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Evidence of School Nursing Impact: Applying the Omaha System to Individual Healthcare Plans (IHPs) to Document Nursing Services and Demonstrate Student Outcomes

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This is to certify that I have examined this

Doctor of Nursing Practice systems change project

written by

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and have found that it is complete and satisfactory in all respects,

and that any and all revisions required by

the final examining committee have been made.

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_____9.21.2016_____

Date

DEPARTMENT OF NURSING

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Abstract

School nurses are the health safety net for children and youth including the one in five who have chronic health conditions. As health care providers in a non-health system, school nurses are challenged to legitimize their role by showing impact on the health and education of children and youth. The Omaha System is a standardized nursing language that has the capacity to document nursing assessment, intervention and client outcomes and is used in clinical and community settings. This study examined the feasibility of using the Omaha System in the school setting. While there would be significant logistical hurdles and a steep learning curve, expert school nurses found the Omaha System to be workable and potentially useful in their practice.

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Background and Significance

The purpose of education is to prepare children for work, college, career and life.

Education is viewed as the key to breaking the cycle of poverty, promoting civility and

guaranteeing democracy, providing economic security for the nation and promoting the health of

the population. Yet not all children have an equal start nor find schools to be a level playing

field. The number of children with chronic and complex health needs is on the rise, in part due to

more children surviving birth and infancy thanks to advances in medicine, science, and health

care delivery (Singer, 2013). Premature children often have developmental, neurological,

physiological and other complications that interfere with their learning, growing, and

development (United States Department of Health and Human Services [US DHHS], 2013;

Gibbons, Lehr & Selekman, 2013). In addition, chronic conditions such as asthma are

overrepresented in populations living in poverty (Akinbami, Moorman, Bailey, Zahran, King,

Johnson & Liu, 2012). Nationwide, one in five children under the age of 18 live in poverty at the

Federal Poverty Level (FPL) of an annual income of $24,000 for a family of four (weekly

income of $459 [2014-15]). Forty three percent live at or below 200% of the FPL (Child Trends

Databank, 2015; United States Department of Agriculture Food and Nutrition Services, 2016). In

Minnesota, 31% of children receive Free Meals at school (family income 130% of FPL), and a

total of 38% receive Free and Reduced Price Meals (family income up to 185% FPL). The meal

subsidy rate is used by schools as the Socio Economic Status (SES) indicator for low income

(Minnesota Department of Education [MDE], 2016). Economic problems compound child

development experiences, compound health problems, and compound education problems (Halfon, Wise & Forrest, 2014).

For children with chronic or urgent health conditions, school nurses provide daily medical care, teach self-care skills, ensure that school staff can respond in emergencies and, most importantly, reduce interference with the work of children – learning. School nurses develop nursing care plans, called Individual Healthcare Plans (IHPs), for children with potentially life-threatening conditions –asthma, diabetes, seizure disorders and severe allergic responses – and for children with complex health needs.

Schools are touted as a 'hidden health care system' (Lear, 2007; Robert Wood Johnson Foundation, 2010). Children with disabilities who need health supports in order to attend school receive services from qualified health providers that are equivilant to services provided by clinics and in community settings. In fact, schools must meet criteria set by the Centers for Medicaid and Medicare Services (CMS) and are required to seek reimbursment from federal Medicaid for the cost of services provided to children with disabilities (Minnesota Department of Human Serivces [DHS], 2016).

However, children and youth are perceived as a well population and the majority of children are in good health. Therefore, school nursing services are not fully understood nor valued by either the healthcare system or the education system. Given tight education budgets, school nurses are challenged to justify their positions and provide evidence of how they impact the health and education of children and youth (National Association of School Nurses [NASN] & National Association of State School Nurse Consultants [NASSNC], 2014). Therefore, in order to be seen as essential in the education system, school nurses must document and communicate the link between the services they provide and student outcomes.

School nurses are independent and autonomous health care providers practicing in a non-health setting. For this highly self-directed practice, the expected preparation for school nurses is a baccalaureate or higher degree in nursing. In Minnesota, RN/Licensed School Nurses are credentialed by the Boards of Nursing and Teaching, requiring a bachelor's degree in nursing. The majority of school nurses' work is independent nursing practice, yet documentation of nursing services is often limited to delegated medical functions (administration of medications and treatments ordered by prescribing health care practitioners).

Current school health data systems pose barriers to school nurses documenting the full scope of their practice and the resulting student health and education outcomes. Children's health records are a part of the local school district's education electronic and paper data systems, are designed by local school districts and are part of student academic files. Information commonly included in student health records are immunization records, screening results, medications, illness and injury records, and health information related to learning disabilities. Except for immunizations, there are no consistent definitions, parameters or enumeration of health problems. The school records do not comply with directives for health records to be electronic, interoperable and use standardized languages (Johnson & Guthrie, 2012; Minnesota Department of Health [MDH], 2015) nor with the Children's Electronic Health Record (EHR) format standards set for children receiving Medicaid services (Dufendach, Eichenberger, McPheeters, Temple, Bhatia, Alrifai, Potter, . . . Lehmann, 2015). Communication among health care providers, parents and schools, could be improved by having compatible Continuity of Care Documents (CCD) to exchange health information in real time (NASN, 2014; McNickle, 2012). School records could be a rich data source, if consistent in form and content, on the health status of children, offering data across communities and longitudinal population data on public school attendees (HIMSS CNO-CNIO Vendor Roundtable, 2015). Current systems cannot be tapped for

data to better understand *what* interferes with learning, *why* students are absent, *if* medications

and behavioral interventions work, or *how* health barriers could be removed. Data are not

available, nor have criteria been set, to assist districts in determining, at a population level, the

level of services necessary for children to be safe at school, resulting in wide differences from

district to district in the level and amount of nursing services provided. At present, there are no

mandates or incentives for schools to improve records, and there is a continued lack of awareness

that health records provide meaningful *education* data. From the health care arena, there is a

persistent skepticism that schools can or do provide significant health care and a lack of

awareness that schools potentially have meaningful *health* data.

Standard Nursing Terminology

The National Association of School Nurses (NASN) recognized the lack of data on

school nursing practice and has embarked on establishing a universal data set (NASN, 2014;

NASN & NASSNC, 2014). Underway is a national survey of schools, "Step Up and Be

Counted", to report the numbers of 1) professional nurses employed; 2) children with medical

diagnoses of asthma, diabetes, seizure disorders or severe allergic reactions; and 3) health office

visits and disposition (return to class, sent home, referred). Not included in the data set are

independent nursing interventions nor change in health and education status of children as a

result of nursing interventions.

Rutherford (2008) summarized the benefits of standardized nursing language as "better

communication among nurses and other health care providers, increased visibility of nursing

interventions, improved patient care, enhanced data collection to evaluate nursing care outcomes,

greater adherence to standards of care, and facilitated assessment of nursing competency" (p. 1).

