

**Electronic Health Record Remodeling:
Gundersen Health System's Nursing Journey**

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2019 Summer Institute in Nursing Informatics
Healthcare Informatics: A Catalyst for Value-Driven Care Transitions




**GUNDERSEN
HEALTH SYSTEM.**

AGENDA


- Introduce nursing informatics at Gundersen Health
- Outline phased approach to a pain assessment project
- Describe the execution of an acute admission redesign
- Summarize a care plan upgrade and practice reset
- Review usability assessments and lean principles used
- Discuss potential for related strategies in other organizations



6 HOSPITALS, 66+ CLINICS	21 COUNTIES	~1900 NURSES
325+ BED LEVEL 2	15,000+ ADMISSIONS	~950 MEDICAL STAFF
1 COMMUNITY CONNECT	1, 120, 492+ OUTPATIENT VISITS	~8,560 EMPLOYEES


Hospital


Medical Clinics


Eye Clinics


Inpatient Facility


Nursing Homes


Sports Medicine & Orthopedic Clinic


Renal Dialysis Centers


Pharmacy and Medical Supplies


Express Care


Urgent Care


Emergency Services

**GUNDERSEN
HEALTH SYSTEM.**
Where Caring Meets Excellence

THE CALL

- Future of Nursing: Leading Change, Advancing Health
- User-centered design - opportunity to intervene
- The Federal Health IT Strategic Plan: 2015-2020
- AMIA EHR Task Force 2020

IMPACTING FACTORS

Factors impacting nursing documentation and EHR use

Individual	Interpersonal	Organizational
<ul style="list-style-type: none"> nurses' perceptions (impacted by education level, age, and time spent documenting) continued informal use of paper experience with technology 	<ul style="list-style-type: none"> teamwork and team communication privacy concerns distraction patient type shift involved 	<ul style="list-style-type: none"> location of computers reliability of computers software design documentation requirements reimbursement

RESPONSIVENESS – PAIN

LAUNCHING C4

PAIN STANDARDS

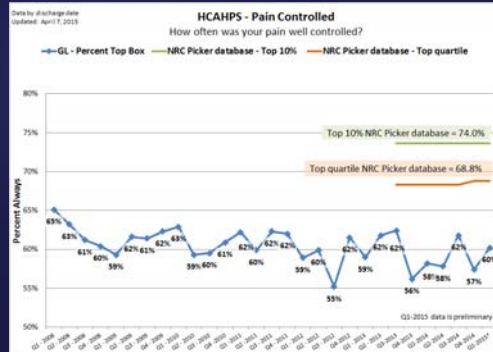


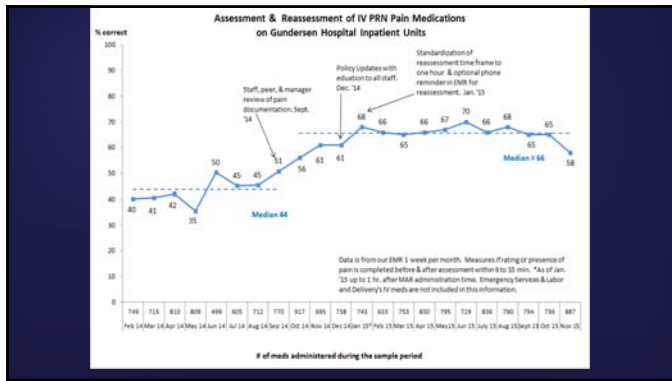
Organizational Policies & Standard Operating Procedures



C4 Council Membership

Patient Members				Staff Members			

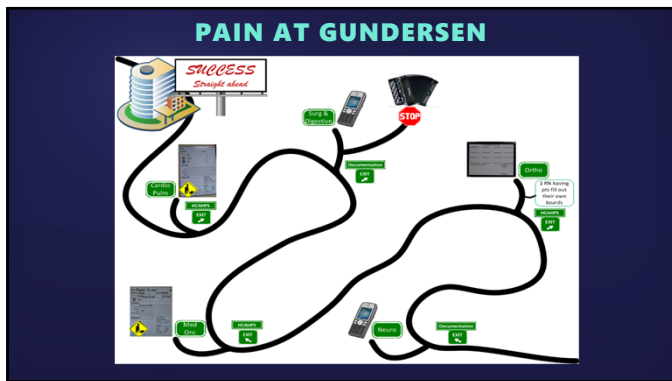
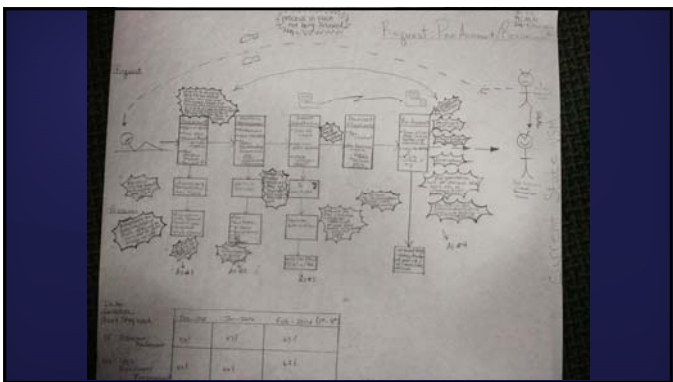
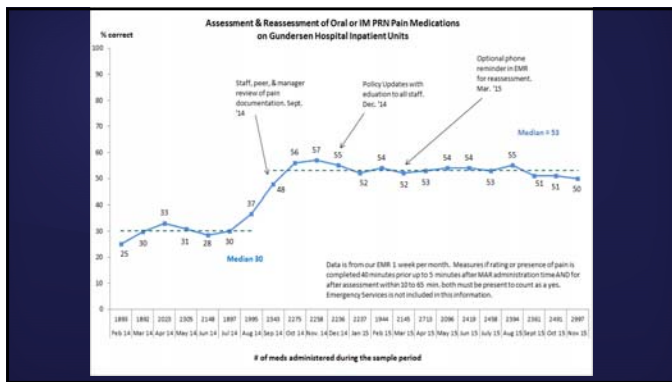




