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SDOH Inpatient Screening Implementation Pilot Project

Presentation to PHERI Friday Seminar

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Disclosures and Conflicts of Interest

Text Bar

None

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Presentation Outline

- Background
- Overview of SDOH (Social Drivers of Health) Inpatient Screening Pilot Project Plan and Process
- Results
- Process Learning
- Recommendations for System Implementation
- Discussion of Next Steps and Opportunities

Background Social Drivers of Health (SDOH)

- Social drivers of health are recognized as key drivers of health and health outcomes.

- Addressing SDOH is a national priority and increasing acknowledged by health systems as priority as well.
  - Healthy People 2030

SDOH in the Inpatient Setting

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- There is significant variability in how individual SDOH needs are assessed, addressed and documented in EHR in the inpatient setting (Wang et al. 2021, Davis 2022)
  - THRIVE tool, PRAPARE tool, Measuring Health Equity Survey, WHO QOL survey
  - Variety of categories screened with the most common being food insecurity, housing, transportation, employment, social support, education, SES/income and functional status/disability.
- Among a Medicare Advantage population, HRSN (health related social needs) were correlated with care quality and utilization (Ryan et al. 2023)
- In a study examining association between SDOH and hospitalization among 55,000 community dwelling adults, reported hospitalized respondents reported high rates of SDOH burden in several domains compared to non-hospitalized individuals. (Wray et al. 2022)

SDOH in the Inpatient Setting

- Population level ADI (area deprivation index) has been associated with increased rates of urgent/emergent surgeries. (Schmidt et al 2023)

- Hospitalized patients with coded housing instability had increased hospitalization for mental, behavioral and neurodevelopmental disorders, longer stays, and increased costs. (Rallings 2022)

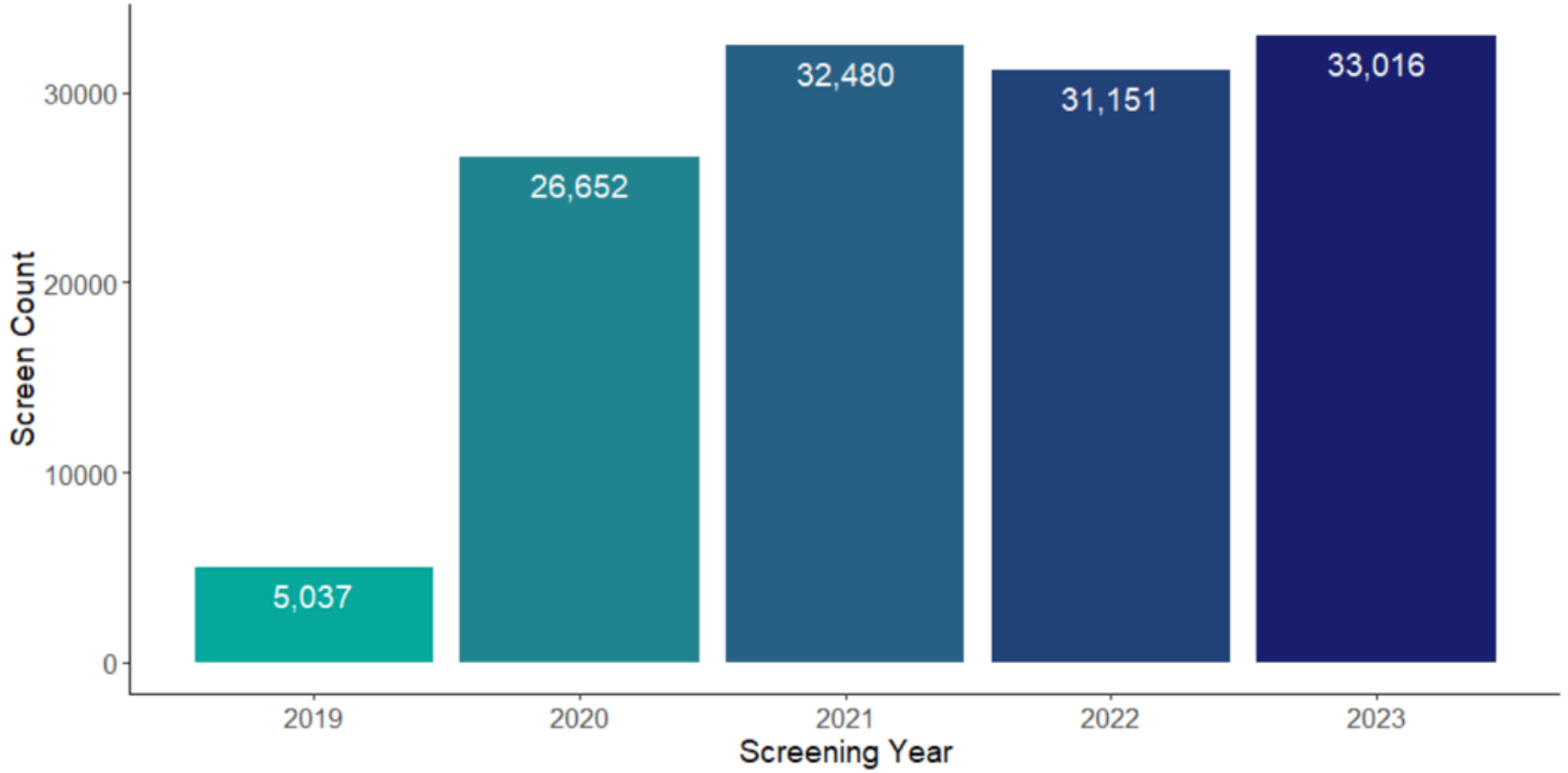
Use of Patient Portal for Screening Programs