A standardized language, when used in electronic health information systems, is "interoperable

across a variety of settings [and] will allow the expansion of evidence to determine nursing

interventions that support student academic success" (NASN, 2014, p. 2). Electronic systems

also support "the ability to make the right information available to the right provider at the right

time" (Johnson & Guthrie, 2012, p. 31). A standardized nursing language useful to schools must

be able to be readily incorporated into education data systems, be useful in planning care and

also in documenting services, be flexible enough to add educationally-relevant concepts, and be

able to measure the impact of nursing services.

The Omaha System holds promise for school nurses. It is one of twelve terminologies

currently recognized by the American Nurses Association (ANA) as supporting nursing practice.

Also on ANA's the list are the North American Nursing Diagnosis Association (NANDA) and

the corresponding Nursing Interventions Classification System (NIC) and Nursing Outcomes

Classification (NOC) (Nelson & Staggers, 2012). NANDA is the standard terminology

recommended by NASN (2014) for use by school nurses. NANDA, NIC and NOC are licensed

and copyrighted products and have license fees based on usage (2016). Yearou, in a 2011

national study of school nurses, found 77.1% used no standardized language, 15.1% documented

using NANDA consistently, and 1.2% (3 individuals) used the Omaha System.

This study investigates the Omaha System. School nurses who adopt the Omaha System

may continue to use NANDA as recommended by NASN. The Omaha and NANDA systems are

compatible. The Omaha System problem statements have been aligned with the NANDA

Nursing Diagnoses (Hwang, Cimino & Bakken, 2003; Hyun & Park, 2002; Monson, K. January

10, 2016, personal communication). And both the Omaha System and NANDA are mapped to

the National Library of Medicine's Metathesaurus, Logical Observation Identifiers, Names, and

Codes (LOINC®), Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT®),

Health Level Seven (HL7®), International Classification of Nursing Practice (ICNP), and others

(Garvin et al., 2008). These systems facilitate exchange and retrieval of electronic records from one data system to another (McGoniglev & Mastria, 2012).

Significant changes in health care systems can be marked by recent federal laws: The Health Insurance Portability and Accountability Act (HIPAA) of 1996 set requirements to simplify program administration by using standard language and codes for communication and billing and to set privacy and security limits on health records. The Health Information Technology for Economic and Clinical Health (HITECH) provision passed as part of the American Recovery and Reinvestment Act of 2009, set standards to improve documentation of health care, communication among providers, and analysis of data to determine effectiveness of care and gaps in service. At the core of HITECH is the electronic, interoperable record using standardized terminology. HITECH supports the national triple aim of better health care at a reduced cost and improving the health of the population (Gialannella, 2012).

Minnesota's Interoperable Electronic Health Record Mandate (Minnesota Statute, sec. 62J.49) called for all health care providers that bill for health services to have in place, by January 2015, electronic, interoperable records. Such records require use of standardized terminology. The Minnesota e-Health Advisory Committee (Minnesota Department of Health [MDH], 2014a) recommended that health providers in community settings use standard nursing terminology, naming the Omaha System as top priority. Many home care agencies and all public health agencies in the state are conforming to the recommendation (Minnesota Department of Health [MDH], 2014b). Schools have not yet been challenged to comply with the e-health record requirements even though schools are considered a community setting and do bill the health care system, namely Medicaid, for costs of health-related services provided to children with disabilities. One purpose of the federal and state laws regarding health records is to improve

continuity of care, a critical need for children with chronic conditions where communication

among the family, health care provider and school is vital.

The Omaha System

The Omaha System has potential as a documentation system for school health services. It

was introduced to school nurses but has not penetrated school nursing practice (Bedarz, 1998;

Martin, K., personal communication, September 5, 2014).

The Omaha System was created in the 1970s in a community health setting; testing on

reliability and validity was supported by federal grants. It is being used internationally in diverse

practice settings such as public health, home health, nurse-managed centers and in schools of

nursing (Garvin, Martin, Stassen & Bowles, 2008; Martin, 2005; Martin, Monsen & Bowles,

2011; Monsen, Bekemeier, Newhouse & Scutchfield, 2012). As mentioned, the Omaha System

has been recognized by the ANA as a standardized terminology to support nursing practice since

1992 and the Omaha Systems has been incorporated into cross-walking systems that read and

translate electronic codes (LOINC, SNOMED, HL7, and others) (Garvin et al., 2008).

Characteristics of the Omaha System that make it attractive for use in schools are: 1) the

potential for intra-professional use by nurses, social workers and other allied health personnel, 2)

it is applicable to critical and chronically ill clients and well clients, 3) it's adaptability to

individual, family and community health programming, 4) it is inclusive of illness care, health

promotion and enabling support systems, 5) it recognizes determinants contributing to health

disparities, 6) the inclusion if a scored measure of client outcomes associated with interventions,

and 7) it uses common language, not medical or nursing jargon. Importantly, the Omaha System

terms, definitions, and codes are in the public domain – not held under copyright (The Omaha

System, 2016). The framework, terms and concepts and coding are available at no cost, save for

the text book (Martin, 2005). The system can be used in pencil-paper records, an electronic

spread sheet or incorporated into an existing electronic record system. Several modest-cost

commercial products exist and could be integrated into school system record systems, linked to

school records or used as a stand-alone system.

The Omaha System has three primary components: 1) *problem classification* scheme*,*

2) *intervention* scheme, and 3) *problem rating scale* for outcomes. The *problem classification*

scheme has four domains: *environmental, psychosocial, physiological,* and *health-related*

behaviors. Each domain covers several health problems, each with defined signs and

symptoms, totaling 42. Each problem may require one or more resolutions, with the provider

intervening through *treatments and procedures; teaching, guidance, and counseling; case*

management; and/or *surveillance*. The *problem rating scale* is used to score a client's

knowledge, behavior and status related to each problem. The scale is a five-point measure

taken when the problem is first identified, periodically, and when the problem is resolved.

A repository of Omaha System research at the University of Minnesota, School of

Nursing, Center for Nursing Informatics, lists more than fifty completed studies since 2006 and a

dozen studies in process (Omaha System Partnership*,* 2016; Topaz, Golfenshtein & Bowles,

2014).

School Nurses Create Individual Healthcare Plans (IHPs)

School nurses create IHPs for selected children with chronic and urgent conditions that

require nursing care such as asthma, diabetes, seizure disorders and children with severe allergic

responses (Selekman, 2013). The IHP is developed following a nurse's comprehensive

assessment of health history, current health status and the child's strengths, vulnerabilities and

needs. The IHP includes health problems, student goals, and nursing interventions. Interventions

often include managing prescribed medications, addressing knowledge deficits of the child,

teaching self-care skills, monitoring, attending to socio-emotional concerns of the child, and

training key school staff to ensure the school environment is safe and responsive to urgent needs.