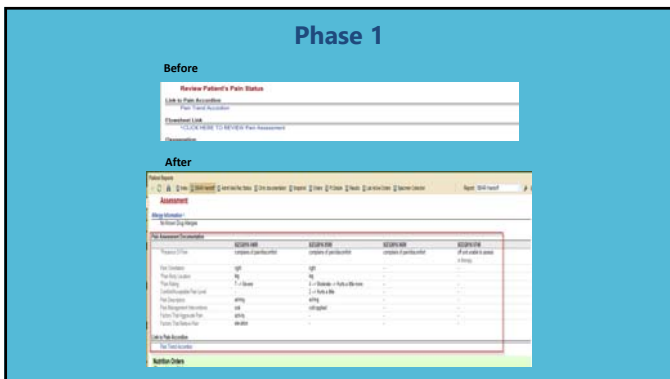
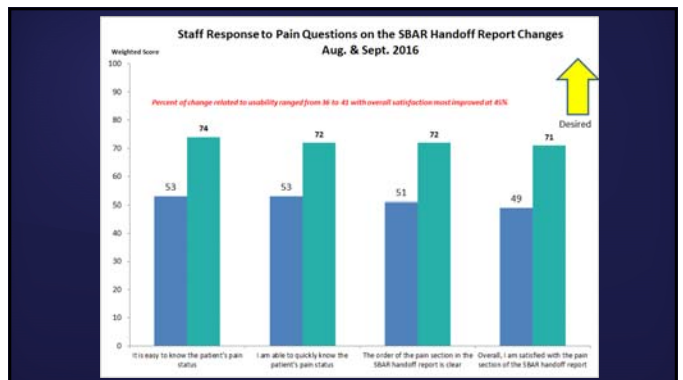
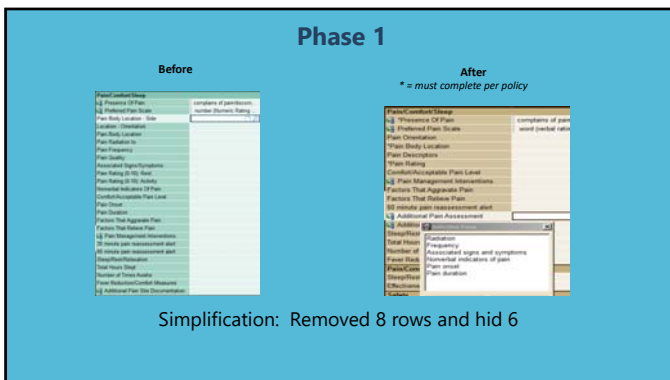
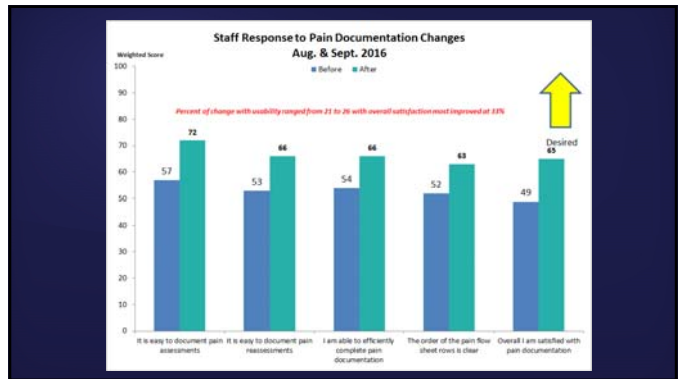
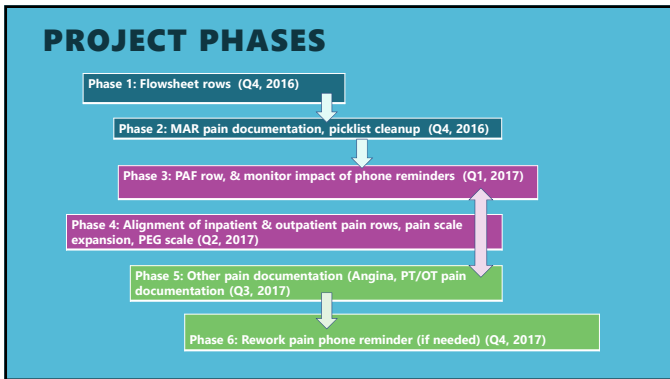
...MAKE IT USEFUL