Text Box

- Small randomized trial of screening for SDOH among pediatric caregivers in the ED showed a higher endorsement of SDOH in the computer-based group compared to the face-to-face group for sensitive items. (Gottleib, 2014)
- Small pragmatic trial using patient portal for improving screening rates for lung cancer showed 40% did utilize the screening tool. (Dharod 2019)
- A retrospective study of 10,000 UPenn Health System patients, showed that portal use is not consistent across populations but may have clinically meaningful impacts across populations for preventive health behaviors. (Huang et al. 2019)

MetroHealth Medical Center SDOH I4HOPE Screening Program - SCREENS BY YEAR

Figure 1. **MetroHealth Patients** screened counts by the screening year. These values are represented from the table above.



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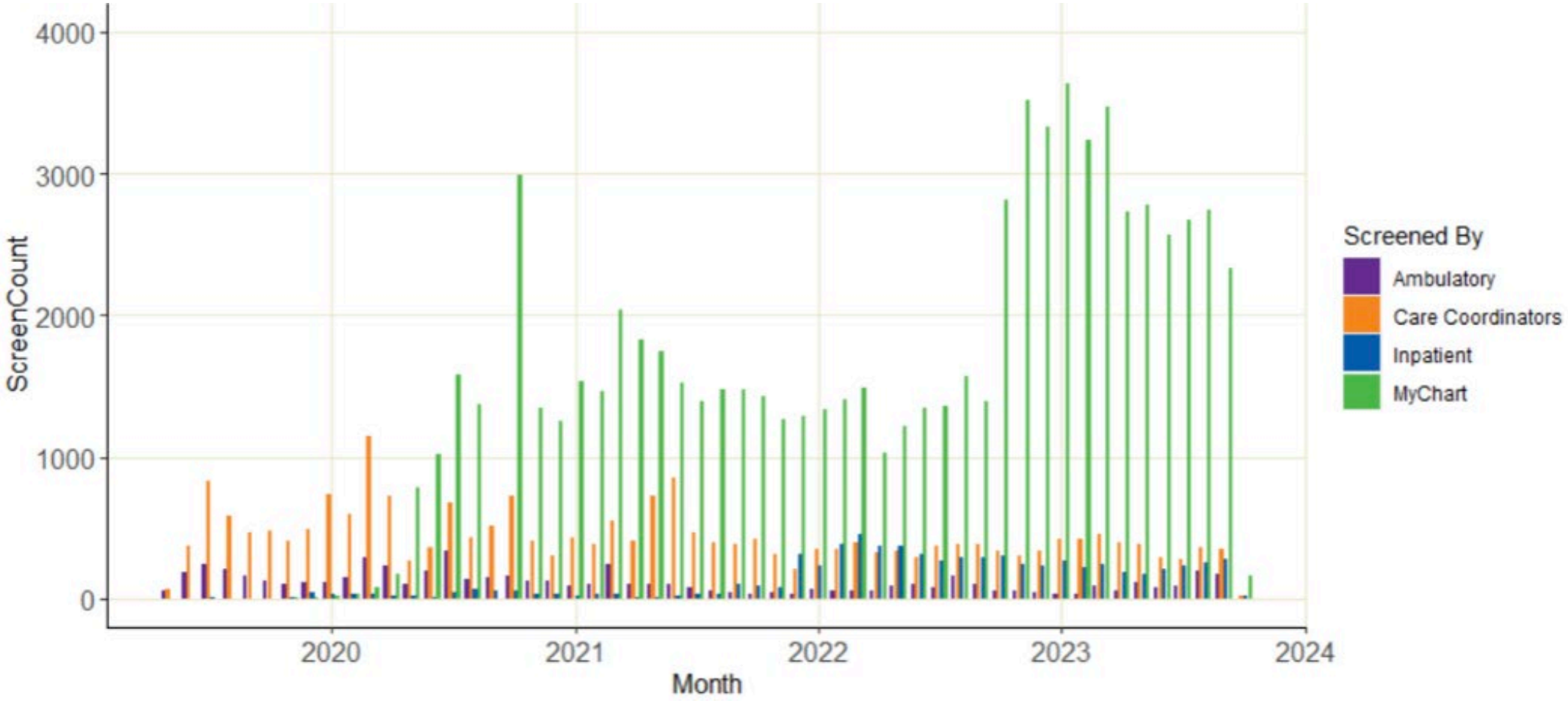
MetroHealth Medical Center I4HOPE SDOH Screening Program - SCREENS BY LOCATION/MODALITY



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Regulatory Context

CMS Mandate for Inpatient Screening

- Screen all admitted adults for the 5 SDOH domains
- 2023: Voluntary reporting
- 2024: Required reporting on number of patients screened, as well as positive screens for each of the 5 domains

Joint Commission Requirements

- Screening for patients from a selected population
- Provide information regarding resources to patients and help them connect with these resources
- Track progress in reducing disparities