The related Emergency Care Plan or Emergency Action Plan (ECP/EAP) has a simple

'see this – do this' format and is used to train school staff to respond to urgent conditions. For

certain conditions, primary health care providers develop an action plan – the Asthma Action

Plan, for example. This is an important tool to confirm that a parent understands the needs of the

child and can readily share the information to ensure consistent care at school, the child care

setting, community activity centers, and by neighbors and family members. The school nurse

expands the Action Plan via the IHP to describe how plan is to be is carried out in school and

who is to be trained. The IHP is intended to go beyond planning for emergencies to teaching the

child self-care skills, addressing coping needs, and anticipating changes in schedule (shifting

lunch or physical activity schedules, before and after-school activities and field trips), or stressful

periods that can affect a child's stability and wellbeing.

The IHP is used to guarantee protection and appropriate health care for children

according to state law (Minnesota Statues, section, 121A.220, Subd. 2, requires schools to work

with parents and health care providers to develop IHPs for children with severe allergies).

Secondly, the American with Disabilities Act as Amended (ADAA) of 2008 and Section 504 or

the Rehabilitation Act of 1973 (Section 504) (United Stated Department of Education [US DoE],

Office of Civil Rights [OCR], 2015) prevents discrimination due to health disabilities and other

conditions. A child's 504 plan list the services and accommodations needed for a child to access

education. Examples are ramps and elevators for a person in a wheel chair or administration of

medications for asthma or insulin for diabetes – ensuring children have oxygen in their brains

and energy in their bodies. The IHP equates to the 504 plan in some states. Finally, for a child

with an *education disability*, more specific than the health disability just mentioned, the child is

entitled to a Free Appropriate Public Education (FAPE). The IHP explains the nursing services

necessary for a child to attend and participate in school and take full advantage of the instruction

provided, complementing the child's special education Individual Education Program (IEP) plan

(United Stated [US] Department of Education [DoE], n. d.; Lipkin, Okamoto, Council on

Children with Disabilities & Council on School Health, 2015).

Documentation of school nursing practice typically focuses on logging compliance with

medical orders for routine medications and treatments. School nurses add narrative notes

regarding treating episodic illnesses, injuries or children seeking out the health office as a safe

haven from stress.

IHP descriptions of the nursing interventions are typically not consistent or complete. For

instance, the researcher's review of IHPs in an important textbook for school nurses (Selekman,

2013) found IHPs generally included medication administration, some had teaching self-care

strategies, and some named consultation with teachers and training staff. While these activities

are 'givens' in school nursing practice, they were not consistently articulated in IHPs.

An important evidence-based care coordination model researched by Engelke and

colleagues (Engelke, Guttu & Warren, 2009) includes the following elements of a nursing care

plan that are familiar Omaha System concepts: problem, student goals (safe school environment),

interventions (direct care - medication administration, assist in managing symptoms; student

education/counseling; parent/family education; and health care coordination) and student pre and

post measurement of student outcomes (Engelke, Guttu & Warren, 2009; Engelke, Swanson &

Warren, 2014). The elements align with the Omaha System as follows: Problem statement and

goals (called problem statements with targets in the Omaha System); Intervention strategies, for

the Omaha System, called treatments and procedures; teaching, guidance and counseling; case

management (includes coordination with parents, health care provider, and school staff for

school safety); and surveillance or monitoring (Martin, 2005); and outcomes measurement. Therefore, the Omaha System can assist school nurses to provide care coordination by directing the nurse to develop a comprehensive prevention and intervention plan.

Asthma - A Chronic and Urgent Health Condition Addressed by School Nurses

For this study, the researcher selected asthma as condition for the sample Omaha System IHP. Asthma is the most prevalent pediatric chronic health condition, affecting nine percent of school age children. It is the primary reason for children being absent from school due to a health condition (Wang, Vernon-Smiley, Gilinsky, Desist, Maughan & Sheetz, 2014). Even when a child is at school, asthma, unless well controlled, can affect the child's ability to pay attention, his/her energy and stamina. However, "with proper care, people who have asthma can stay active, sleep through the night, and avoid having their lives disrupted by asthma attacks" (US Department of Health and Human Services [US DHHS], 2011, p. 1). In fact, people who have asthma should have few symptoms, no limits on physical activities, no emergency clinic visits and no hospital stays.

Asthma Guidelines

In 2008, the National Asthma Education and Prevention Program (NAEPP) developed the *Guidelines for the Diagnosis and Management of Asthma* (Expert Panel Report – 3, United States Department of Health and Human Services [US DHHS], 2007) which shifted the focus of care for individuals with asthma from episodic care to use of daily controller medication and avoidance of allergens. The 2014 *Managing Asthma: A Guide for Schools* (United States Department of Health and Human Services [US DHHS], 2014) set these priorities:

> 1) Ensure quick and easy access to prescribed medications, including supporting students who carry and self-administer their asthma medication; 2) Maintain a school-wide plan for asthma emergencies; 3) Provide a healthy school environment and reduce asthma

triggers; 4) Enable full participation by students who have asthma; 5) Educate students,

staff, and parents and guardians about asthma; 6) Promote partnerships among school

staff, students, parents and guardians, health care providers, and the community (p. 7).

More recently, Schantz and Maughan (2015) collected the national guidelines, standards of

practice for school nursing, and research on teaching self-care strategies and school nursing

intervention models, assembling the *School Nurse Evidence-Based Clinical Guidelines: Asthma*

published by NASN.

This study aimed to assess the feasibility of using the Omaha System to describe and

document school nursing intervention and client outcomes. School nurses were asked to confirm

the accuracy and utility of the Omaha System schema applied to an IHP for a child with the

chronic health condition of asthma.

Research Question / PICO Question

Is it feasible to use the Omaha System to describe and document school nursing practice

given the format of the Individual Healthcare Plan for a child with asthma compared to current

electronic and paper student health records?

- Using the Omaha System schema, are children's health conditions and planned

nursing interventions accurately described?

- Using the Omaha System schema, can school nurses document nursing interventions

(delegated medical functions and independent nursing functions) and corresponding children's

health outcomes?

Literature Review

An on-line search of professional literature demonstrated the lack of attention to

application of the Omaha System to schools. Using the search terms Omaha System and school

nurs*, excluding the phrase 'school of nursing', CINHAL yielded no results; MEDLINE, two,

but one was not school-focused; and PUBMED listed seven articles, none which was focused on

school nursing but several on schools of nursing. The single relevant reference was written by

Bednarz (1998) and published in the *Journal of School Nursing*. The author explained that the

Omaha System was a vehicle to describe the components of the case management role of school

nurses. Bednarz was ahead of her time in both the use of a standardized nursing language and in

the school nurse role as care coordinators.

