附錄十一、From Hospital to Home：Mobile NICU Program 演講簡報

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Conference & Exhibition
FEB 29 – MAR 4, 2016 | LAS VEGAS
TRANSFORMING HEALTH THROUGH IT

From Hospital to Home: Mobile NICU Program

March 1, 2016

Donna Sexton, Director of Employee Benefits, Costco
Jeffrey Jacques, MD, President and Founder, NeoCare Solutions, A Healthagen Business

DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.

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Conflicts of Interest

Donna Sexton has no real or apparent conflicts of interest to report

Jeffrey Jacques, MD is the President and Founder of NeoCare Solutions℠ which plans on expanding commercial availability in 2017

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Learning Objectives

1. Identify Costco's approach to employee health and the role technology plays in its benefits strategy
2. Describe how a mobile health program for NICU parents supports Costco's engagement and population health goals
3. Discuss mobile health's positive impacts on NICU care coordination and care management

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Benefits Realized for the Value of Health IT

Satisfaction	Support of NICU families reinforces Costco commitment to its employees health, engagement and well-being
Treatment and Clinical	Results indicate a savings in the 30%+ range, driven by fewer ER visits, re-admissions and lower average allowed costs
Electronic Data and Information	Mobile NICU program managed through a tablet-based app with 24/7 access to personalized articles and support from coach (RN/LCSW)
Patient Engagement	100% Net Promoter score. 70% of eligible employees participate and maintain high levels of engagement

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130,000+

employees in the US

89%

employees eligible for benefits
97% enrolled

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Our Philosophy

People love working here
Best Place to Work 2015
glassdoor

1. Family atmosphere and strong core values
2. Good jobs, wages and benefits drive loyalty and success
3. High level of employee trust and low turnover
4. Resources to help employees and families
5. Cost and value conscious

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How We Approach Employee Benefits

- Deliver support when it's needed most
- Fit new programs seamlessly into benefits offerings
- Favor pilots as a way to "try on" new approaches
- Use technologies and programs that are valued by participants

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How We Approach Employee Benefits

- Maintain high quality and value while cutting out waste and unnecessary expense
- Meet participants where they are to increase engagement
- Use technology when it makes sense
- Participants are part of the team – we're all in it together

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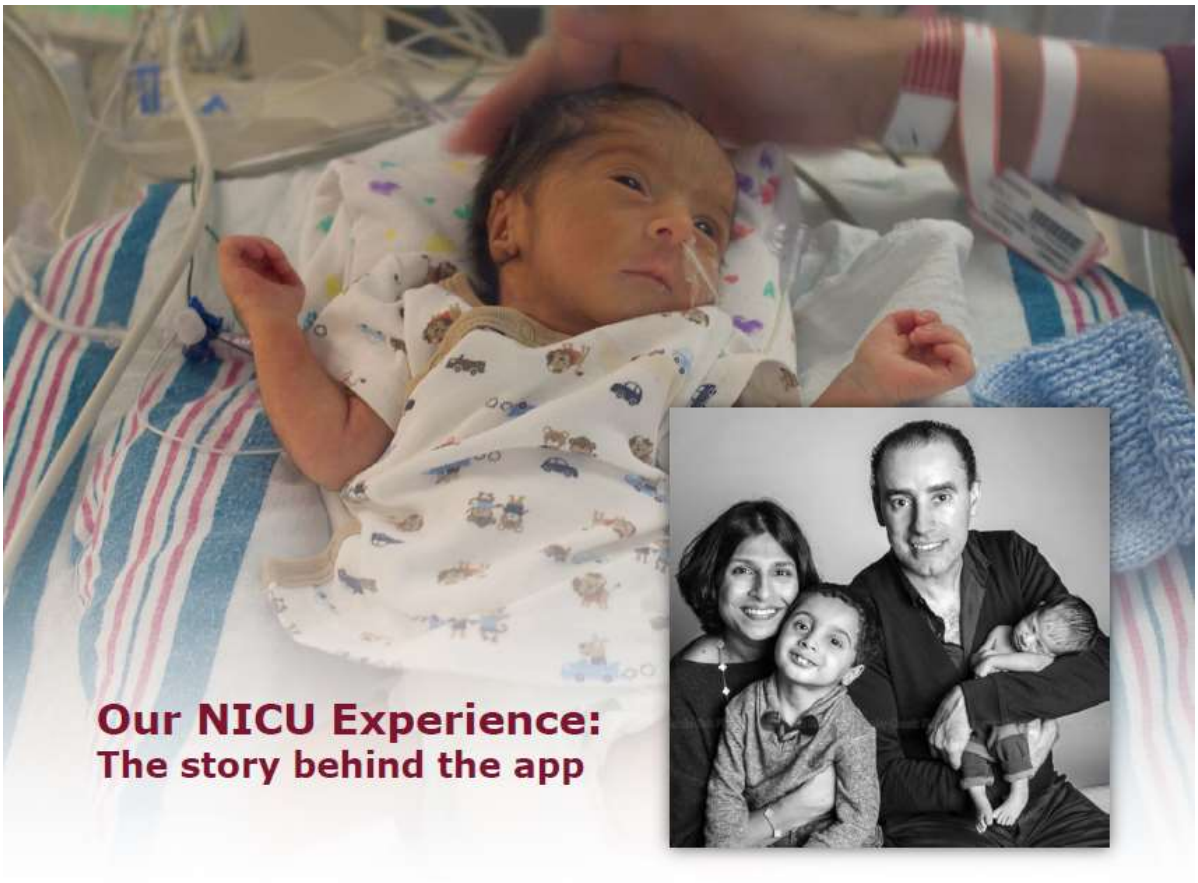
7 Future Costco Employees Born Each Day