Multidisciplinary Workgroup

- **Care Coordination**
  - Linda Krause, Dir. Care Coordination
  - Andrea Colson, Operations Manager
  - Allison Turton, Supervisor Population Health, Care Management
- **Clinical Informatics**
  - Dr. Kiron Nair, CI Fellow
  - Dr. Katherine Liang, CI Fellow
  - Dr. Johnbuck Creamer**,** Director of Clinical Informatics for Inpatient Care
  - Antonella Vicario, Systems Instructor
  - Barb Krakovsky, Systems Analyst
  - Stacy Farnan, Sr Clinical Informatics Analyst
- **Patient Education**
  - Michelle Menke, Mgr. Pt Education
  - Marilee Santiago, Dir Education/Training
- **Nursing**
  - Kimberlee Legarth, Director of Nursing Services
  - Angela Marvin, RN, Nurse Manager 6E
  - Ruby Jackson, RN, Nurse Manager 8E
- **Population Health Research Institute**
  - Dr. Sarah Sweeney, PHRI Fellow
- **Institute for Hope**
  - Mark Kalina, Sr Analyst
  - Ekaterina Dubovikova, Change Management Advisor
  - Sarah Woernley, Nurse Manager
- **Information Systems (IS)**
  - Andrea Orosz
  - Noelle Wiser

Pilot Screening Goals and Strategy

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Pilot Floors

- Med Surg Unit
- Orthopedic Surgery Unit

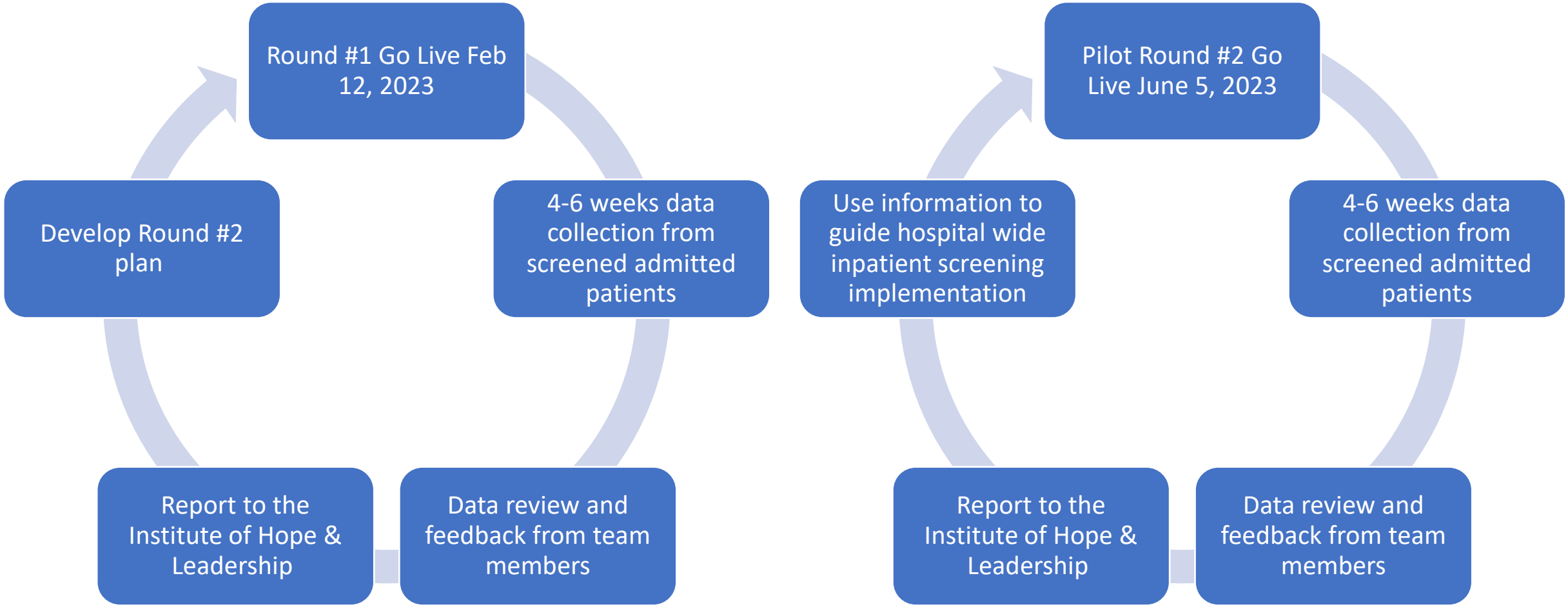
Maintain Data Integrity

- Utilize outpatient SDOH screen
- Allow comparisons across population

MyChart Bedside-First Strategy

- Wisdom from outpatient program
- Minimize impact on staff

PDSA Approach



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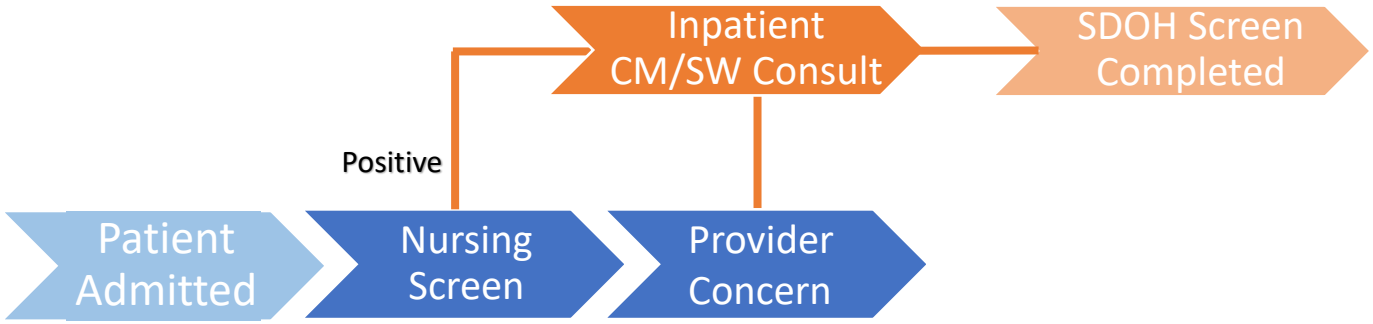
PDSA Cycle 1: Current Inpatient SDOH Screening Workflow