Social Justice Issues

Universal human rights addressed in this project include the protections and support for

children, rights and dignity of individuals with disabilities and the importance of education.

Federal law assures for children with disabilities have the civil right to access education

according to ADAA (US DoE OCR, 2015) and, given an education disability, to a be provided

FAPE (US DoE, n. d.; Lipkin et al., 2015). School nurses provide health care to children with

chronic health problems, improving children's health and their school attendance, averting drains

on the education budget as well as saving health care dollars (Engelke, Swanson & Guttu, 2014).

Use of a standard planning and documentation system may assist school nurses in improving

care for children by focusing on prevention, better organizing nursing practice and improving

accountability by measuring outcomes.

Design

This project was designed as a feasibility study. A feasibility study is conducted to

determine if a new idea or intervention is appropriate for further application, is relevant, needed,

or has potential for implementation and sustainability (Bowen, Kreuter, Spring, Cofta-Woerpel,

Linnan, Weiner, Bakken, . . . Fernandez, 2009). Questions addressed by such studies include:

"Can it work? Does it work? and Will it work?" (p.4). Bowen and colleagues outlined eight

feasibility study areas, two of which pertain to this study. To answer the question, "Can it

work?", examination of the Omaha System in schools addressed acceptability (how individuals

react) and demand (idea is likely to used), measured by perceived appropriateness, fit, perceived

demand, and perceived intent to use the intervention (Bownen et al., 2009, Table 1). Similar

feasibility studies have been conducted regarding use of the Omaha System in settings such as

public health (Westra, Oancea, Savik & Marek, 2010), occupational health (Kesgin & Kublay,

2014), well populations (Thompson, Monsen, Wanamaker, Augustyniak & Thompson, 2012),

personal self-care records (Sheehan & Lucero,2015) and others.

Three strategies were used for this feasibility study: The researcher, after investigation of

and training on the Omaha System, developed an IHP for a child with asthma. The IHP was

reviewed by Omaha System experts for accurate assignment of concepts and terms. And school

nurse leaders reviewed the IHP for face validity and utility. The study design was approved by

the Internal Review Board of St. Catherine University.

Development of Asthma IHP Using the Omaha System

The researcher reviewed the variables in the Omaha System for their relevance to school

nursing. Then, in developing the IHP, the researcher reviewed Asthma Action Plans, sample

IHPs (Selekman, 2013) and Omaha System pathways for asthma (Omaha System Community of

Practice, 2016). The sample Omaha System IHP attempted to include the majority of strategies

for working with children through age 18 in the school setting, incorporating national clinical

guidelines (US DHHS, 2014) and school nursing practice guidelines (NASN, 2015). Given the

full menu of the evidence-based practices in the sample Omaha System IHP, a school nurse

would select elements pertinent to a given child. In this way, the sample IHP provides support

for clinical decision-making, an important reason for using standardized health records

(McGonigle & Mastrian, 2012).

Review of IHP by Omaha System Experts

Three experts reviewed the sample Omaha System IHP for accuracy of and clarity in assigning the Omaha System concepts and terms. One was a national expert at a University setting who conducts research on applying the Omaha System in numerous settings. The second expert was a practicing school nurse, who, with the guidance of the Omaha System expert, applied the Omaha System to a care plan for a child with diabetes and to bullying prevention. The third had aligned the Omaha System to a wellness-oriented model, establishing the system for daily documentation in a wellness-based elder-care living system.

Assessment of Validity and Utility by Expert School Nurses

The third strategy in this feasibility study was to hold discussion sessions with school nurse leaders to judge face validity of the sample Omaha System IHP and analyze the utility of the Omaha System using a Strengths, Weaknesses, Opportunites and Threats (SWOT) analysis. Face validity is personal judgment of participants (Bownen et al., 2009, Table 1), in this case, whether the sample Omaha System IHP for asthma included terms and components of a standard IHP for a child with asthma. SWOT analysis was first used in the business sector to explore new efforts, determine if change is needed or possible and to organize and communicate ideas (Johnson & Guthrie, 2012; Minnesota Department of Health [MDH], 2014; Renault, 2015). SWOT analysis includes reviewing internal strengths and weakness and external opportunities and threats.

A convience sample of nine Licensed School Nurses was recuited from a network of lead RN/Licensed School Nurses in a Midwest metropolitan area. These coordinators and supervisors are in the best position to test and implement innovations in their school districts. They prioritize the goals and set program direction for school nursing staff in their respective large school districts, make changes in student health documentation systems and use data to summarize student needs, nursing interventions and student outcomes. In addition, a professional nurse

asthma clinical expert also attended the discussion sessions and offered valuable input to the

sample IHP.

At the first session, after consenting to be involved, participants completed two surveys:

participant demographics and components and utility of current health records. The researcher

then introduced the Omaha System and reviewed the sample Omaha System IHP. In between

sessions, participants were sent web-links for further explanation of the Omaha System and

asked to compare current IHPs to a revised and simplied sample Omaha System IHP. At the

second session four weeks later, participants offered suggestions to improve the sample IHP,

conducted a SWOT analysis and completed a second survey regarding whether standardized

nursing language was used in school and the extent to which standardized language, the Omaha

System, would be useful in developing IHPs and documenting nursing interventions.

Findings

Omaha System Relevance to School Nursing Practice

The researcher reviewed the variables in the Omaha System schema and consulted the

Omaha Systems experts to determine relevance of the terms and concepts to school. Here is a

summary by component:

Problem classification scheme. The problem statement includes these parts: a domain

and related health problem, population focus (individual, family or community) and acuity

(health promotion, actual or potential problem).

Domains. The four Omaha System schema domains are *Environmental, Psychosocial,*

Physiological and *Health Related Behaviors.* All are relevant to school nursing.

Health problems. Of the 42 problems across the four domains in the Omaha System, all

are relevant to pediatrics and non-acute settings. Within each domain, the Omaha System has an

'other' category which allows for problems to be added, making the system flexible. Each

problem has a list of signs and symptoms to ensure uniform application of the terms; and 'other'

is included to allow for an additional signs and symptoms, again providing adaptability of the

system to different settings.

In the *Environmental* domain, two health problem categories*, income* and *residence,*

pertain to the family and influence the child's situation, but are not the object of school nursing

interventions with a child. However, a critical role of school nursing, when addressing the

population levels of family or community, is working intra-professionally with other student

services personnel and with community resources, so these two problem categories would be

applicable when applying the Omaha System to community-level interventions. Poverty, racism

and lack of access to high quality acceptable care are roots of health disparities. These same

factors are at the core of education disparities (Akinbami et al., 2012).

