

Transforming Delirium Management

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Objectives

- Review a systems approach to moving to patient-centric care, leveraging interprofessional team-based informatics.
- Discuss tools and processes used to transform data into actionable information.
- Highlight strategies to optimize clinical workflows, improve data transparency and improve patient outcomes around delirium across 21 KP medical centers.

Who We Are

Kaiser Permanente Today



208,000 employees and **75,400** physicians & nurses serving **11.8 million** members in **8 regions**



677 Medical Office Buildings



Primary & Specialty Care, Hospital, Lab, Pharmacy, Imaging, Optical, Dental, Insurance, Research



45 million office visits



2 million colonoscopies



36,265 cardiac surgeries and procedures



98,000 births



248 million visits to KP.org



150 million lab orders per year



23 million secure messages sent to providers



5 million appointments booked online



78 million prescription orders per year

MISSION: To provide high-quality, affordable health care services and to improve the health of our members and the communities we serve.

39
hospitals

Interprofessional Informatics

National Center Vision

We believe **high-functioning teams** can improve the experience, outcomes and costs of health care.

National Center for Interprofessional Practice and Education is studying and **advancing the way stakeholders in health work and learn together.**



NATIONAL CENTER for
INTERPROFESSIONAL
PRACTICE and EDUCATION



Interprofessional Informatics

- A key part of healthcare transformation is the need for healthcare systems to transform into systems that support interprofessional practice and interprofessional education (IPP/IPE).
- The biggest challenge we face in developing informatics solutions to support collaboration is the need to integrate people, processes and context.

Delaney, CW., Kuziemy, C., & Brandt, B. *Integrating informatics and interprofessional education and practice to drive healthcare transformation*, Journal of Interprofessional Care, 2015; 29(6): 527-529.

Delirium

Delirium is an **acute confusional state**.

More than **7 million** Americans suffer from delirium each year.

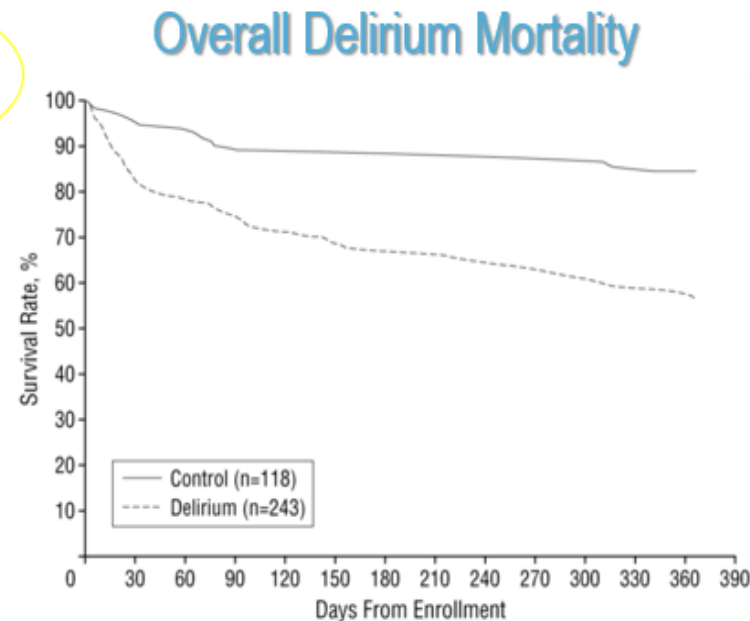
Delirium affects up to **50%** of elderly people in the hospital

Sources:

- Inouye SK. Delirium in Older Persons. N Engl J Med 2006; 354:1157-1165. March 16, 2006. <http://www.nejm.org/doi/full/10.1058/NEJMr052321#t=article>
- American Delirium Society; <https://www.americandeliriumsociety.org/about-delirium/healthcare-professionals>
- Inouye SK, Westendorp RGJ, Saczynski JS. Delirium in Elderly People. [www.thelancet.com](http://dx.doi.org/10.1016/S0140-6736(13)60688-1) Published online August 28, 2013 [http://dx.doi.org/10.1016/S0140-6736\(13\)60688-1](http://dx.doi.org/10.1016/S0140-6736(13)60688-1)