- Utility = it provides the features you need
- Usability = features are easy & pleasant to use

Useful = usability + utility

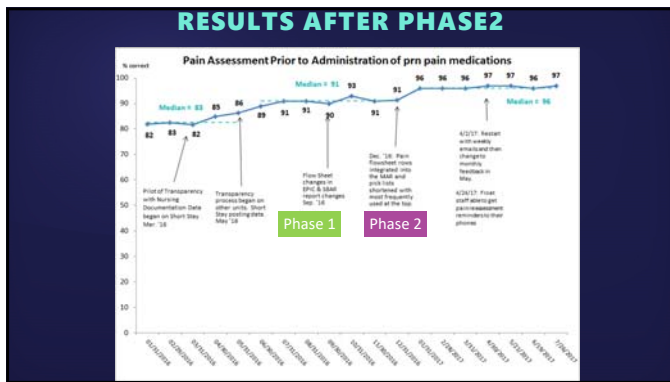
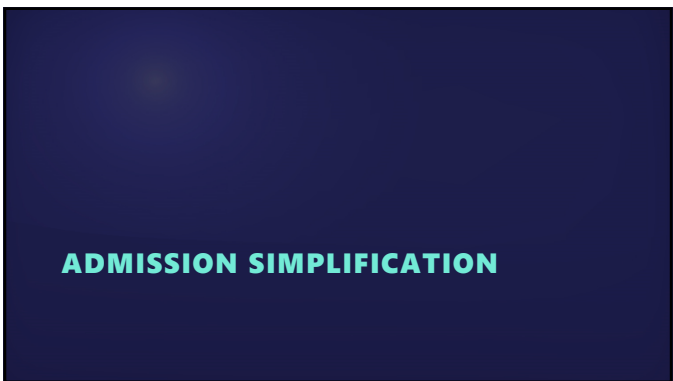
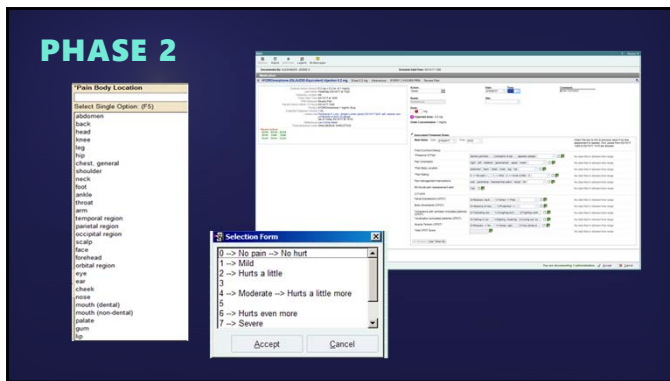


Step	When	Who	Status
1	1:15	1:15	1:15
2	1:15	1:15	1:15
3	1:15	1:15	1:15



ESTIMATED TIME SAVINGS

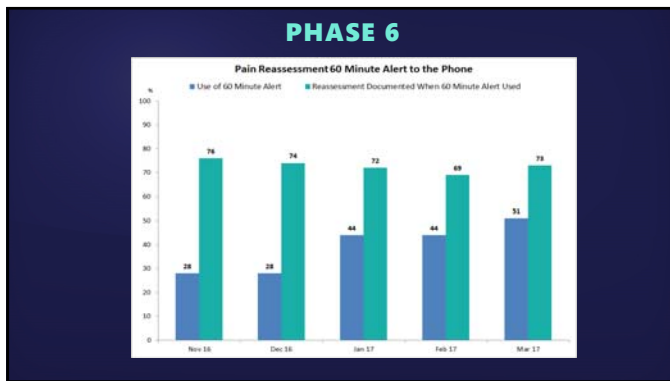
- In the fall of 2017 we administered about 3200 as needed pain medications per week
- Nurses estimate the simplifications decreased documentation time by:
 - Initial assessment: 10 to 20 seconds
 - Reassessment: 5 to 15 seconds
- 693 to 1617 hours per year of nurse's time
- Resulting in cost savings of \$43,290 to \$72,765 per year