The next health problem in the *Environmental* domain, s*anitation* does relate to the

school and home. For example, in school, the nurse consults with custodians and teachers to

reduce a child's exposure to allergens. A school nurse also works with the parent on sanitation in

the home, increasing a parent's knowledge of the need to reduce a child with asthma's exposure

to second hand smoke, pet dander, plant and pest allergens, and the like. Finally, the

Environmental domain health problem of *neighborhood and workplace safety* is the place to

clarify that *school* is the 'workplace' for children. Here is where a new problem could be added

to the schema – s*chool safety,* defined as the need to plan for and train staff to be responsive to a

child's urgent need for medication and emergency services.

In the other domains, *Psychosocial* (12 health problems), *Physiological* (18 health

problems) and *Health Related Behaviors* (8 health problems), all the *health problem statements*

pertain to children and youth. The *Psychosocial* domain is where the 'other' option would be

used to add the problem statements of *education achievement/ school success* and *school*

attendance. Figure 1 lists the four domains, associated problem statements and comments regarding additions pertinent to the education setting.

Figure 1. Omaha System Problem Classification Scheme

      Population and acuity. *Health problems* in the Omaha System are further defined by *population focus* (individual, family or community) and by *problem acuity* (health promotion, potential and actual). *Actual* problems are prioritized for one or more nursing interventions. *Potential problems* are usually included in the *Surveillance* category of nursing intervention, thereby continuing to be in the frame of mind of the nurse who anticipates future needs and prevention strategies. This study, via the sample IHP for a child with asthma, focused on the population level of the *individual* and the acuity level of an *actual* problem.

      For each of the problems named according to the *Problem Classification* Scheme, the nurse uses the *Problem Rating Scale*, described later, to measure *Knowledge, Behavior* and *Status* at the initial, interim and resolution phases of a problem.

      Intervention scheme. *Intervention* statements include three elements: one *intervention classification,* one of the 75 *targets or foci* of interventions, and a brief phrase that describes nursing care individualized to the child, called the *client-centered narrative phrase*.

      Intervention classifications. All four intervention classifications of the Omaha System apply to school nursing practice – *Treatments and procedures (T/P); teaching, guidance and counseling (TGC); case management/care coordination (CM);* and *surveillance (S).* This classification scheme is one of most useful tools of the Omaha System, and can assist a school nurse, whether or not the Omaha System is adopted, in organizing work and describing the often undocumented independent practice of nursing. For example, in Figure 2, Omaha System Nursing *Intervention Classifications* are listed followed by typical school nursing strategies for children and youth who have chronic or urgent health conditions.

Figure 2. Omaha System Nursing Interventions in a Sample School Nursing Care Plan

Targets. There are 75 *targets* or areas of focus. Any *target or focus* area may be selected

related to any *problem statement* and *intervention.* Each *target* is discrete and has a definition

(Martin, 2005). While in the Martin text, the *targets* are listed in alphabetical order, the

researcher found it useful to arrange the *targets* under five general topics: Broad Strategies;

Health Care, Treatments and Procedures; Client Skills/ Behaviors; Health/ Community

Providers; Parent/ Family. This organization could assist the novice Omaha System user to

become familiar with *targets*. Some *targets* would likely be used rarely by school nurses (end-of-

life care, respite care, and genetics, for example). (See Figure 3. Omaha System Targets).

Figure 3. Omaha System Targets

Client-centered narrative phrase. The final segment of the *Intervention Scheme* 'triplet'

is the *client-centered narrative phrase*. In developing the sample Omaha System IHP, the

researcher selected *problems, intervention* with a target, and then, for the *narrative phrase*,

chose a pertinent activity from the national clinical (US DHHS, 2014) and school nursing

practice guidelines (NASN, 2015) and Asthma Pathway examples (Omaha System Community

of Practice, 2016).

Problem rating scale for outcomes. All three outcomes measures apply to school

nursing practice: *Knowledge (K)* ("ability of the client to remember and interpret information"),

Behavior (B) ("observable responses, actions, or activities of the client fitting the occasion or

purpose") and *Status (S)* ("condition of the client in relation to objective and subjective defining

characteristics") (Omaha System Overview, 2016, p. Problem Rating Scale for Outcomes). Each

measure is scored 1(low) to 5 (high) at the beginning, mid-point and close of working on a given

health problem with a child. Recall that the KBS score is used for actual problems, not potential

problems or health promotion. Developing a rubric for scoring specific problems would ensure

consistent scoring by a school nurse over time and inter-rater reliability among colleagues.

The researcher reviewed the variables in the Omaha System schema and consulted the

Omaha Systems experts who answered three questions regarding relevance to school nursing:

1. Does the Omaha System relate to the needs of children and youth? Yes, the Omaha

System is not age-specific and the *health problems* and *targets* are relevant to children and

youth. Much of the research (Omaha System Partnership, 2016) has been conducted with adults

in various settings, or with parents as the primary client and including nursing interventions

regarding parenting skills and health care supervision. In the school nurse-client therapeutic

relationship, the child is the client, not the parent. The parent is consistently consulted when

children are in preschool and elementary grades, however, the child remains the focus. As the

child grows in middle and high school, the parent maintains a health supervision role, but youth

acquire problem solving and self-care skills and are increasingly independent. In addition, the

care descriptions, part of the Omaha System *intervention statement*, are individualized for each

client and should include language regarding gearing interventions to children's appropriate

developmental stages.

2. Does the Omaha system relate to well children and youth? Children, when in school,

even with chronic health conditions, are basically in stable health. Yes, the Omaha System can

be applied to situations along the illness-to-wellness continuum. The *health problem* descriptors

include, besides *actual problems*, *potential health problems* and *health promotion*. Researchers

have flipped the *problem statements* to positive, wellness statements, believing it is empowering

for clients (Monsen, Schlesner, Peters & Kreitzer, 2014).

3. The work of children in school is learning. Can education variables that are influenced

by a child's health –education achievement and school attendance – be added? Yes, the Omaha

System is flexible, allowing for additions to the *problem list* and *problem-related signs and symptoms*. The additions may be used for data collection and comparison within systems, such as within a school district, and across school districts, but the added terms are not in the standard language set so are not coded for use across systems.

Accuracy and Clarity

Upon review of the sample: Omaha System IHP for Asthma, the Omaha System experts called for the following revisions: 1) Problems, nursing interventions and targets were used appropriately but the client descriptions of interventions, although based on national guidelines, were repetitive, too lengthy and cumbersome; 2) A simple excel sheet with drop-down menus would increase the ease of use of the Omaha System, especially for novice users; 3) Distinguish between *nursing interventions* that are child-focused and strategies for collaboration with the parent; for example, education to reduce asthma triggers in the home; 4) Include language in the intervention care descriptions that reflect interactions with and expectations of children vary by age and development.