Delirium Prevention & Management

- Delirium is a “Dangerous” Diagnosis
- More than 60% of patients with delirium are not identified by the healthcare system!
- Higher chance of poor or no recovery for those who get delirium:
 - Long term cognitive & functional impairment
 - Prolonged hospitalizations*
 - Permanent institutionalization
 - Death
- Delirium is a preventable condition in 30-40% of cases



Arch Intern Med. 2002;162(4):457-463

- American Delirium Society; <https://www.americandeliriumsociety.org/>
- Delirium in Elderly, Sharon Inouye, Rudi Westendorp, Jane Saczynski (The Lancet Published online August 28, 2013 [http://dx.doi.org/10.1016/S0140-6736\(13\)60688-1](http://dx.doi.org/10.1016/S0140-6736(13)60688-1))

Identifying Delirium Cases



Nursing Assessment



Pharmacist identifies deliriogenic medication



Physician diagnose and document on the problem list

Med/Surg CAM Items	Responses
Acute Onset (1A)	Yes/No
Fluctuating Course (1B)	Yes/No
Inattention (2)	Yes/No
Disorganized Thinking (3)	Yes/No
Rate Patient's Level of Consciousness (4)	Alert (Normal), No Coma (Unarousable), Yes (Sedated, Anxious, Agitated), Yes (Sedated, Hypoactive), Yes (Sedated, Hyperactive)
Delirium Present (overall assessment)	Yes/No

To be have a positive CAM result (Delirium Present = Yes), the patient should have both A & B below:

- Ⓐ 'Yes' for both 1 (1A&1B) and 2
- Ⓑ 'Yes' for either 3 or 4



(Includes Benzodiazepines, Opioids, and Anticholinergics)

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Leveraging EHR Tools

- Interprofessional collaboration and coordination led to increased value of nursing documentation and interventions
- Interprofessional communication was improved in frequency, quantity with shared knowledge and mutual respect
- Risk score utilizes existing information in the patient's chart which eliminates the need for duplicate documentation
- Nursing Documentation (CAM) + Best Practice Alerts = automatic addition of Falls and Delirium Care Plans
- Shared System list: Interprofessional communication
- Medication Grouper for deliriogenic medications

Pilot 2017

Where/How:

- 4 pilot facilities in HI and SCAL

Process and outcome metrics generated to measure:

- Increased practice of assessing for delirium
- Correlation between CAM+ and delirium diagnosis
- Interventions when delirium present
- Increased inter-professional collaboration

*Research analysis underway in partnership with KP
Department of Research*

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Findings 2017

Medications:

- Over 600 deliriogenic medication orders were discontinued or had the dosage decreased
- Over 90% of recommendations by pharmacy for a change with a response were accepted by physicians

Non-Pharmacologic Interventions:

- Confusion care plan flowsheet rows of 3 or more were added nearly 100% of the time by nursing for patients with a positive CAM

Assessment and Diagnosis:

- % nursing assessment of CAM positive and delirium diagnosis by provider/coder aligned from 40-70% monthly during pilot period

KP NCAL Pilot 2017 *(2 hospitals)*



**CAM Nursing
Assessment 2x/day
on Patients ≥18**

Confusion Assessment Method (CAM)

Acute Onset (1A)
Fluctuating Course (1B)
Inattention (2)
Disorganized Thinking (3)
Rate Patient's Level of Consciousness (4)
Delirium Present

**Prevention Measures
(non-pharmacologic)**

**RN Care Plans and MD
Ordersets automatically
initiated for at-risk patients:**

- Consolidate care at night
- Reduce benzos
- Reduce noise
- Provide patients w/
glasses, hearing aids, etc.