ADMISSION SIMPLIFICATION

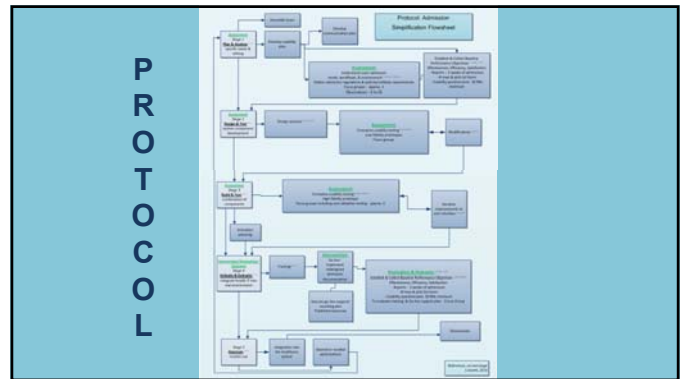
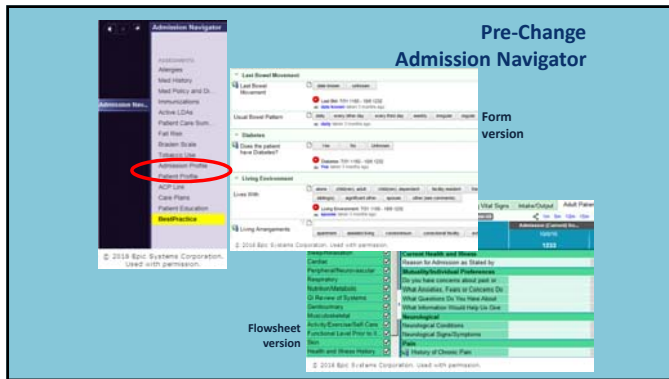
Demonstrate how usability assessments, LEAN and interdisciplinary/patient collaboration drove the renovation of subjective admission assessments and documentation for nursing

Project Objectives:
 Confirm necessary subjective assessments
 Conduct usability assessments
 Implement redesigned functionality
 Evaluate effectiveness, efficiency, and satisfaction



“WHAT’S YOUR WHY?”

- “Just being more present can prevent issues on our unit. Short, frequent contacts are important and reduced time spent with one patient on an admission, allows for more contacts with other patients.”
- “I will have more time to build relationships with my patients and their families, more time to educate patients about why they are here, or answer questions about uncertainties they have about their diagnosis or medications.”



SIMPLIFICATION

The term **simplification** was a key descriptor of the project's intent.

- Clinicians should be thinking about what they are doing, which is providing patient care.
- Leading with simplification seemed to facilitate emotional connections, positive energy, and commitment among many staff and departments.

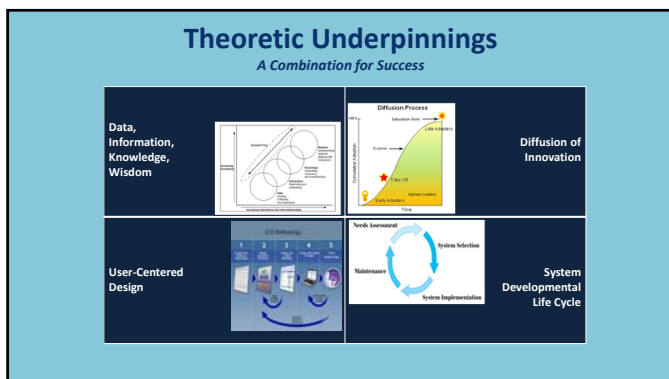
METHODOLOGY

Evidence-based quality improvement

- Data, Information, Knowledge, Wisdom
- User-centered design
- System Developmental Life Cycle
- Diffusion of Innovation

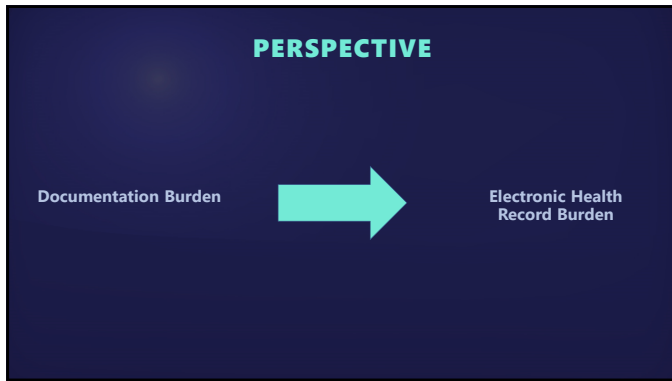
Data sources

- Admission documentation data
- Observations
- Value stream mapping
- Focus groups (staff/pts)
- Health Information Technology Usability Evaluation Scale
20 items, Cronbach alpha = 0.85-0.92