Face Validity

Nine school nursing leaders participated in an initial discussion and five in a follow-up discussion. Within this group of experts, a majority held graduate degrees (n= 8), had leadership roles in their school districts (n=8) and were from suburban school districts of 8-10,000 students (n=7). One led a district of 30,000 students and one was in a specialized education setting with 200 students with previous experience leading a district of 5,000 students. In addition, an asthma expert who consults with school nurses participated.

First discussion session. At the first discussion, the group was presented the scenario of the child with a health problem (Figure 4.). Given this scenario, the school nurse leaders readily identified the Omaha System *problems* of respiration, medication regime and health care

supervision. They identified Omaha System *targets* of signs/symptoms-physical, anatomy/physiology, medication coordination/ ordering, medication administration and continuity of care. They assigned the Omaha System nursing *interventions* of *Treatments and Procedures; Teaching, Guidance and Counseling;* and *Case Management/Care Coordination*. *Surveillance* was a more difficult concept to grasp. One school nurse leader eventually said, "I get it. We look ahead to watch for problems but we never write that down [in a plan]."

Figure 4. Scenario

Participants were presented the sample Omaha System IHP for a child with asthma. On the plan, each line contained a *problem statement (domain, problem)* and the related *nursing intervention* triplet *(intervention, target, individual care description)*. The participants said the plan looked awkward, complicated, and had too many lines of problems/interventions to consider. When it was explained that the sample includes all potential options according to national guidelines, and the school nurse selects those most pertinent to a child, participants still said the sample had too much information to cull through. Based on this feedback, a simpler version of the sample Omaha System IHP was sent to participants between discussion sessions with the reminder to review current school district versions of an IHP for a child with asthma.

Documentation of nursing practice was also discussed. In the Omaha System plan, in paper or an excel sheet format, an additional column would be added to the right of the *problem* and *intervention* columns for each encounter. In the new column to the right, the nurse checks and dates interventions provided at an encounter with the child, adds vital signs, observations and/or next steps or other pertinent data. Another column is added to the right for the next encounter. In this way, the care plan is used in 'real time' to prioritize interventions and document by problem addressed.

Second discussion session. At the second discussion session, participants remarked, "It is like a foreign language and I can't wrap my head around it." "I can't believe we can do IHPs without a nursing diagnosis – that the problem statement is enough." "School nurses do not like to use nursing diagnoses, especially when talking with parents. It's too cumbersome and artificial. I sometimes just make up a diagnosis that sounds better." 'We just do not document independent nursing functions." "We develop the IHP at the beginning of the school year. The paper form gets filed. We bring it out again at the end of the year to see how things have gone. It is not used as a 'live' plan."

At the second discussion session, participants reviewed the sample Omaha System IHP for a child with asthma, asked questions to clarify terminology, and suggested trimming the still too-long list of nursing intervention-target statements.

Utility

The survey of current health records showed all participants used electronic systems for portions of the health record. However, none consistently used the national standard language of ICD-10 codes for medical diagnoses (United States Department of Health and Human Services [US DHHS], 2016) or nursing diagnoses (NANDA, 2016). While they had standardized language for terms within their own school districts in the electronic files for health problems, office visits, health tasks and more, none used a nationally standardized language for any of these variables. Some school districts in the metropolitan area used the same vendor for electronic student records and school nurses had a user group to share ideas and agree on change-requests for the vendor. Districts, however, did not all use all the program elements and, because updates from the vendor need to be loaded at the district level, the program elements were not consistent over time from district to district. Participants reported they aggregate data among schools within large districts, summing the numbers of children with certain health problems

(asthma, diabetes, severe allergic reactions, and seizures), health office visits and medical procedures (medication administration, tube feedings). Districts did not formally compare findings even if they used the same vendor and had common definitions for teams (CAMPUS User Group meetings, February 9, 2016 and April 14, 2016). Study participants said school nurses added narrative notes regarding a teaching a child about asthma mediation administration or a child's current lack of understanding, but did not have a structure or system for the comments, so these interventions occurrences or content could not be summarized by school or district.

Only a couple the participants knew or could retrieve the number or percentage of children with chronic health conditions across schools within their districts. None knew how many children had IHPs, the emergency short plan (an ECP or EAP) or 504 plans. One participant reported that school nurses only developed IHPs for children receiving special education services and health related services, but only if the district billed Medicaid for the health related services provided for that child. The number of IHPs or EAPs in a school could be used to review workload and staffing but was not retrievable.

School health services offices experience a lot of 'traffic' – a volume of 40 – 80 children stopping in for scheduled services and unscheduled needs. Study participants asked when school nurses would be able to learn a new system. "It would take too much time to learn. And the frustration. . . I like my system where I click-click-click and I am done. I record the really important information, what I *have* to document (medication administration, concussion checks, and referrals to health clinics)."

Key findings of the survey completed by lead school nurses (n=9) regarding current IHPs are summarized below. The definitions used for the surveys in both the first and second discussions were:

- Individual Healthcare Plan (IHP): Nursing plan of care. The IHP may include or refer to an Emergency Action Plan (See this/ Do this) but is not only an EAP. The IHP may include or refer to a para/Personal Care Assistance (PCA) plan, but is not only a para plan of care.

- Chronic/urgent health conditions: Asthma, Seizure disorder, Diabetes, Severe Allergic Reactions

The school nurse leader participants reported the following information:

1. Most, but not all, school nurses within their school districts developed IHPs (average = 2.75; Scale: *Few =1, Some (~ 50%) = 2, Nearly all = 3*)

2. IHPs were developed for many, but not all, children with chronic health conditions (average = 2.25; Scale: *Few =1, Some (~ 50%) = 2, Nearly all = 3*). For children with an Individual Education Program (IEP) plan that included health related services, many, but not all, had IHPs (average 2.375; *same scale*). One district developed IHPs only for children with an IEP and for whom the district was billing Medicaid for health related services. One in four of the lead school nurses knew or could extrapolate from their data systems how many children in the district had IHPs or both an IEP and IHP.

3. IHPs continue to be developed in a narrative format on paper or in a computer Word program (3/4 of participants), although one-half of participants had some portion of the IHP in electronic formats.

4. Comments included that IHPs help focus on the big picture, not just what is needed on a given day. IHPs are used to communicate children's needs but were, at times, developed in isolation – without parent participation.