**Pharmacist Identifies
Deliriogenic Medications**



*(Includes Benzodiazepines,
Opioids, and Anticholinergics)*

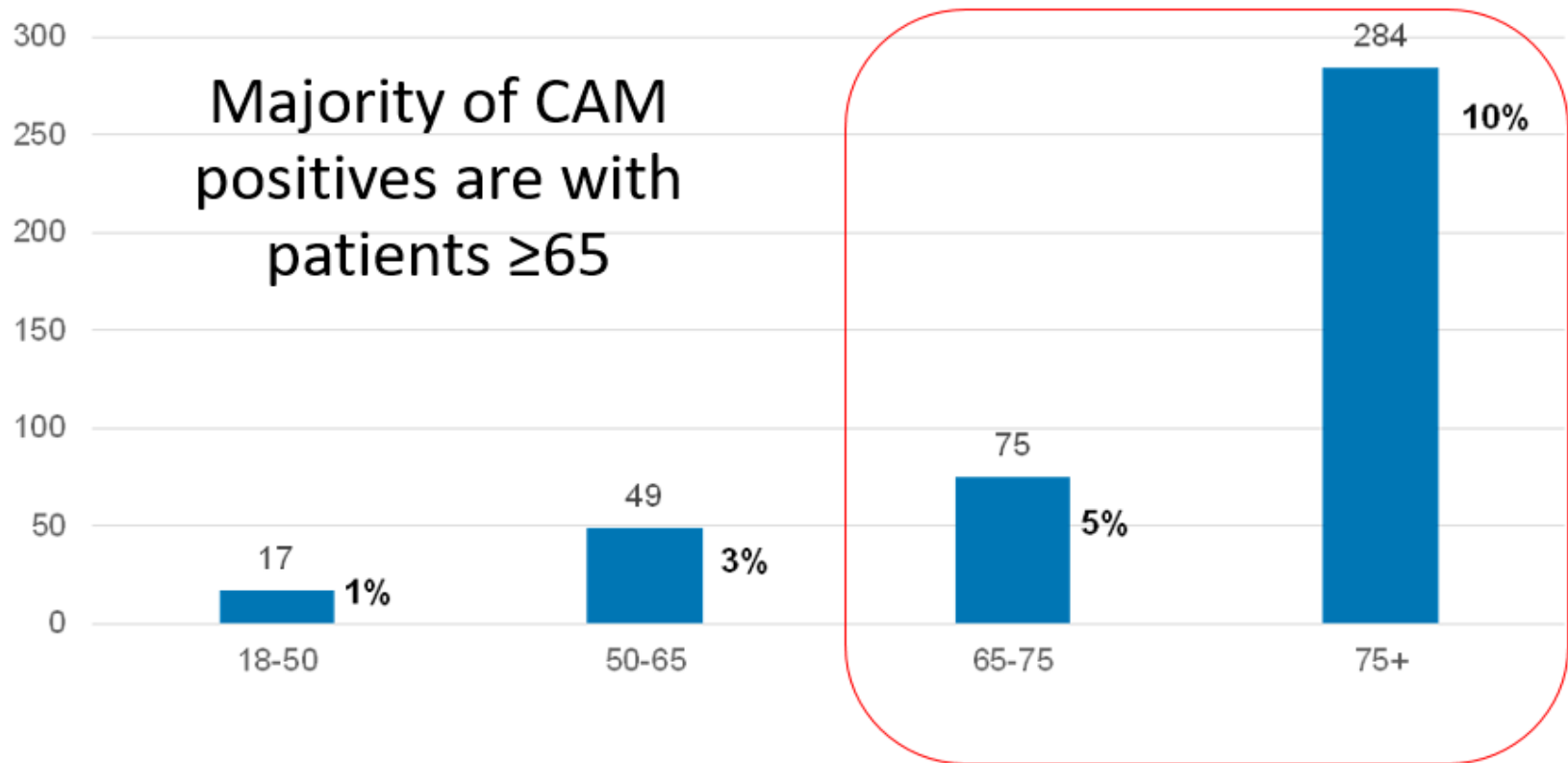
**MD Diagnosis, Tx & Doc. on
Problem List; Psych Consult
when needed**



