information (according to mandated protocols)
• Electronic templates and assessment instruments assist the nurse in collecting, managing, and routing selected student health information.
• Standards-based school health information data and systems, workflow, and business rules engines ought to be procured and implemented.
• Stakeholders are trained regarding the use of student-health information systems.
• Healthcare devices can be used to collect and route certain student-health information.

7.41.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
• Contact lists exist for the students’ parents and members of the student’s care team.
• Workflow and telecommunications contact-mechanisms support enhanced health care communications.
• Remote healthcare device monitors reports out-of-range

7.41.6 Outcomes / Goals / Successes (Specific to a Domain OR UNIVERSAL)

7.42 Student Health Records and Health Records Systems

7.42.1 Student Records and Student Health Record Systems
A student’s health record (SHR) depicts the health history, health status, and health goals of a student.

• Student Health Records
  o Information regarding a student’s health may be gathered via multiple means, including: paper records, completed forms, copies of records, facsimiles, images, photographs, and electronic conveyances.
  o Student health records are not homogenous. The use of SHRs is not standardized. SHRs are typically adapted for use by school districts, state requirements, and available funding.
  o Legally-required documentation of a nurse’s health care activities.

• Student Health Record Systems
  o Can be: a collection of paper files; developed in-house; acquired from a vendor.

• Nursing Process-Documentation, Tasks / Care Planning, Tracking, and Communication System
  o [Insert: ANA’s definition of the nursing documentation process]

• The SHR system is NOT the Student Education Record System (SERS). However, the SHR and SERS ought to interoperate. The SERS includes information about the bus schedule, class schedule, student activities, dietary and nutritional needs, and demographic information.

7.42.2 Maturity Levels of Student Health Records and Student Health Record Systems

7.42.2.1 Low Maturity
• Paper-based. Communication via mail. Oral communication. Human memory. Parental (oral) historian. Difficulty translating into multiple human languages. Difficulty conveying information and requirements to hearing-impaired and/or visual impaired stakeholders. No standardization of information and information – handling requirements. Reporting organizations do not receive necessary/required information. Information is not reliable; inconsistent levels of details, completeness, and integrity. Information cannot be summarized, merged, and analyzed. The loci and access of the information is inconsistent, disparate, and not well-maintained. Ad hoc approaches to information collection, management, storage, usage, transmission, archival, deletion, and protection. The quantity of records can make the records inaccessible or difficult to maintain. Varying scopes of practice, organization policies, and/or jurisdictional laws
increases the workload and recordkeeping burden. Funding levels are inconsistent and/or unpredictable. Hardware and software versions result in archaic or inaccessible records. High Staff turnover introduces documentation challenges. Record storage is not well-managed or well-protected; record capacity may exceed the capacity of the staff to access necessary records (in a timely fashion). Physical storage is subject to fire, flood, theft, or mold. Inadvertent mixing records of students may result in record disclosures or medical errors. Delegation of clinical recordkeeping tasks to untrained staff may result in errors.

7.42.2.2 Medium Maturity
- Fax. Checklists and tasklists. (Inflexible) Forms and Templates. Student records are kept in electronic form and are supplemented by paper. Multiple systems collaborate to comprise the students’ health concerns, but the systems are not integrated (e.g., nutrition, immunization, ); Incomplete documentation; documentation may occur well after the care was offered. The electronic nursing documentation system may be using outdated or limited forms and templates. Free-form notes are often used to augment electronic documentation limitations of the systems. The system is less child-centered than data-input and system-task centered. Workarounds are prevalent due to clinical care pressures and burdensome workloads. Reports must be individually conceived and manually generated. Systems do not easily allow tailoring and are inflexible with respect to new, novel, and/or localized reporting requirements. Systems are not easily updated with respect to clinical requirements. Externals systems do not have ready access to SRS’. Data sets are variable and are not uniform. Limited ability to share SRS information with teachers and other stakeholders.