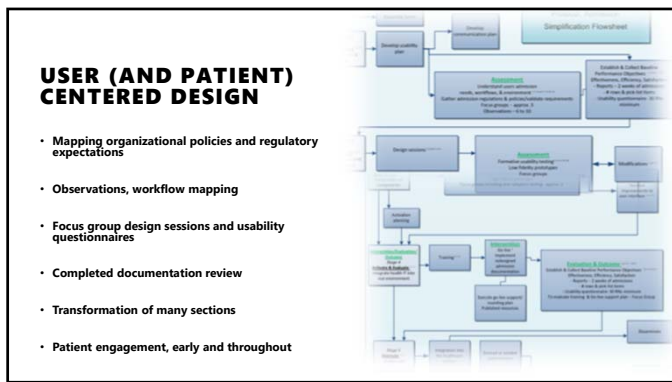
SCOPE BY PHASE

Phase 1	Phase 2
9/2016-3/2017 <ul style="list-style-type: none"> • Adult focused inpatient units • Inpatient Rehabilitation • Critical Access Hospitals • Community Connect • Subjective versus objective • Organizational alignment <ul style="list-style-type: none"> Population Medicine – Social and Behavioral Determinants of Health & Longitudinal Plan of Care Inpatient – Outpatient documentation 	3/2017-10/2018 <ul style="list-style-type: none"> • Phase 1 optimizations • Pediatric focused inpatient units • Pediatric age in EPIC from <14 to <18 • Procedural departments • Continued organizational alignment <ul style="list-style-type: none"> Ongoing from Phase 1 and Care Plan Update/Upgrade



DOCUMENTATION ANALYSIS

Task ID	Task Name	Task Type	Task Category	Task Priority	Task Status	Task Owner	Task Start Date	Task End Date
1	Review and analyze current documentation burden	Analysis	Documentation	High	Complete	J. Smith	2018-01-15	2018-02-15
2	Identify areas for simplification	Analysis	Documentation	High	In Progress	J. Smith	2018-02-15	2018-03-15
3	Develop simplification framework	Design	Documentation	High	In Progress	J. Smith	2018-03-15	2018-04-15
4	Implement simplification framework	Implementation	Documentation	High	Not Started	J. Smith	2018-04-15	2018-05-15
5	Evaluate simplification framework	Evaluation	Documentation	High	Not Started	J. Smith	2018-05-15	2018-06-15



PATIENT CENTERED DESIGN

- Patient focus groups
- Literacy level script consultation to ensure comprehension
- Dress rehearsal



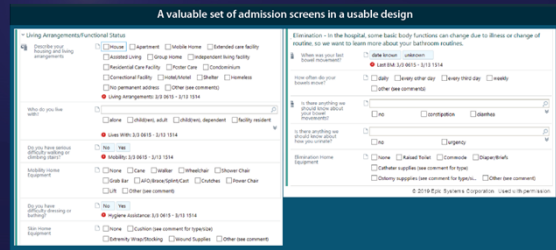

STAFF SATISFACTION (YEN & BAKKEN, 2012)

Question	Content	Interpretation
1. I think the admission register has been positive for nursing.	System impact - career mission	User feedback
2. I think the admission register has been positive for the organization.	System impact - organizational level	
3. The admission register is an important part of the admission profile.	System impact - personal level	
4. Using admission profile makes it easier to gather necessary patient information.	Productiveness	
5. Using the admission profile enables me to gather necessary patient information more quickly.	Productiveness	
6. Using the admission profile makes it more likely that I will gather necessary patient information.	Productiveness	
7. The admission profile is useful for gathering necessary patient information.	General satisfaction	
8. I think the admission profile present a more suitable process for gathering necessary patient information.	General satisfaction	
9. I am satisfied with the admission profile for gathering necessary patient information.	General satisfaction	
10. I gather necessary patient information in a timely manner with the admission profile.	Performance speed	
11. Using the admission profile increases my productivity in gathering patient information.	Productiveness	User opinion
12. I am able to gather necessary patient information whenever I use the admission profile.	Information needs	
13. I am comfortable with my ability to use the admission profile.	Complexity	
14. Learning to operate the admission profile was easy for me.	Learnability	
15. I was able to use the admission profile without any help.	Complexity	
16. I find the admission profile easy to use.	Ease of use	
17. I can rely on the admission profile to give me the information I need.	Reliability	
18. The admission profile gives me an impression that clearly tell me how to try problems.	Error prevention	
19. Information I make a mistake using the admission profile, I recover easily and quickly.	Error prevention	
20. The information (such as on-screen messages) provided with the admission profile is clear.	Information needs	

IT ISN'T JUST ABOUT REMOVING ROWS!

- Eliminated redundancy & non-value added rows respiratory, diabetes, skin, mobility/daily living, discharge destination, care team, spiritual care, chronic pain, homicide, tuberculosis
- While elimination of nonessential rows was a goal, the main goal was to implement a *valuable* set of admission screens in a usable design
Added sleep, voiding concerns, equipment needs
- Determined appropriate timing of scripted screens
- Medical level of care driven

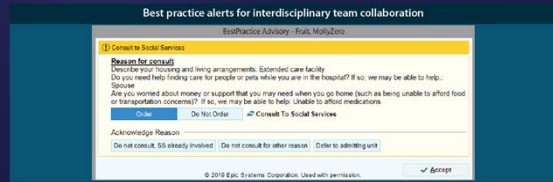
OUTCOMES



WHAT WAS MISSING?