Text Box



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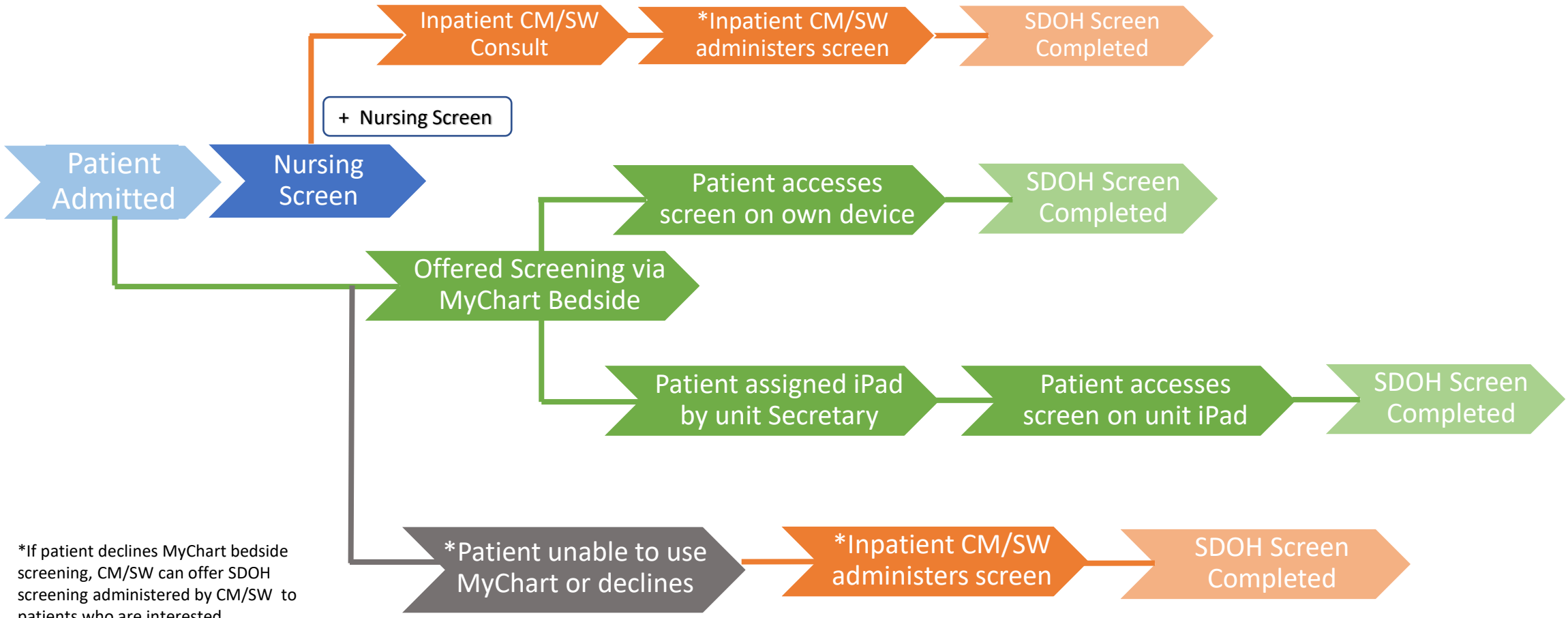
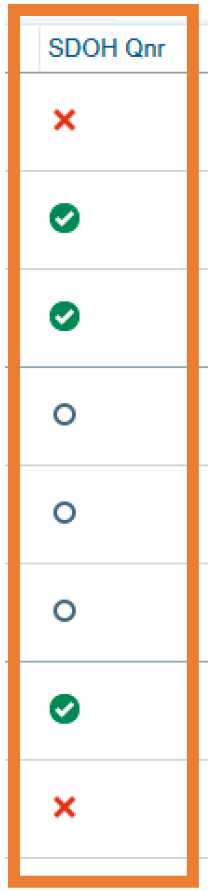
PDSA Cycle 1: NEW Screening Workflow - MyChart Bedside Patient Self-Screen vs CM/SW Administered Screen



*If patient declines MyChart bedside screening, CM/SW can offer SDOH screening administered by CM/SW to patients who are interested.

PDSA Cycle 1: Epic Patient List Notification System for Staff – Track Patient Screening Status



SDOH screen completed, all risks addressed if present

SDOH screen completed, positive risks + request for assistance in high acuity areas that are not yet addressed, needs CM/SW attention.