7.42.2.3 High Maturity
- Record are interoperable to all relevant stakeholders; access is instantaneous. Records are maintained in a secure, confidential, and private manner. Records are standards-based, minimal, and non-redundant. Record systems guide the user to successfully complete the records. Clinical decision supports derive from excellent health records. Tasklists and nursing processes derive from the health systems’ internal workflow engines, business-rules engines, and integrations with external clinical systems. Updated clinical guidelines routinely imported into SRS. Knowledge gaps and clinical process gaps are routinely and transparently reported to analysts for mitigation. Required reports are created and transmitted to relevant stakeholders. The matrix of data-governance stakeholders and other stakeholders is maintained automatically. Consumer-generated data is collected in a controlled fashion. Data that can be made available for sale and reuse is governed and tracked. Consents and authorizations are well-managed and transmitted to relevant stakeholders. School Nurses serve as trusted process-advisors and clinical quality-improvement experts. Parents and members of the care team have access to relevant data. Contact lists are well-maintained and contact methods succeed quickly. Escalation of requests for parents and other stakeholders to complete documentation and to complete tasks is handled successfully. Advanced health care devices (such as telehealth) are implemented. Workforce training is provided and is logged at an individual level (e.g., a staff member is trained regarding a specific type of intervention for a given student). Evidence-based health care protocols and literature is accessible. [See: HEAL-WA (https://heal-wa.org)] Training performed by nursing professionals is supported by the school’s Administration and is tracked. Information regarding care administered is tracked by type (and certification) of the professional who administered the care.

7.42.3 Foundation Components – School Health Program Structural Impacts
- School health information is primary ingredient for the successful management of student’s health and the services that nurses provide. School System Components can be mandated by State, instituted at the policy level, or driven by local needs.
- School Health Programs require district-level champions and team members who can stimulate and lead discussions that result in actionable plans.
- School Health concerns must be data-based, demonstrably relevant, and potentially actionable to the community setting. School Health concerns must be prioritized and assessments authorized. The data collect must be curated, analyzed, and presented to school authorities. Then plans and corresponding measures must be developed.
- Sufficient funding will be required to sufficiently design, staff, and implement School Health Programs.
- School Health Programs can then be piloted, implemented, or (potentially) improved. Ongoing program evaluation is integral to sustainability of program goals and continuing excellence.
7.42.3.1 School Health Program infrastructure

- The School Nurse may identify, generate, promote, deliver, and/or supervise school health programs, for example:
  - Opioid Use Awareness
  - Bullying Prevention
  - Puberty and Reproductive Health
  - Immunization Education
  - Self Harm or Suicide Prevention
  - Health and Wellness Goals
  - Nutrition Education
  - School Safety Awareness

- The School Nurse may also provide Community Health Outreach and Education presentations (or organize guest speakers) regarding issues that are relevant to the community, perhaps within the school setting or on local cable access television stations. The nurse, as trusted community health professional, could lead discussions about lead levels in the water, bullying, school safety, food choices, opioid epidemic, self harm, or suicide awareness. The community could then be not only be informed, but directly empowered to support enhanced school health and safety.

- The School Nurse is required to send up-to-date population health information regarding local schools to jurisdictional authorities to be analyzed. Reports received from those authorities can then be interpreted by the school nurse, school administration, and school board to drive decision-making, policies, and school-based plans for improving health.

7.42.3.2 School Health Context

- School Health programs are delivered to students during their mandated attendance in the academic setting. Parents are motivated to support School Health Programs based on their natural concerns for students’ health and safety. School Districts serve as a trusted agent for delivering School Health instruction.

7.42.3.3 Student-Health Acuity Levels:

- Since a student’s health acuity may change over time (e.g., as the student grows and their bodies change), the health information ought to be able to inform relevant stakeholders about the student’s previous acuity vis-à-vis the student’s present acuity. That is, (relevant, condition-specific, targeted) historical data ought to inform the current treatment plan. The system ought to provide the ability for a clinical professional to tailor an extraction of the relevant data. For example, a student’s paper chart might contain historical information (e.g., chronic absenteeism due to asthma in kindergarten) that predicts reading difficulties in third grade.