- New activities placed in patient-centered and nursing workflow aligned sequence
- Designed *About Me* reports & updated *SBAR Handoff*
- Required Documentation decision support updates
- Developed 'Unable' functionality
- Created or updated various interdisciplinary decision support tools

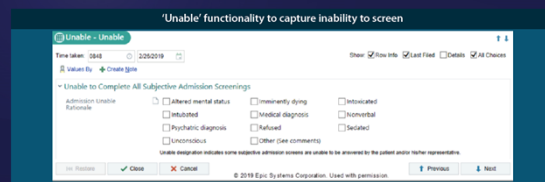
OUTCOMES



CLARITY

Pre	Post
Street drug/Medication/ Inhalant Use	Do you use prescription drugs not prescribed for you or street or recreational drugs (such as narcotics, marijuana, meth, or heroin)?
Provides primary care for	Are there people or animals that need care while you are in the hospital? If so, we may be able to help.
History of Chronic Pain	Has pain in any part of your body lasted for more than 6 months (chronic)?
Financial Concerns	Are you worried about money or support that you may need when you go home (such as being unable to afford food or transportation concerns)? If so, we may be able to help.

OUTCOMES



OUTCOMES

About Me reports for continued data use

About Me	
Marital Status Married	
Privacy Privacy Concerns: No	
Personalized Care Personalized Care: Seen in hospital every 3-4 times per year. Referred and assessed about it.	
Vision Problems Vision Problems: Y	
Preferred Language Preferred Language: Spanish	
Interpreter Needed? Interpreter Needed?: Yes	
Learning Needs Does the admission navigator have any barriers to learning? Reading, Language: Will there be a follow-up? Yes	
Living Arrangements Living Arrangements: Apartment Who do you live with: spouse	Alcohol Use Number of alcohol drinks 1 per day when drinking: No
Nutrition Concerns Nutrition Concerns: Had difficulty chewing or swallowing	Pre-Admit Home Equipment HEENT Equipment: Glasses Cardiac Equipment: Pacer Respiratory Equipment: BP/SpO2 Mobility/Transfer/Mobility Equipment: Shower Chair Skin Equipment: Wound Supplies
C-ESRS Washed you were read or didn't make up: no Thoughts of killing yourself: no Affect or preparations to hurt self: yes	Money & Social Concerns Money & Social Concerns: Unable to afford medications, housing concerns

ADULT - COMPLETED DOCUMENTATION

Post Phase 2 Changes (July 17, 2018)
* Includes: Inpatient Admissions & Observation Pt status

Month-Year	Total Adult Admissions - La Crosse *	# of Rows to be Completed	Low (%)	High (%)	Median % of time question was answered
Aug-18	1679	33	77%	91%	86%
Sep-18	1418	33	79%	96%	93%
Oct-18	1491	33	82%	94%	92%
Nov-18	1376	33	85%	94%	91%
Dec-18	1382	33	87%	94%	92%
Jan-19	1442	33	86%	95%	92%
Feb-19	1271	33	86%	95%	93%

Effectiveness

- Enhanced use of nursing data
- Completed documentation range % indicates decreased practice variation

	July 2016	April 2017	June 2018	August 2018
Range % of completed documentation	71% - 97%	70-85%	65-87%	77-91%
Median % of questions answered	86%	83%	86%	86%
Total Number of Adult Admissions (La Crosse)	1589	973	1619	1679

Efficiency

- Fewer screenings = less documentation

	February 2017	August 2018
Initial Question Count	45	30
Complete Question Count	92	76

- Initial admission attempt*
 - Pre: 37 minutes (median); Post: 33 minutes (median)
- 14,400 adult admissions/year*
 - about 2.6 hours per day/365 days/year of nursing time for other necessary work
 - = estimated annual savings of about \$45,000

*These 1 data only, savings higher facilities & C&I included

Satisfaction

Admission Health Information Technology Usability Evaluation-Adult

Question	Construct	Pre-Phase 1	Post-Phase 1	Post-Phase 2
1. I think the Admission Navigator has been positive to hearing.	System Impact - personal level	86%	77%	91%
7. I am satisfied with the Admission Navigator for gathering necessary patient information.	General Usefulness	57%	57%	82%
16. I gather necessary patient information in a timely manner with the Admission Navigator.	Performance speed	74%	63%	86%
Total survey's taken		35	35	44

Nurse Comments

"Like that it's (Privacy, Hearing, Vision section) at the beginning."
 "The About Me helped to get a snapshot of the patient easier."