Declined SDOH screening

SDOH screen activated on MyChart Bedside, not completed

SDOH screen not activated on Mychart Bedside, not completed

Patient unable to be assessed, assess later

PDSA Cycle 2: SDOH Screening Questionnaire Modification for Inpatient Screening

- **Same questions from the ambulatory SDOH screen, however divided into 2 parts**
- **<u>Screen I is the primary screening method</u>**

Inpatient SDOH Screen I	• Focused on **<u>CMS Required Domains, which are also discharge centric</u>** • 12 Questions
Inpatient SDOH Screen II	• **<u>Lower acuity domains</u>** that patient can choose to complete or CM/SW can administer as an **<u>optional</u>** screen • 19 Questions

SDOH Screen I – Primary Screening Method

Prioritizes discharge centric domains that align with CMS requirements

CMS Required Domains

I4HOPE Requested Domain

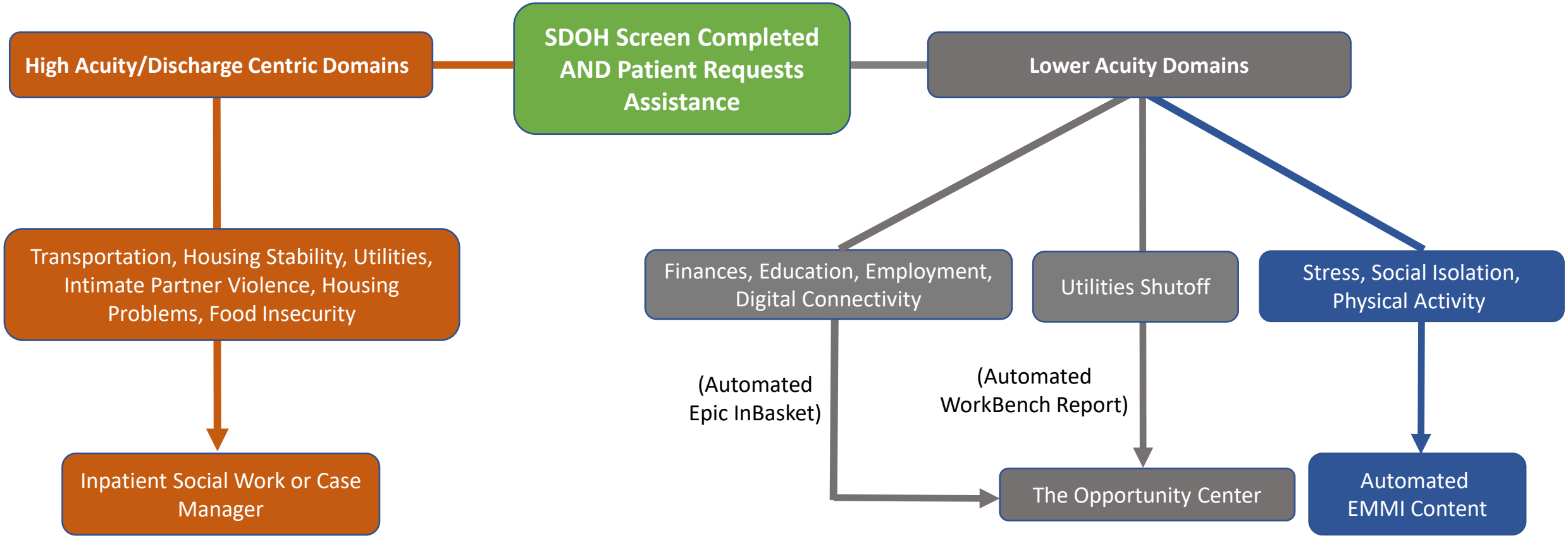
SDOH DOMAIN	Social Factors Questionnaire
Food Security	In the last 12 months, have you worried your food would run out before you had money to buy more?
	In the last 12 months, did the food you bought just not last and you didn't have money to buy more?
Transportation Needs	In the last 12 months, has lack of transportation kept you from medical appointments or from getting medications?
	In the last 12 months, has lack of transportation kept you from meetings, work, or getting things needed for daily living?
Interpersonal Safety	In the last 12 months, have you been: afraid of your partner or ex-partner?
	In the last 12 months, have you been: humiliated or emotionally abused in other ways by your partner or ex-partner
	In the last 12 months, have you been kicked, hit, slapped, or otherwise physically hurt by your partner or ex-partner
	In the last 12 months, have you been forced to have any kind of sexual activity by your partner or ex-partner?
Housing Instability	In the last 12 months, were you ever unable to pay the rent or mortgage on time?
	In the last 12 months, how many places have you lived?
	In the last 12 months, did you ever sleep in a shelter or not have a steady place to sleep?
Utility Difficulties	In the last 12 months, has the electric, gas, oil, or water company threatened to shut off your services? Yes, No, Currently shut off
Digital connectivity	Do you currently have internet access at home? / Do you have internet access on a device or in another location?

SDOH Screen II

Lower acuity domains, optional second section

SDOH DOMAIN	QUESTIONS
Financial strain	Is it hard to pay for basics like food, housing …
Physical activity	On average, how many days per week do you engage in moderate to strenuous exercise ….
	On average, how many minutes per day do you engage in exercise at this level?
Stress	How often do you feel stress these days (tense, restless, nervous, anxious, or trouble sleeping)?
Social connectedness	In a typical week, how often do you talk on the phone with family, friends, or neighbors?
	How often do you get together with friends or relatives?
	How often do you attend church or religious services?
	Do you belong to any clubs or organizations (such as church groups, unions, fraternal, athletic, or school)?
	How often do you attend meetings of the clubs or organizations you belong to?
	Are you currently married, widowed, divorced, separated, never married, living with a partner?
Housing problems	Do you have any problems at home with: Pests, Mold, Lead Paint or Pipes, Water Leaks, Smoke detectors missing/not working …
Education	What is the highest level of school you completed, or the highest degree you have received?
Employment	What is your current employment status?