- The Student Health System ought to make recommendations regarding the dynamic need for (increased or decreased) staffing requirements (based on the student’s health needs and based on the staff’s availability) and according to the needs for varying types of clinical expertise.

- The SHS ought to report student-health information to county, state, and national surveillance organizations and to professional organizations for data-mining and analysis.

- The SHS needs to generate benchmark reports to Administrators and relevant reporting organizations regarding school’s health needs and depict the ability of the schools to successfully cover those needs. These data-based reports can be used by Administrators to adjudicate the allocation of scarce resources and by Parent-Teacher Organizations to adjust the level of effort towards after-school reading and nutrition programs.

7.42.3.4 Research Considerations

- Categories of Research
  - Analysis of student-outcomes and the characteristics of School Nurses support.
  - Analysis of student-health-services benchmarks (e.g., Does the school have a Nurse Administrator/Manager? Does the School Nurse have access to an electronic health record system? Does the School Nurse have access to external clinical specialists? How successful is the collection, transmission, and use of the School Health Records? How effective is the SRS?)
o Analysis of the (stepwise, incrementally-improving) level of training offered and mastered by the users.
o Analysis of the level of remote SRS support by expert trainers and by (real-time) troubleshooters.
o Analysis of the ability to evaluate the use of the SRS (to correctly document health encounters).
o Analysis of the usability of the SRS.
o Analysis of the quality-improvement capabilities of the system (and its users).

- Research professionals
  o School Health environment / building experts.
o Clinical Outcomes experts.
o Student Population experts (e.g., Attendance, graduation, test-scores, discipline, absenteeism, grades, classroom size, student-teacher ratio, college-ready, workforce-ready).
o Behavioral Risk Surveys; Healthy Youth Surveys; SDOH Surveys.
o Risk-Factors analysists.
o Student Health Information and Student Health Information System experts.
o Funding, Grants, and other resources Budgeting Managers.
o Medicaid Billing analysists.
o Special Education Program analysts.
o (Software and System) User-Design / Human-Factors Experts.
o Technology, Communications, and Infrastructure analysists.
o Policy, Legal, Regulatory, and Budget analysists.
o Credentialing, Training, Human Resources analysists.
o University Course-Development analysists; Professional Society Course-Development analysists.
o Nutrition service experts.
o School Safety and Security experts.
o Custodial / Maintenance / Building-and-Grounds analysts.
o Transportation analysts.

7.42.3.5 Addressing Problems

- Problem Prevention
  o Student Health is improved when early identification and intervention takes place.
o Risk Factors can indicate the need for specific types of surveillances. Well-designed surveillance engines ought to predict areas of potential problems and alert relevant personnel. Surveillance techniques and measures have the potential to prevent many types of school-based problems.
o Healthier students are better able to achieve academic success. School Health Programs improve student health and help prevent health problems.
o Environmental factors need to be managed in order to promote student health and population health (e.g., room temperature, noise, air quality, water quality, and asbestos).
  o (Ad hoc and long-term) staffing levels and properly credentialed staff need to be sufficiently managed in order to maintain a safe and equitably-supplied environment.
  o Proposed legislation should be examined and vetted by appropriate staff before being legislatively mandated.
  o Examine Unfunded Mandates for inadvertent consequences.

- Problem Mitigation
  o Problem Mitigation professionals. Each type of potential problem needs to be managed and mitigated by an appropriate professional.

- Problem Adjudication
  o Problem Adjudication professionals. Since the arena of potential problems are broad, many types of adjudication professionals may need to be identified and secured.