An accompanying Measurement Strategy and Education Plan was also designed and tested to support the program components

Pilot Findings

Total CAM Positive by Age Distribution during Pilot Period(Aug-Nov 2017)



Pilot Learnings

- Education is key!!!
- The basic workflow **works**
- More time is needed to see changes in outcomes data*

3rd facility results from Sept '10 to March '15 (for patients with delirium diagnosis)*:*

- Sustained ~1.7 day decrease in LOS over 5-yrs
- Decrease in 30-day hospital readmission (9.7% vs. 3.4%)
- Decrease in 30-day ED visits (28.1% vs. 14.7%)
- Decrease in discharge to SNF or hospice rather than home (42.6% vs. 18.4%)

Opportunities for improvement:

- RNs do not consistently notify MDs when patients are newly CAM+
- RNs need more training on CAM
- HBS do not consistently document delirium on problem list (56% of CAM+ patients had delirium on problem list)
- Having on-site PharmDs review meds of high-risk patients is resource intensive:
 - Pharmacy will pilot a centralized pharmacy model to address deliriogenic medications in CAM positive patients – locations & dates TBD

2018 Spread Plan



CAM Nursing Assessment 2x/day
on **patients ≥65 or patients with
Dementia or Delirium in the PL**

Prevention Measures
(non-pharmacologic)

Physician Diagnosis, Tx &
Doc. on Problem List; Psych
Consult when needed

Confusion Assessment Method (CAM)
Acute Onset (1A)
Fluctuating Course (1B)
Inattention (2)
Disorganized Thinking (3)
Rate Patient's Level of Consciousness (4)
Delirium Present

RN Care Plans and MD
Ordersets automatically
initiated for at-risk patients:

- Consolidate care at night
- Reduce benzos
- Reduce noise
- Provide patients w/
glasses, hearing aids, etc.

Notify HBS/attending MD
of new onset (1st
CAM+), or any change in
neurologic status