PDSA Cycle 1: Workflows To Address SDOH Risks and Requests for Assistance



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Risk	Discharge Centric	Screening Method	Responsible Party During Admission	Routing Method
Digital Connectivity	Discharge Centric	MyChart Bedside	I4HOPE CHW	Automatic InBasket Routing to SDOH Request for Assistance Pool
Food Insecurity	Discharge Centric	MyChart Bedside	IP SW/CM	Patient List Notification for CM/SW AND Automatic InBasket Routing to SDOH Request for Assistance Pool
Transportation Needs	Discharge Centric	MyChart Bedside	IP SW/CM	Patient List Notification for CM/SW AND Automatic InBasket Routing to SDOH Request for Assistance Pool
Interpersonal Safety	Discharge Centric	MyChart Bedside	IP SW/CM	Patient List Notification for CM/SW AND Automatic InBasket Routing to Trauma Recovery Pool (they would like it turned off)
Housing Instability	Discharge Centric	MyChart Bedside	IP SW/CM	Patient List Notification for CM/SW AND Automatic InBasket Message to SDOH Request for Assistance Pool
Utility Difficulties	Discharge Centric	MyChart Bedside	IP SW/CM	Automatic Workbench Report for currently shut off - via clarity report excel, pulled out of Epic and emailed to Sarah W, CHW, Mark Kalina. Mychart request for assistance Yes and shut off goes to SDOH assistance pool, /Patient List Notification for CM/SW (!). Should go to CM/SW since CHW not available on weekends .
Food Insecurity	Discharge Centric	CM/SW Navigator	IP SW/CM	Patient List Notification for CM/SW
Transportation Needs	Discharge Centric	CM/SW Navigator	IP SW/CM	Patient List Notification for CM/SW
Interpersonal Safety	Discharge Centric	CM/SW Navigator	IP SW/CM	Patient List Notification for CM/SW
Housing Instability	Discharge Centric	CM/SW Navigator	IP SW/CM	Patient List Notification for CM/SW
Digital Connectivity	Discharge Centric	CM/SW Navigator	IP SW/CM	Patient List Notification for CM/SW
Utility Difficulties	Discharge Centric	CM/SW Navigator	IP SW/CM	Automatic Workbench Report for utilities are currently shut off - going into same excel sheet/Patient List Notification for CM/SW (!)
Physical Activity	Non-D/C Centric	MyChart Bedside	Automatic EMMI Content	Automatically Sent via MyChart
Stress	Non-D/C Centric	MyChart Bedside	Automatic EMMI Content	Automatically Sent via MyChart
Social Connections	Non-D/C Centric	MyChart Bedside	Automatic EMMI Content	Automatically Sent via MyChart
Financial Resource Strain	Non-D/C Centric	MyChart Bedside	I4HOPE CHW	Automatic InBasket Routing to SDOH Request for Assistance Pool
Housing Problems	Non-D/C Centric	MyChart Bedside	I4HOPE CHW	Automatic InBasket Routing to SDOH Request for Assistance Pool
Education	Non-D/C Centric	MyChart Bedside	I4HOPE CHW	Automatic InBasket Routing to SDOH Request for Assistance Pool
Employment	Non-D/C Centric	MyChart Bedside	I4HOPE CHW	Automatic InBasket Routing to SDOH Request for Assistance Pool
Physical Activity	Non-D/C Centric	CM/SW Navigator	Automatic EMMI Content	Automatically Sent via MyChart - both for request help, and at risk
Stress	Non-D/C Centric	CM/SW Navigator	Automatic EMMI Content	Automatically Sent via MyChart - both for request help, and at risk
Social Connections	Non-D/C Centric	CM/SW Navigator	Automatic EMMI Content	Automatically Sent via MyChart - both for request help, and at risk
Financial Resource Strain	Non-D/C Centric	CM/SW Navigator	IP SW/CM	Currently no routing method created
Housing Problems	Non-D/C Centric	CM/SW Navigator	IP SW/CM	Currently no routing method created
Education	Non-D/C Centric	CM/SW Navigator	IP SW/CM	Currently no routing method created
Employment	Non-D/C Centric	CM/SW Navigator	IP SW/CM	Currently no routing method created