7.42.4 Foundation Components – eHealth Infostructure (Specific to a Domain OR UNIVERSAL)

- Editor’s note (ask FHIR experts to insert backgrounder here): FHIR resources ought to be employed by senders and receivers of School Health information. Depict the need for the ability to see the actual context of the given set of information being transmitted.
- The system ought to intelligently discover novel methods, best-practices, and/or patterns regarding a students’ (changing) health conditions and the school environments (changing) health requirements.
- School Health Systems ought to prompt School Nurses regarding changes in acuity or condition to address emerging student needs. For example, the system could offer a proposed set of interventionary steps to the
School Nurse for review and acceptance when updating a student’s care plan (in collaboration with other members of the care team).

- External systems could transmit updated clinical encounters to the School Health system so that the School Nurse could vet the new information and possibly adjust the student’s daily plan (in conjunction with school Staff such as teachers, cafeteria personnel, and maintenance workers). For example, a newly diagnosed diabetic condition from a pediatrician prompts the School Nurse to develop a health plan that accommodates the new health concern.
- Clinical guidelines, school safety guidelines, and research studies ought to be able to influence the behavior of school systems to increase the awareness of evidence-based approaches for supporting the student’s health.
- School Health Information Systems ought to provide the ability to link to external resources that provide educational information about various health conditions, interventionary protocols, or reporting requirements.
- Information messaging capabilities need to provide an accommodation for varying levels of severity so that the user is not inadvertently overwhelmed (or overburdened) by the quantity of alerts, reminders, notifications, notices, and other messages.
- The School Health System ought to analyze and determine that a given student’s health is approaching a different level of acuity and notify the School Nurse of a possible “at-risk” condition.

7.42.5 Foundation Components - ICT Infrastructure (Specific to a Domain OR UNIVERSAL)
Information and Communications Technology Infrastructure.

- [Editor’s note: point to another section that already specifies the ICT Infrastructure.]

7.42.6 Goals and Outcomes

7.42.6.1 Goals

- The students’ health record system captures the health history, health status, and health goals of a student and enhances the School Nurse ability to provide care – resulting in improved student health and academic outcomes.
- Advanced School Record Systems provide External Stakeholders with information that discloses the health and academic status of the students, enabling them to achieve their particular goals. For example: Policy analysts are able to create (or tailor) policies that address health gaps and problems.
- Information is no longer siloed within the school setting and system fragmentation is reduced or eliminated, thus allowing multiple stakeholders to interact with each other in a more comprehensive, coordinated, and cogent fashion.
- High-quality, standards-based health records and systems reduces costs internally (within the school setting) and externally (within the community, for example, via workers who are better equipped to enter the workforce and benefit society).
- Student health and academic outcomes can be improved.
- Community health outcomes and parental engagement are supported.
- Future needs can forecasted (when informed by well-constructed surveys and measures).

7.42.6.2 Outcomes

7.42.6.2.1 Successes:

- School Health Records and School Health Record Systems successfully support school health and academic excellence.
- Multifaceted data points identify a health concern that otherwise may have been undetected by the School Nurse. Other school staff can coordinate with the School Nurse to use the data points to design a successful intervention.
- Inform an ongoing, collaborative safety plan that interrupts and successfully mitigates an unhealthy behavior.
- The School Nurse is alerted in a timely fashion to health concerns based on data-centric, longitudinal care – capabilities.
- The School Nurse monitors the student’s multi-year school health and academic progress.
- Early detection and integration prevents devastating – possibly preventable – tragedies (such as a suicide).
7.42.6.2.2 Failures:
  o When School Health Records or School Health Record Systems fail, students may not receive timely or sufficient interventions, resulting in morbidity or mortality (for example, anaphylaxis, asthma, absenteeism, or depression).
  o Academic failure may result from inadequate or failed health information collection, flow, sharing, and use.
  o Decreased quality of life may be present not only while the student attends school, but may persist thereafter.
  o Statistics indicate that shorted lifespan accrues from academic deficiencies or failures.