ADULT - HIGHEST % COMPLETED

Top Documentation

Admission Question	# Of Months it was highest % completed documentation (out of 7 months)
Did you bring any medicines with you?	6
Do you need help finding care for people or pets while you are in the hospital? if so, we may be able to help.	6
How can we support your spiritual or cultural needs?	6
Have you been eating poorly because of a reduced appetite?	5
When was your last bowel movement?	5

Highest % Ranged: 91% - 96% completed documentation

ADULT - SATISFACTION

Admission Profile Health Information Technology Usability Evaluation - Adult

Satisfaction				
Question	Construct	Pre-Phase 1	Post-Phase 1	Post-Phase 2
3. The Admission Navigator is an important part of the admission process.	System Impact - personal level	86%	89%	91%
7. The Admission Navigator is useful for gathering necessary patient information.	General Usefulness	71%	74%	86%
16. I find the Admission Navigator easy to use.	Ease of Use	69%	83%	84%
19. Whenever I make a mistake using the Admission Navigator, I recover easily and quickly.	Error Prevention	57%	62%	64%
Total survey's taken		35	35	44

ADULT - LOWEST % COMPLETED

Lowest Documentation

Admission Question	# Of Months it was lowest % completed documentation (out of 7 months)
1. In the past month, have you wished you were dead or wished you could go to sleep and not wake up?	7
2. In the past month, have you actually had any thoughts of killing yourself?	7
6. Have you ever done anything, started to do anything, or prepared to do anything to end your life?	7
Have you had a cough for more than 2 weeks?	7
Are you or have you been threatened or abused physically, emotionally, or sexually by anyone? (share appropriate examples: partner, spouse, neighbor, family member, coach, teacher, etc.)	6
Is there anything we should know about your bowel movements?	6

Lowest % Ranged: 77% - 87% completed documentation

'UNABLE' - ADULT PATIENTS

Unit	# of times Unable was utilized during 7 months (once per patient)	Pick List Value Selected	# of times each Pick List Value was selected (in 7 months)
Short Stay Unit	11	Other (See comments)	36
Critical Care	11	Altered mental status;Other (See comments)	11
Surgical Unit	8	Other (See comments);Altered mental status	2
Inpatient Behavioral Health	6	Altered mental status;Unconscious;Other (See comments)	2
Medical Specialty Unit	6	Nonverbal;Other (See comments)	2
Neuroscience Unit	5	Intubated;Other (See comments);Medical diagnosis	2
Medical and Oncology Unit	4	Other (See comments);Medical diagnosis	1
Cardio Pulmonary Unit	3	Altered mental status;Sedated;Other (See comments)	1
Hospital Floats	2	Altered mental status;Refused;Psychiatric diagnosis;Other (See comments)	1
Emergency Services	2	Refused;Other (See comments)	1
Surgery	1	Nonverbal;Altered mental status;Other (See comments)	1
Orthopedic Unit	1		1
Total Patient's Unable was utilized	60	Total number of Pick List Value's in 7 months	60

PEDIATRIC - LOWEST % COMPLETED

Lowest % Documentation	
Admission Question	# Of Months it was lowest % completed documentation (out of 7 months)
How do you get your medicines?	6
Are you worried about money or support that you may need when you go home (such as being unable to afford food or transportation concerns)? If so, we may be able to help.	3
Tell me about your normal sleep and rest routine.	3

Lowest % Ranged: 65% -80% completed documentation

PEDIATRIC - COMPLETED DOCUMENTATION

Post Phase 2 Changes (July 17, 2018)					
*Includes Inpatient Admissions & Observation RN status					
Month-Year	Total Pediatric Admissions - La Crosse *	# of Rows to be Completed	Low (%)	High (%)	Median % of time question was answered
Aug-18	139	23	65%	92%	85%
Sep-18	122	23	76%	93%	91%
Oct-18	117	23	71%	91%	85%
Nov-18	97	23	77%	93%	85%
Dec-18	98	23	80%	99%	93%
Jan-19	130	23	75%	95%	92%
Feb-19	132	23	77%	93%	89%

PEDIATRIC - SATISFACTION

Peds/PICU - Admission Usability Evaluation - Sept 2018					
Question #	Question	% Agree/Strongly Agree	% Neutral	% Strongly Disagree/Disagree	Total # Responses
1	Compared prior to July 17, it is now easier to document nursing admission screens in the Admission Navigator.	89	6	6	18
2	Compared prior to July 17, I am now able to more efficiently complete documentation of nursing admission screens in the Admission Navigator.	89	11	0	18
3	Compared prior to July 17, I am now more satisfied with the order of the nursing admission screens in the Admission Navigator.	89	6	6	18
4	Compared prior to July 17, the nursing admission screens in the Admission Navigator are now more useful in collecting necessary patient information.	83	11	6	18
5	Compared prior to July 17, overall I am now more satisfied with the nursing admission screens in the Admission Navigator.	89	11	0	18
Median Overall %		89	11	6	18