Workflows To Address SDOH Risks and Requests for Assistance

Duplicative workflow involving CM/SW and I4HOPE

Workflow requiring CM/SW

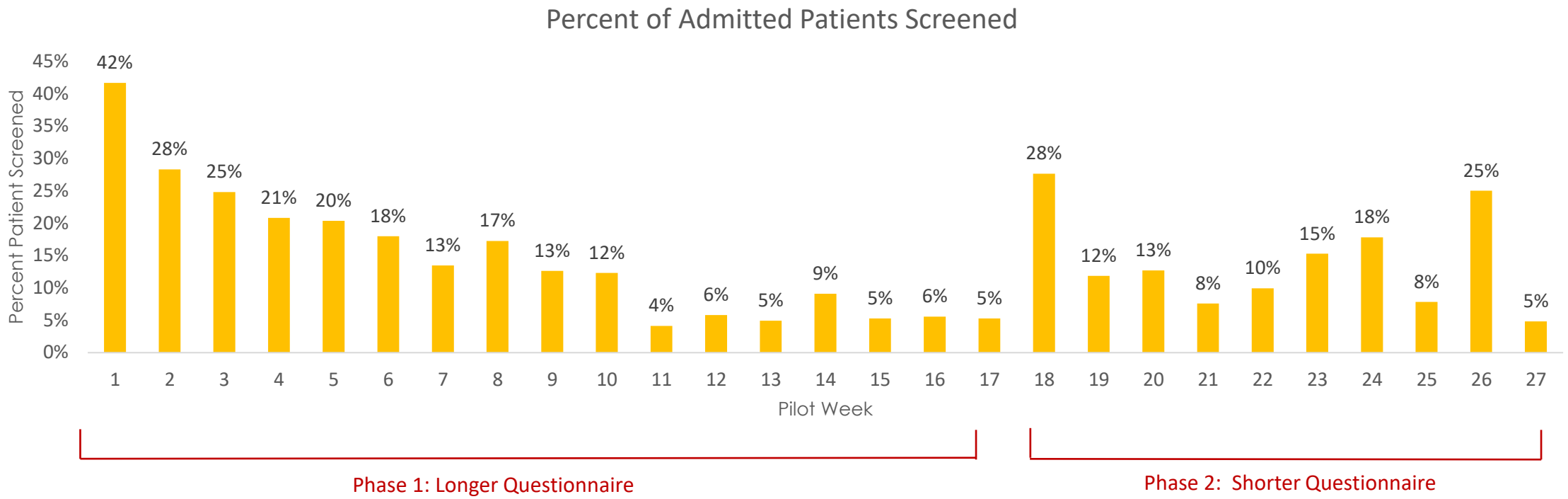
Workflow requiring further development

Results

Text Box

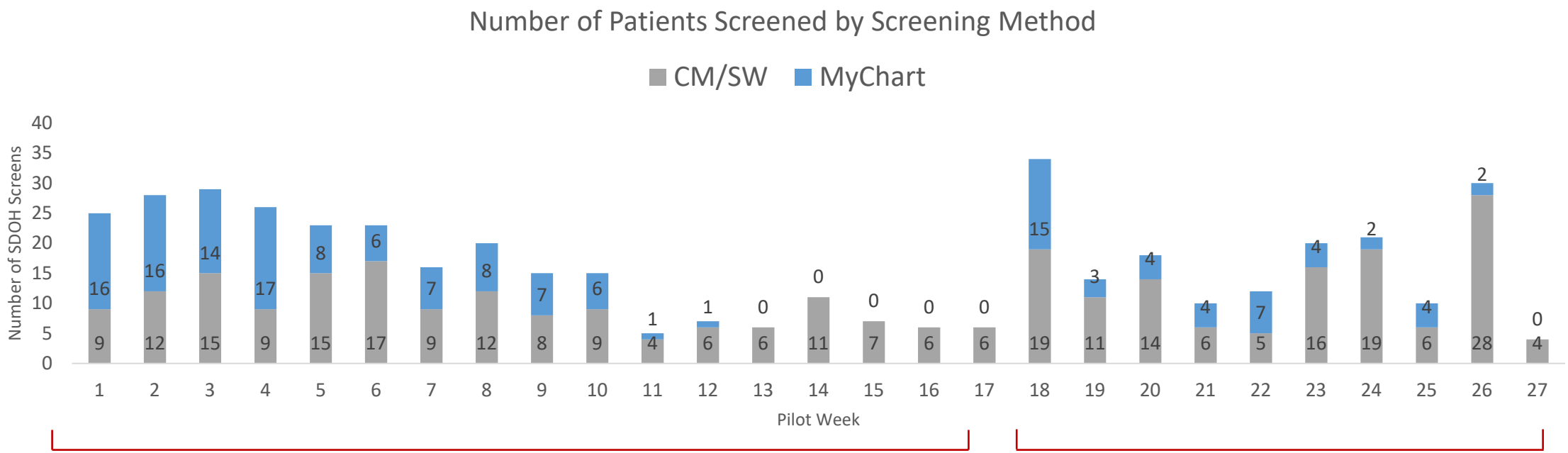
1. Number of Screens Completed
    - Percent of admitted patients screened
    - By modality: MyChart vs In Person
2. Time to complete SDOH Screen In Person
3. Qualitative Feedback on Screening Process
4. SDOH Screening Results

Data – Percentage of Patients Screened 2/11/23 – 08/19/23



Week Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	TOTAL
Overall Screened	25	28	29	26	23	23	16	20	15	15	5	7	6	11	7	6	6	34	14	18	10	12	20	21	10	30	4	**441**
Admitted Patients	60	99	117	125	113	128	119	116	119	122	121	121	122	121	133	108	114	123	118	142	132	121	131	118	128	120	83	**3174**
% Admitted Patients Screened	42%	28%	25%	21%	20%	18%	13%	17%	13%	12%	4%	6%	5%	9%	5%	6%	5%	28%	12%	13%	8%	10%	15%	18%	8%	25%	5%	**14%**

Data – Screening Method By Numbers 2/11/23 – 08/19/23



Week Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	TOTAL
Overall Screened	25	28	29	26	23	23	16	20	15	15	5	7	6	11	7	6	6	34	14	18	10	12	20	21	10	30	4	**441**
MyChart	16	16	14	17	8	6	7	8	7	6	1	1	0	0	0	0	0	15	3	4	4	7	4	2	4	2	0	**152**
% Patient Screened on MyChart	64%	57%	48%	65%	35%	26%	44%	40%	47%	40%	20%	14%	0%	0%	0%	0%	0%	44%	21%	22%	40%	58%	20%	10%	40%	7%	0%	**34%**

Time to Complete Screen – CM/SW Administration

Workflow Per Patient Screened (n = 8)	Minimum Time	Max Time	Avg Time
SDOH Screen I (administer screen and record patient responses)	7 min	15 min	11 min
Unite-Us Referrals*	5 min	8 min	6.5 min

*Although Unite-Us is the primary referral source, CM/SW uses many additional resources to address SDOH risks and needs. The time required to refer to these resources could not be measured in this pilot.
Therefore, the actual time needed to address SDOH risks may likely be higher than observed for Unite-US.