7.43 X
7.44 X
7.45 X
7.46 X
7.47 X
7.48 X
7.49 X
7.50 X
7.51 X
7.52 X
7.53 X
7.54 X
7.55 x
7.55.1 Description: Use Case DomainX
7.55.2 Definition of Maturity Levels of DomainX
7.55.2.1 Low Maturity
7.55.2.2 Medium Maturity
7.55.2.3 High Maturity
7.55.3 Foundation Components – eHealth Infrastructure
7.55.4 Foundation Components - ICT Infrastructure
7.55.5 Outcomes / Goals / Successes

7.55.6 Description: Use Case DomainX
7.55.7 Definition of Maturity Levels of DomainX
7.55.7.1 Low Maturity
7.55.7.2 Medium Maturity
7.55.7.3 High Maturity
7.55.8 Foundation Components – eHealth Infrastructure
7.55.9 Foundation Components - ICT Infrastructure
7.55.10 Outcomes / Goals / Successes

8 Appendix B: Standards
8.1 EHR-S FM Standards for SHIFT

8.1.1 School Health Functional Profiles

School Health Functional Profiles will likely need to be developed, including:
- Health Screenings
  - Physical Examinations
  - Oral Health
  - Visual Health
  - Auditory Health
  - Social Determinants of Health
- Immunizations
- Nutrition, Food Security, and Optimal Weight
- Mobile Devices
- Sports Medicine / Athletic Training
- Mental Health / Behavioral Health
- Physical Health, Wellness, and Health Goals
- Personal Health Records
- Medicinals, Therapeutics, and Interventions – Management
- Transportation Monitoring, Safety, Communications, Measures, and Reporting
- School Population Measures and Reporting
- School Environment Measures and Reporting
  - Laboratory Communications
  - Noise, Lighting, Temperature, Air Quality, Video Surveillance
8.1.2 HL7 Standards – Ambassador Briefings

**EDITOR’S NOTE:** The following typifies the interest that States will likely demonstrate when attempting to locate a set of standards that describes School Health System Functionality components.

2012-11-12 From John Ritter to Lori Ashford:

Lori Ashford  
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Texas Department of State Health Services  
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Lori,

FYI: We spoke at the PHSDC about HL7’s EHR System Functional Model’s Functional Profiles of Public Health systems….

Here’s the gist of the “Ambassador Briefing” presentation regarding the HL7 EHR System Functional Model:

- HL7 is a Standards Development Organization that creates a suite of standards.
- One of those standards is the “EHR System Functional Model” (EHR-S FM).
- The EHR-S FM standard offers a very good description of what EHR systems can (or should) be able to do.
- Without such a good description, it is virtually impossible for one EHR system to talk to other systems.
- Furthermore, systems can be “certified” by proving that they adhere to the standard.
- Those certified systems can then be used in meaningful way (i.e., “Meaningful Use” in the USA); measurements of the use of that functionality can then be believable (and Incentive monies can be awarded, accordingly).
- The EHR-S FM is designed to be tailored (i.e., “profiled”) according to various care settings (also known as “domain areas”).
- “Public Health” is one of those care settings.
- In fact, Public Health is actually a family of care settings.
- Currently, nine Public Health functional profiles are being developed.
- Hopefully, those functional profiles will be used in the near future to help certify systems as meeting Public Health stakeholders’ needs (opening the door for electronic interoperability).

8.1.3 HL7 Standards – Functional Profile: School Nutrition (draft example)
EDITOR'S NOTE (John Ritter 20190718) Here are the EHR-S FM functions that likely apply to School Nutrition (though some of these might need to be adapted to School Health systems, Student-Attendance systems, Personal Health Record systems, Health Statistics systems, Food and Nutrition Management Systems, School Nursing Systems, Health Care Devices systems (or apps), Food Label-Reading systems, Student-Transportation Systems, Student-Athletics systems, Social Services systems, and other systems). Also, consider adding other types of functionality here as well:

- CP.1.2 DESCRIPTION (“In this function the term "allergy" is used to refer to allergies, intolerances, adverse reactions and sensitivities.”
- CP.1.1 Manage Patient History
- Evaluate all of CP.1.2 Manage Allergy, Intolerance and Adverse Reaction List
- CP.1.3 Manage Medication List
- CP.1.4 Manage Problem List
- CP.1.5 Manage Immunization List
- CP.1.7 Manage Medical Equipment, Prosthetic/Orthotic, Device List
- CP.1.8 Manage Patient and Family Preferences
- CP.1.9 Manage Adverse Events
- CP.2.1 Render externally-sourced Clinical Documents
- CP.2.2 Render externally-sourced Data
- CP.2.5 Manage Patient-Originated Data
- CP.3.4 Manage Patient-Specific Care and Treatment Plans
- CP.3.5 Acknowledge/Amend Other Provider Documentation
- CP.4.2.1 Medication Interaction and Allergy Checking
- CP.4.2.2 Patient-Specific Medication Dosing & Warnings
- CP.4.3 Manage Non-Medication Patient Care Orders
- CP.8.1 Generate, Record and Distribute Patient-Specific Instructions
- CP.9 Manage Care Coordination & Reporting
- CPS.1.7.1 Support for Patient and Family Preferences
- CPS.1.7.3 Manage Consents and Authorizations
- CPS.2 Support externally-sourced Information
- CPS.2.5 Support Patient-Originated Data
- CPS.2.6 Support Patient Health Data Derived from Administrative and Financial Data and Documentation
- CPS.2.8 Support Medical Device Originated Data
- CPS.2.9 Support Data and Documentation from External Sources for the Adverse Events domain.
- CPS.3.3 Support for Standard Care Plans, Guidelines, Protocols
- CPS.3.4 Support for Context-Sensitive Care Plans, Guidelines, Protocols
- CPS.3.6 Support Self-Care
- CPS.3.7 Capture Guidelines and Standards from External Sources
- CPS.3.10 Support for Identification of Potential Problems and Trends
- CPS.3.1 Support Other Encounter and Episode of Care Documentation (e.g., for Nutritionists)
- CPS.4.2.1 Support for Medication Interaction and Allergy Checking
- CPS.4.2.2 Support for Patient-Specific Dosing and Warnings
- CPS.4.2.5 Support for Medication Reconciliation (instead, apply this concept to Nutritionals)
- CPS.4.6 Support for Referrals (perhaps applying this concept to Nutritional assessments, reconciliations, referrals, care coordination, reporting, et cetera)
- CPS.7 Support Future Care
- CPS.8 Support Patient Education & Communication (including all of its child-functions)
- CPS.9 Support Care Coordination & Reporting (including all of its child-functions)
- POP Population Health (perhaps some of its child-functions)
- AS.8.1 Support Rules-Driven Clinical Coding (replace “clinical” with “nutritional” coding)
8.2 Mobile Health Standards for SHIFT
8.3 Vocabulary Standards for SHIFT

8.3.1 Dental
8.3.2 Immunizations
8.3.3 (Other)

9 Appendix C: References

10 Appendix: xxxxx

Electronic Long-Term Services and Supports (eLTSS) Implementation Guide

http://hl7.org/fhir/us/eltss/

Introduction

The electronic Long-Term Services and Supports (eLTSS) Implementation Guide (IG) is based on FHIR R4. It was developed to support exchange of data generated during the planning and provision of long-term services and supports and is currently scoped to data commonly found on LTSS service plans.