PEDIATRIC - HIGHEST % COMPLETED

Highest % Documentation	
Admission Question	# Of Months it was highest % completed documentation (out of 7 months)
Who do you live with?	5
Did you bring any medicines with you?	3
Are you blind or do you have serious difficulty seeing, even when wearing glasses?	2
Are you deaf or do you have serious difficulty in hearing?	2
What else would you like us to know that might help us to make you more comfortable?	2

Highest % Ranged: 91% -99% completed documentation

Empower ownership, creativity, and professional nursing development

Listen to the 'why not's'

Leverage partnerships - interdisciplinary and information systems teams

Test workflow and design throughout all stages

Create detailed measurement plans

Choose usability questionnaire carefully

Be open to change and timeline adjustments

ALWAYS LEARNING



PROJECT GOALS

- Aid in delivery of evidence-based care
- Support a care planning process that is efficient and meaningful
- Add value to the patient experience
- Maintain regulatory compliance

CPU VIDEO

- https://youtu.be/xxxxCJAH_1s

CUSTOMIZATION GUIDING PRINCIPLES

Level Steps in Customization

desired, scoring for benefit & impact consensus determines customization will by step workflow/process must match is Customization Style Guide for EHR des of the customization should be estab is submitted via a Service Request HIS staff will submit evidence an vendor prepares future cor Nursing.

Efficiency	Effectiveness	Satisfaction	Cost	Regulatory
Frequency	Completion of	Patients	Savings	Requirements
and #	Tasks/Steps	and/or Staff	Time	
impacts	desired		Saved	
	outcomes			
High	High	High	High	High

ELSEVIER CARE PLANNING

- v2014 to v2018 upgrade
 - Care Plan Content and Functionality
 - Patient Education
 - Flowsheets*
 - Discipline Summary to enhance interdisciplinary communication (replaces nurse care plan note)
 - New and updated LDAs*
 - LDA Avatar*
- Specialty collections implementation
 - Inpatient Rehab
 - Inpatient Behavioral Health

*impacts outpatient & procedural areas

CUSTOMIZATIONS GUIDING PRINCIPLES IN ACTION

BRINGING IT ALL TOGETHER

The screenshot displays a structured care plan with the following sections:

- A Individualized Care Needs:** Lists patient-specific needs such as 'Health Status', 'Risk for Falls', and 'Risk for Injury'.
- B Patient Specific Goal:** States the goal: 'Patient will have blood pressure under control prior to discharge'.
- C Expected Date of Discharge:** Shows the date as '06/23/2019'.
- D Discipline Summary:** Provides a summary of interventions from various disciplines including nursing, respiratory therapy, and physical therapy.
- E Care Plan Problems/Goals:** Lists ongoing and completed goals.
- F Education Title:** Shows the patient's education level as 'Full & complete'.

my Why:

Electronic health record projects are not simply for cutting rows, saving clicks, and shaving time. User-centered design facilitates the achievement of 'data to wisdom' and this work engages nurses as leaders, creates efficiencies and knowledge driven care, while delivering a simplified record.

Ultimately, nursing informatics projects have the potential to move nurses closer to practicing to their fullest scope and facilitate nursing's involvement in the big data effort.

QUESTIONS?

Shannon Hulett, DNP, RN, CNL shulett@gundersenhealth.org

CARE COORDINATION APPROVAL!

From: Knievald, Julie K
 Sent: Monday, June 03, 2019 4:00 PM
 To: Check, Dana L <DLCheck@gundersenhealth.org>
 Cc: Bruuggeman, Joan E <JEBruggem@gundersenhealth.org>
 Subject: Care planning

Hi Dana,

I wanted to touch base with you on the new inpatient nursing care plan. First of all I have a patient in CCU. I was off for a week and digging through her chart trying to figure out what led her to CCU, etc. Then I stumbled upon the care plan documentation and it told a perfect story! Wish I would have started there! We have a staff meeting on Wednesday and I wanted to share this with the rest of our staff. But I wanted to check and see if there is anything Care Coordination could/should be doing to enhance the care plan? We would be open to you coming to a future staff meeting to share any information that you feel would be beneficial. Thanks.

Julie Knievald, RN, BSN
 Care Coordination
 Gundersen Health System

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APRIL SHOWERS BRING MAY FLOWERS

POLICY ALIGNMENT: TO GUIDE "INPATIENT" SETTINGS WITH NURSING ASSESSMENT & REASSESSMENT ACTIVITIES PER TRACKED REGULATORY/POLICY REQUIREMENTS OR OTHER GHS DECISIONS TO PROMOTE NURSING BEST PRACTICES/ EVIDENCE BASED CARE.

The table below summarizes the tracked activities and their alignment with regulatory requirements:

Activity ID	Activity Name	Requirement	Compliance
Nop-6730	Nursing Assessment, Reassessment	Requirement 1	Compliant
DL-6135	Patient's Plan of Care	Requirement 2	Compliant
DL-6161	Patient Education Documentation	Requirement 3	Compliant

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