Qualitative Feedback

Text Box

Patients, Nurses, Case Managers, and Social Workers

	Positive	Opportunities
SDOH Screening Tool	• Mission-driven goal • Helped patient with utilities during hospitalization based on screening results	• Feels long • Feels intrusive • Duplicative to nursing admission assessment
MyChart Bedside	• Reduces burden on staff • Increases patient engagement	• Patient does not feel comfortable using tablet • Patient cannot use tablet • Language barriers to completing screener
Process	• Collaborative • Identify needs sooner during admission	• Staffing shortages and changes • Patients already completed screen previously • Not enough community resources

Risk Distribution Inpatient vs. Outpatient Screening

Text Box

		Inpatient (n = 222)	Outpatient (n =17,679)	p-value
Social Drivers of Health (%)				
	Financial Resource Strain	63 (34%)	4,099 (23.2%)	0.186
	Food Insecurity	53 (27%)	3,107 (17.6%)	0.033
	Intimate Partner Violence	6 (6%)	519 (2.9%)	<0.001
	Infrequent Physical Activity	82 (76%)	8,312 (64.7%)	<0.001
	Social Connection	115 (97%)	13,479 (90.9%)	<0.001
	Daily Stress	73 (67%)	10,197 (73.3%)	<0.001
	Transportation Limitations	33 (17%)	1,687 (9.5%)	0.005
	Lack of Internet Access	16 (17%)	918 (5.2%)	<0.001
	Housing Instability	37 (23%)	2,730 (15.4%)	<0.001
	Utilities Issues	21(22%)	1,175 (6.6%)	<0.001
	Housing Problems	15 (18%)	1,130 (6.4%)	<0.001

Comparison of risk distribution during the same screening time period (02/2023 – 04/2023).
More likely to be at risk for all domains in Inpatient Screening. Aside from Financial Resource Strain, these findings were statistically significant.

Process Learnings

Text Box

- **Strong desire to continue process by key caregivers (SM/CM, Nursing)**
  - Optimize tools to facilitate referrals to community health organizations or on-site resources
  - Triage concerns to appropriate users

- **MyChart Bedside adoption is essential**
  - Develop mechanisms to increase patient interest and access to MyChart Bedside
  - Reassess what resources can be used to provision tablets

- **Staffing shortages and time resources a major barrier to completing screen**
  - Identify other resources to help with in person screening (eg. Community Health Workers)
  - Obtain clarity on how often screens need to completed

Operational Opportunities: Improve MyChart Bedside Adoption & Engagement

- **Meal Ordering on MyChart Bedside**
  - Hospital wide rollout planned for 2023
  - Familiarize staff and patients with using MyChart Bedside
  - Address access issues (language, hearing/visual impairment)

- **Volunteer Services – Augment Self Screening**
  - Volunteers can help as digital navigators to help patients set up MyChart Bedside on their own device, and assist them to access and complete screen
  - Volunteers can also help patients access and complete the screen via unit issued iPads

Operational Opportunities: Engage A Diverse Group for Additional Support

- **Resources**
  - Ensure adequate CM/SW staffing to address SDOH risks and positive screens
  - I4HOPE CHWs for transition of care, and warm handoff for continued follow up in the ambulatory setting

- **Virtual Nursing – Augment CM/SW Administered Screening**
  - Collaborate with CM/SW to identify appropriate patients
  - Schedule virtual visit during the admission to administer screen

- **Community Health Workers – Augment CM/SW Administered Screening**
  - ED Community Health Workers to admitted patients in the ER

Research Opportunities and Next Steps

- Create plan to research hospital-wide implementation
- Examine barriers to inpatient patient portal use
- Compare SDOH screening outcomes in patient portal vs staff-assisted screens
- Assess referral workflow successes and challenges at the community organization level
- Contribute evidence for increased direct material support for patients

We welcome thoughts and questions! Thank you!

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Thank you for your attention!

Analysis of Overlap with Nursing Screen with CMS Required Domains

SDOH DOMAIN	SDOH Screen I	Nursing Admission Screen
Food Security	In the last 12 months, have you worried your food would run out before you had money to buy more?	
	In the last 12 months, did the food you bought just not last and you didn't have money to buy more?	
Transportation Needs	In the last 12 months, has lack of transportation kept you from medical appointments or from getting medications?	Transportation at discharge
	In the last 12 months, has lack of transportation kept you from meetings, work, or getting things needed for daily living?	Has discharge transport been arranged?
Interpersonal Safety	In the last 12 months, have you been: afraid of your partner or ex-partner?	Are you in a situation where someone is hurting you?
	In the last 12 months, have you been: humiliated or emotionally abused in other ways by your partner or ex-partner	Do you feel safe?
	In the last 12 months, have you been kicked, hit, slapped, or otherwise physically hurt by your partner or ex-partner	Is anyone forcing you to do anything that you don't want to do?
	In the last 12 months, have you been forced to have any kind of sexual activity by your partner or ex-partner?	
Housing Instability	In the last 12 months, were you ever unable to pay the rent or mortgage on time?	Is the patient from Group Home / **Shelter** / Psychiatric Facility?
	In the last 12 months, how many places have you lived?	
	In the last 12 months, did you ever sleep in a shelter or not have a steady place to sleep?	
Utility Difficulties	In the last 12 months, has the electric, gas, oil, or water company threatened to shut off your services? Yes, No, Currently shut off	