At the second session, the participants took another survey on the capabilities of electronic records using standardized language and the degree to which the summary data would be useful to school nurse leaders. Key findings of the survey were:

1. It would be useful, to a high degree, to be able to generate summary data on the medical diagnoses and nursing problems of the children in schools and also all the nursing interventions. School nurse leaders had high interest in data on each of these:

Delegated medical functions

Teaching/Guidance/Counseling: teach self-care skills

Teaching/Guidance/Counseling: counsel - stress, coping

Care Coordination: health care provider/ clinic for *accurate care*

Care Coordination: parent for *consistent care*

Care Coordination: teach staff to ensure *safety at school*

Surveillance/Monitoring: school maintains safe environment for child

2. Participants saw less value in the utility of summary data on health or education outcomes, reporting the information would be useful 'to some degree, 'to a high degree' or 'do not know''. Determining and documenting outcomes is not currently a common practice.

3. Participants saw using the intervention categories (named above) useful to some degree in organizing IHPs.

4. Participants saw little utility in having an IHP aligned to national guidelines.

5. Participants thought it would be very valuable to have data terms that were equivalent to other health care systems so that nursing care of children could be compared across settings.

Finally, the group participated in a SWOT analysis. As illustrated in Figure 5, the findings confirmed previous statements of the participants: *Strengths* – The Omaha Systems is a system, compared to the minimal structure to planning and recording in current record systems.

It provides a comprehensive view of the child and family needs, a perspective considered at the core of school nursing practice. *Opportunities* listed were innovation, standardized planning and documentation that had the potential to improve professional practice and no cost for the Omaha System, itself. However, *costs* included integrating the system into current computer record keeping systems, plus staff time and extra effort when little of either is available. Major *threats* are that the education system needs to learn to value health data. Hundreds of independent school systems would need to buy in for any consistency in nursing practice and use of data.

Figure 5. SWOT Analysis

Discussion

Current IHPs do not sufficiently articulate independent nursing interventions. The Omaha System offers a structure for planning and documenting delegated medical functions and independent nursing functions. This structure could help nurses describe the breadth of their services as well as ensure that the school nurses consider the range of interventions important to ensure a child remains healthy and safe at school.

One purpose of using the Omaha System is for school nurses is to use standardized nursing language for planning health care for children and documenting nursing interventions and outcomes. Yet, developing IHPs is still not a routine practice of every school nurse. A question is whether, if school nurses found Omaha System IHPs expedient in planning and documentation, would developing IHPs become more a more consistent par of school nursing practice?

Finally, documenting nursing practice and client status is based on the problems and intervention in the plan using the Omaha System. The plan, in full view, drives nursing interventions vs. recall of the plan that is filed in the drawer, only to be reviewed at the end of the school.

While the basic framework of the Omaha System is straightforward and logical, participants were concerned about the amount of time required for school nurses to understand and develop skills in using the Omaha System. Schools want education outcomes in addition to health outcomes so changes would need to be made and vetted by a wide circle of school nurse users of the system.

Implications

Potential impact of the Omaha System for school nursing practice is not yet realized including:

1. Knowledge of a strategy to demonstrate school nursing's contribution to the health and education of students;

2. A standard model for IHPs that includes delegated medical functions and independent nursing functions.

3. IHPs based on national clinical guidelines, aiding decision making when planning for individual children.

3. The standard model for IHPs, based on the Omaha System's four nursing interventions, following the principles of care coordination, an under-recognized role of school nurses;

4. Use of a standard format for IHPs that is efficient and could reduce planning/writing time and increase productivity;

5. A focus on outcomes that would shift nursing interventions from response to children's symptoms to prevention;

6. Having the capacity to assess and compare the types and range of health needs of children at school; and

7. Having a system that meets the requirements for electronic standardized interoperable health records should schools, in the future, be required to comply with the federal directives, especially since schools bill Medicaid for health-related services for children with disabilities.

Next steps to be considered for research regarding application of the Omaha System to school nursing practice include:

1. Develop consensus among potential school nurse users on additions to the Omaha System Problem list such as attendance as a problem statement.

2. Establish a rubric for measuring Knowledge, Behavior and Status outcomes. Consider rubrics by age/developmental levels: Primary (through grade 3); Intermediate (through grade 6) and high school.

3. In applying national standards, come to consensus among potential school nurse users on school nursing care descriptions, the third part of the nursing intervention triplet.

4. Examine the wellness model of the Omaha System for fit for school nursing because school children are a well population.

5. Application of the Omaha System IHP to a computerized record: First a simple excel sheet, then integrated into an existing school health record system, then a computer program used in other settings such as county public health agencies.

6. The sample Omaha System IHP needs to be formatted according to the standards set for Children's Electronic Health Record (EHR) (Dufendach et al., 2015).

7. Development of an IHP for other chronic and urgent health conditions of children and youth such as diabetes, severe allergic reactions and seizure disorders.

8. Pilot use of the Omaha System in an electronic record system in a small number of schools in small school systems that have nimble data systems and where the school nurses are technologically savvy.

Limitations

This initial feasibility study has a number of limitations:

1. The small, convenience sample of participants introduced bias in findings. Even as feasibility study, replication with a different and wider group of lead school nurses is important to affirm the findings.

2. A feasibility study is the first step in understanding a new process or system. It begs piloting implementation of the Omaha System.

3. Participants had little to no previous knowledge of the Omaha System. Learning a new language and coding system takes time. This constrained the participants' understanding of the Omaha System's potential for school nursing practice. Nurses well adept at using the Omaha System, such as county public health nurses serving rural and small schools, should test the application.

4. The researcher was not practicing school nursing in a school setting, did not document daily interventions of multiple student visitors to health services, and may not have appreciated the need for simplicity in a documentation system.

5. Schools are reluctant to see themselves as health care providers, hence may not be ready to adhere to the national and state directives regarding electronic, standardized, interoperable, meaningful health record systems that have the potential to provide aggregate data helpful in changing health care delivery.

Conclusion

The findings of this pilot study provide a preliminary view of school health records as lacking the structure and standardized language to summarize nursing interventions, children's health status and changes in children's health and education. The Omaha System offers structure, facilitates the nursing planning and evaluation process and has the potential to measure outcomes

of school nursing practice. The Omaha System IHP can assist school nurses in organizing

services provided to children who have chronic conditions by including nurses' independent

practice strategies in care plans, documenting interventions, associating child health and

education with outcomes with school nurse services, and facilitating care coordination by school

nurses. While the Omaha System appears to be useful to school nurse leaders, they are concerned

about implementation barriers – the investment required of school nurses who have limited time,

adaptation of education data systems to incorporate the Omaha System, and lack of appreciation

of the potential trove of data that could inform better health care and better education outcomes

for children.