Long-term services and supports (LTSS) are needed by millions of people, including children, adults and individuals over age 65, due to various disabling conditions and chronic illnesses. Long-term services are comprised of a diverse set of assistances designed to help with general care, activities of daily living (ADLs), and instrumental activities of daily living (IADLs) like eating, toileting, dressing, cooking, driving, managing money, etc. These services are provided across various settings from facility-based or institutional care to community-based settings. Services and supports provided in the person’s home or in a community setting are referred to as Community-Based Long-Term Services and Supports (CB-LTSS) or Home and Community-Based Services (HCBS).

eLTSS Actors:
- HCBS Provider: A provider of an authorized service which assists in maintaining and enabling the beneficiary to continue living in his or her home and community (e.g. social worker, in-home supportive service provider, direct-care worker/personal care aide, adult day care provider, multipurpose older adult service program provider, case manager, personal care provider, home care agency, hospice care agency, job development and supported employment, equipment and technology, peer specialist, community integration, support broker, fiscal intermediary, and others who provide assistance in support of participant direction, etc.).
- Clinical and Institutional-based Provider: A provider of medical or health service and any other person or organization that furnishes, bills, or is paid for health care services in the normal course of business. This includes a licensed/certified and/or qualified person who provides health care, who is authorized to implement a portion of the plan and who has care responsibilities (e.g. physician, advanced practice nurse,
physician assistant, nurse, nurse practitioner, nurse care manager, psychologist, therapist, pharmacist, dietician/nutritionist, specialist, dentist, emergency department provider, etc.). This also includes an organization including, but not limited to a hospital including short-term acute care hospital and specialty hospital (e.g., long-term care hospital, rehabilitation facility, and psychiatric hospital, etc.), ambulatory surgery center, provider practice, and nursing home.


DATE: Thursday, January 16, 2020
TIME: 2:00PM ET - 1:00PM CT - 11:00AM PT

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Overview:

The U.S. Department of Education, along with the departments of Justice, Homeland Security, and Health and Human Services has released a new planning guide to help school districts develop and maintain emergency operations plans (EOPs). The guide, which comes amid a rise in school shootings in the United States, delivers on a recommendation from the Federal Commission on School Safety to provide schools with resources and assistance in developing EOPs with their community partners, such as local law enforcement.

In this webinar you will learn about **emergency planning for schools** which includes:

* Security risks and planning for educational institutions
* Contents of this planning guide and recommendations
* Insight into how different jurisdictions at the state, local, and federal level can work together cohesively

**PRESENTERS:**

John Friedlander

John Friedlander is a senior manager with Kroll’s Security Risk Management practice. John has a varied security operational and administrative background, and for 20 years has directed security management operations for clients that include leading financial firms, property management organizations, and high-net-worth individuals. Earlier in his career, John was Senior Security Consultant with Prudential Financial. His primary responsibilities included assessments and planning and implementation of asset protection programs and systems across the enterprise. John has served as an Adjunct Lecturer at John Jay College of Criminal Justice in the Protection Management department since 2008, teaching classroom and online graduate level courses.

Dan Linskey

Daniel Linskey is a managing director in Kroll’s Security Risk Management practice, head of the Boston office, and a fellow at the Duff & Phelps Institute. As the former Superintendent-in-Chief of the Boston
Police Department (BPD) and a 27-year veteran of the force, Dan provided strong leadership through some of the most tragic and contentious events in the city's history, including the Boston Marathon bombings and the Occupy Movement.

A Q&A session will be held during the last 15 minutes of the Webinar.

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Policymakers Order Review of Pennsylvania Juvenile Justice 2019-12-16

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U.S. Office of Juvenile Justice and Delinquency Prevention states: Pennsylvania has one of the nation's highest rates of juvenile incarceration.

PA Governor Wolf said. "Improving our juvenile system can have an enormous positive impact on our commonwealth by preventing young Pennsylvanians from ever entering our state prison system.”

Legislative leaders and Democratic Gov. Tom Wolf announced formation of the group at a Capitol news conference, giving it nearly a year to issue recommendations about how to make people safer, improve accountability and save tax dollars. Its members will be appointed by Wolf, the court system and the Legislature.

House Majority Leader Bryan Cutler, R-Lancaster, said the concept is to use data and research to reconfigure the juvenile justice system to improve results.