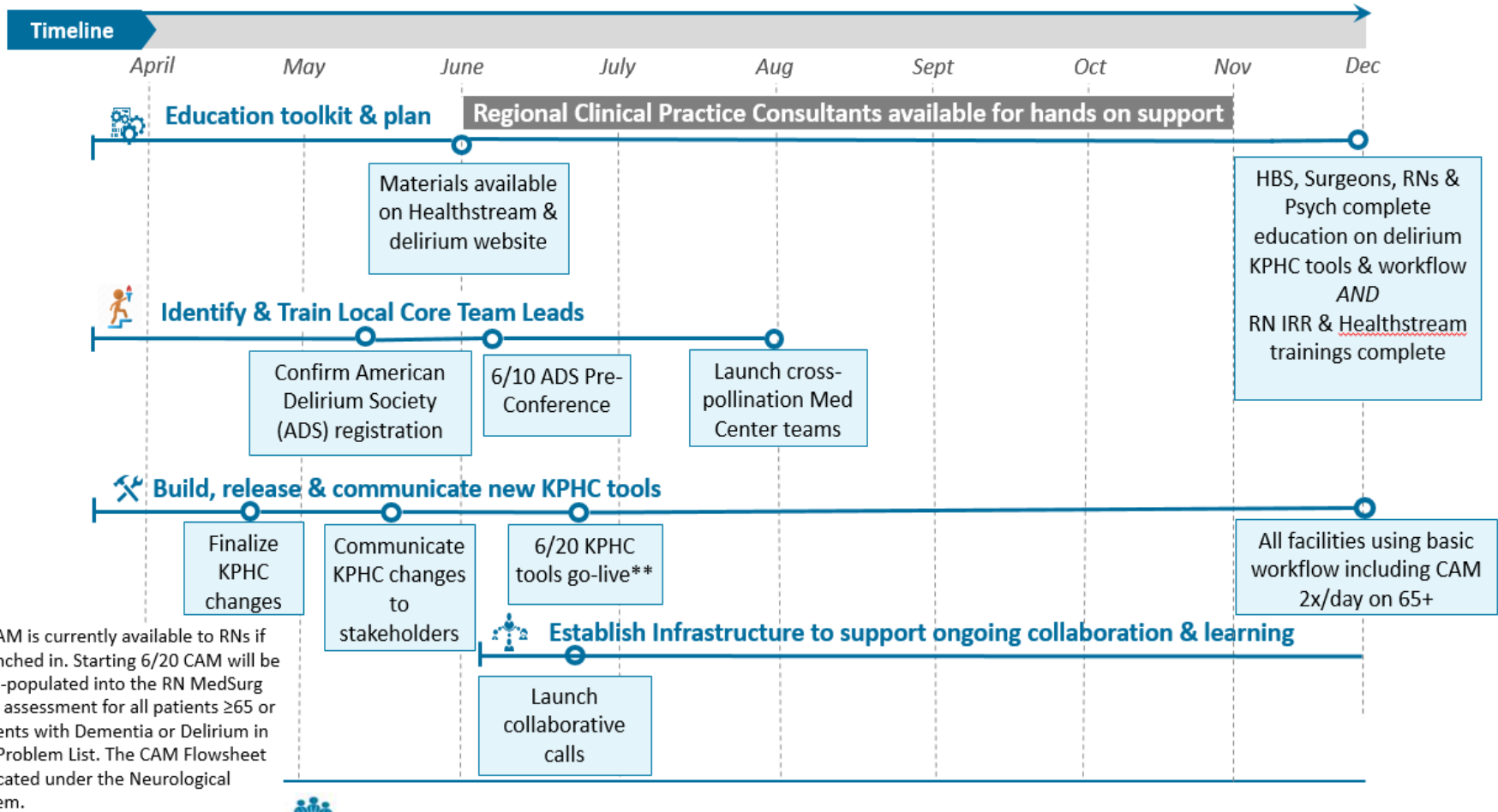
Back to Basics Education

- We are making available several tools in KPHC for sites to use as of June 20th
- Due to multiple requests for Regional education tools, we are also providing educational materials for nurses & other frontline staff so that they know what these tools are, how to use them, and how to be ready for the stages to come



Tools	Delirium Foundational Elements
Comprehensive Delirium Manual	<ul style="list-style-type: none">• Delirium 101: what it is, prevention, treatment & deliriogenic meds• Non-pharmacologic interventions• KPHC tools including short CAM
KP Delirium Video	<ul style="list-style-type: none">• Delirium 101
KP CAM Video	<ul style="list-style-type: none">• How to assess a hospitalized patient using the Short CAM in med-surg & tele units
Patient/Family Education Handout & Video	<ul style="list-style-type: none">• Basic delirium education• Non-pharmacologic interventions
Facility Level Data	<ul style="list-style-type: none">• Tableau report• Monthly collaborative data call

Back to Basics Spread Plan



Summary

❑ Organizational

- ✓ Interprofessional collaboration – Apply model to other initiatives and priorities to transform culture, team, care delivery and quality

❑ People

- ✓ Every member of the team is needed.
- ✓ Education support is important, both clinical content and learning capacity

❑ Technology

- ✓ Delirium tools enable frontline teams to reframe focus on “Always Events”

❑ Opportunities

- ✓ Sustain interprofessional collaboration and team approach
- ✓ Ensure enterprise alignment in next phases of work
- ✓ Engage medical, nursing and pharmacy informatics, and clinical decision support, analytics and research
- ✓ Leverage learnings and insights for other organizational initiatives in a complex environment, utilizing Epic tools