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Omaha System Problem Classification: Domains and Health Problems	
Domains and Definitions	**Health Problems and Comments**
Environmental: Material resources and physical surroundings both inside and outside the living area, neighborhood, and broader community	**4 HEALTH PROBLEMS** - ***Income*** and ***residence*** pertain to the family and influence the child's situation, not the object of school nursing interventions. These pertain to community-level interventions. - ***Sanitation*** relates to the school and home environment. - ***Neighborhood and Workplace Safety*** needs to be clarified, defining *school* as the 'workplace' for children. Add signs for *responsive school staff*.
Psychosocial: Patterns of behavior, emotion, communication, relationships, and development	**12 HEALTH PROBLEMS** - ***Caretaking/ parenting*** focuses on the pregnancy-infant-newborn phases and would apply to teen parents - All other health problems could apply to children /youth - Add a problem/condition variable such as ***Education achievement*** or ***School success*** - Add a problem/condition variable – ***School attendance***

	− ***Communication with community resources*** − ***Social contact*** − ***Role change*** − ***Interpersonal relationship*** − ***Spirituality*** − ***Grief*** − ***Mental health***	− ***Sexuality*** − ***Caretaking/ parenting*** − ***Neglect*** − ***Abuse*** − ***Growth and development*** - Add ***Education achievement/ school success*** - Add ***School Attendance***

Physiological: Functions and processes that maintain life	**18 HEALTH PROBLEMS:** All pertain to schools.		
	− ***Hearing*** − ***Vision*** − ***Speech/language*** − ***Cognition*** − ***Pain*** − ***Consciousness*** − ***Skin***	− ***Neuro-musculo-skeletal function*** − ***Respiration*** − ***Circulation*** − ***Digestion-hydration*** − ***Oral health*** − ***Bowel function***	− ***Urinary function*** − ***Reproductive function*** − ***Pregnancy*** − ***Postpartum*** − ***Communicable/ infectious condition***

Health Related Behaviors: Patterns of activity that maintain or promote wellness, promote recovery, and decrease the risk of disease	**8 HEALTH PROBLEMS:** All pertain to schools.	
	− ***Nutrition*** − ***Sleep and rest patterns*** − ***Physical activity*** − ***Personal care***	− ***Substance use*** − ***Family planning*** − ***Health care supervision*** − ***Medication regime***

*Figure 1.*Omaha System Problem Classification Scheme: Domains and Health Problems. From Problem Classification Scheme, Omaha System Overview, 2016

Note: Each Health Problem has defining signs and symptoms that ensure standard use of the terms.

Care Plan sample: Omaha System Interventions with strategies
1) Treatments and Procedures Medication and Treatment management: Current detailed medical orders Delegate, supervise, train and evaluate staff who administers medications and treatments Prepare for and provide routine and episodic treatments
2) Teaching, Guidance and Counseling: The child will . . . Understand the health condition, triggers, prevention Know medication action, dose, administration, effects, side effects, access/storage Develop developmentally appropriate self-care capacity and skills Be provided support for coping and developing resiliency skills Develop communication, friendship and advocacy skills

3) Coordination - Health Care Provider (HCP): Accurate care
  Coordination - Parent: Consistent care
  Coordination - School Staff: Safety at school. Selected staff will . . .
Understand child's health condition; triggers; prevention
Know emergency procedures: Emergency Action/Care Plan (EAP / ECP)
Be comfortable with and able to respond to emergencies
Safe environment - remove allergens, barriers to mobility

4) Surveillance /Monitor/Anticipate . . . Child's health status and self-care behaviors Safety procedures at school: Check quarterly Safe environment - be alert to discrimination or bullying Child's well-being - depression, anxiety Changes in schedule, activities, growth and development, mobility Stressors in child's life that impact health conditions and educational participation

*Figure 2.*Omaha System Nursing Interventions in a Sample School Nursing Care Plan. From Luehr, Hudlow and Haugen, 2016.

Omaha System Intervention Targets or Foci by Type of Service				
BROAD STRATEGIES	HEALTH CARE, TREATMENTS, PROCEDURES	CLIENT SKILLS/ BEHAVIORS	HEALTH/ COMMUNITY PROVIDERS	PARENT/ FAMILY
continuity of care	medication coordination/ ordering	anger management	medical/dental care	bonding/ attachment
education	medication administration	behavior modification	medication prescription	caretaking/ parenting skills
employment	medication action/ side effects	communication	nursing care	discipline
environment	screening procedures	coping skills	interpreter/ translator services	family planning care
anatomy/ physiology	infection precautions	dietary management	nutritionist care	finances
signs/symptoms - mental/ emotional	sickness/ injury care	exercises	occupational therapy care	growth/ development care
signs/symptoms – physical	cardiac care	interaction	physical therapy care	home
safety	respiratory care	personal hygiene	speech/ language pathology care	homemaking/ housekeeping
support system	skin care	relaxation/ breathing techniques	social work/ counseling care	stimulation/ nurturance
transportation	feeding procedures	rest/sleep	paraprofessional/ aide care	
wellness	ostomy care	stress management	other community resources	
	bladder care	substance use cessation	community outreach worker services	
	bowel care		end-of-life care	
	cast care		laboratory findings	
	dressing change/ wound care		family planning care	
	gait training		genetics	
	mobility/ transfers		day care/ respite	
	positioning		legal system	
	durable medical equipment		recreational therapy care	
	supplies		spiritual care	

Figure 3. Omaha System Targets (Focus of Service). Targets arranged by types of services. Targets from Intervention Scheme, Omaha System Overview, 2016.

Scenario:

A 10 year old boy with asthma was a frequent visitor to the school health services office. He knew he was supposed to carry his inhaler but did not know where it was and had not had it for a while. Today, he presented with the complaint of a tight feeling in his chest and generally feeling bad. Health Services had obtained a medical order and the parent has provided an inhaler for the child that was kept in the health services office.

What are the child's presenting **health problems** according to the Omaha System?

What **Problem Rating Scale score** would you assign to his knowledge, behavior and health status?

What **nursing interventions** (using Omaha System language) would you provide today?

What additional nursing interventions would you consider including - direct service for him and collaboration with parent, health care provider and school staff?

Figure 4. Scenario

SWOT Analysis: Application of Omaha System to School Nursing Practice	
Strengths • A system • Ability to gather consistent data • Knowledge-Behavior-Status assessment is comparable, numeric • Includes whole person/ all domains of holistic nursing practice • Flexible • Ongoing use of the IHP. Now we only review it at the end of the year	**Weaknesses** • Does is give school nurses what they need? Not sure OS it describes school nursing practice • New, unfamiliar, many terms • Arbitrary • See 70-80 students per day – too many clicks to get to the right problem list
Opportunities • A consistent approach to managing children's health conditions • Innovative • Gain funding by demonstrating outcomes • Compare outcomes from different settings - rural/urban • Reasonable cost	**Threats** • Need buy in to all be on the same page • A lot would have go into implementing the OS in our "independent" school districts

Figure 5. SWOT analysis. Adapted from Minnesota Department of Health (MDH) Quality Improvement (QI) (2014). *Toolbox: SWOT Analysis.* Retrieved from http://www.health.state.mn.us/qi/