- Highly used maternity benefit
- 2,600+ in 2014
- Average cost of $12,000
- NICU care – $8.8 million
- Needed program that would:
  - support benefits philosophy
  - be convenient for employees
  - help manage costs

Mobile NICU Coaching Program

- Coaches reach out to employees who have a baby in the NICU
- Employees are connected with their dedicated, experienced coach and given access to mobile app
- Coach and app are available to help with the transition through the baby's first birthday
- Program is 100% free for employees



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Supporting a Population in Need

10% of newborns admitted to neonatal ICU

$32,000 average medical costs through first year

500,000+ families affected annually

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Source: Managed Care, 2010

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Compassion, Experience, Convenience

- Highly experienced neonatal registered nurses and licensed clinical social workers
- Available via phone, email or chat to answer questions, provide information and advise on how to best support the team of NICU nurses and doctors
- Wealth of NICU-related information and articles
- Tools to track weight, feedings and important developmental milestones

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Coach Profile: Sarah Melberg, RN

"We are changing lives **and truly making a difference.**"

- Registered Nurse (RN), Certified Neonatal Resuscitation Program Instructor, Certified in Neonatal Intensive Care Nursing (ANCC)
- 20+ years of nursing experience in postpartum, NICU, home health and neurology
- Spent 16 years at Swedish Medical Center in Seattle, WA where she provided primary nursing care to the neonates in the level III NICU

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"I had a family who had a long and tough year with their infant – a lengthy NICU stay, multiple complications and surgeries. When this family graduated from the program, I received a picture of the baby sitting on a sandy shore, with a beach hat, matching sunglasses and a big smile on his face. **Happy, healthy and thriving."**

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A Specialized Approach That Works

- Empowers employees during time of need
- Personalized support and guidance
- 1:1 resource
- Integrated with Costco case management program
- Employee engagement + greater clinical care
- Mobile access is key for busy parents

Source: Managed Care, 2010

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Clinical History

- Baby born at 38 weeks with left congenital diaphragmatic hernia
- Intubated at birth and placed on a ventilator, had post-operative complications with hypoplastic left lung and associate pneumothorax
- Feeding intolerance and supraventricular tachycardia episodes

Engagement

- Mom enrolled in program a week after delivery
- Frequently asks questions and sends updates on progress via app
- Coach provided weekly updates to Costco's Case Manager while baby was in the NICU and monthly updates at home
- On-going support for transition from NICU to home, including managing follow-up and specialist visits
- Coach provided education/coaching to parents on empowerment, emotional well-being, infection prevention and safety and preparation for baby going home

Clinical Impact

- Baby has been home for over 3 months now with no hospital re-admissions, ER visits, or doctor sick visits
- Baby continues to meet developmental milestones for his age

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"Thank you for all the great, helpful material you have given me. **I'm so happy to be part of this program** and to have all this positive information."

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Clinical History	▪ IVF twins ▪ Complications included di-di twins with fetal demise of one baby at 30 weeks ▪ Mom had a premature rupture of membranes and baby was born at 34 weeks via C-Section
Engagement	▪ Mom enrolled in program at beginning of hospitalization and communicates with coach via app, as well as accessing articles ▪ Coach provided on-going grief counseling and emotional well-being assessments to identify behavioral health needs ▪ Coach provided weekly updates to Costco's Case Manager during stay NICU and monthly updates while the baby is home ▪ Mom prepared for baby's discharge by taking a CPR class, roomed in with baby prior to discharge and required family/friends in contact with baby to be up to date on their immunizations
Clinical Impact	▪ Baby had a decrease in the length of stay in the NICU and was discharged prior to due date ▪ Baby is meeting all milestones and hasn't had any re-admission or sick visits

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"I am so appreciative of all the support you have provided to me and my family. Thank you for the great articles!"

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Implementation: What We Learned

- Let the experts be the experts
- Connect with disability and EAP partners
- Provide another resource for clinical care team
- Remove barriers to maximize engagement:
  - No cost for employees
  - No travel
  - Meet employees where they are

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Source: Managed Care, 2010

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70% enrollment for eligible families

- Initial disbelief but eagerness to participate
- High engagement:
  - 2,027 chat sessions (20 per family)
  - 2,944 logins (25 per family)
  - 986 articles read (10 per family)
- Employee feedback has been overwhelmingly positive

"I hope other NICU families get the awesome support that we had. The communication, the tracking programs and the articles all helped us understand what was going on and helped us through some challenging times."

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Benefits Realized for the Value of Health IT

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Questions

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附錄十二、Building a Road-Map for Social Media in Public Health 演講簡報

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Building a Road-Map for Social Media in Public Health

March 4, 2016

Richard Booth, RN PhD, Assistant Professor, Western University
Susan McBride, PhD, RN-BC, CPHIMS, FAAN, Professor, Texas Tech University Health Sciences Center

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Conflict of Interest

Richard Booth, RN, PhD
Susan McBride, PhD, RN-BC, CPHIMS, FAAN

Have no real or apparent conflicts of interest to report.

Agenda

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- 1030-1035 – Welcome and introduction
- 1035-1045 – Background to topic
- 1045-1050 – Questions and instructions to audience
- 1050-1125 – Roundtable
- 1125-1130 – Summary / conclusions

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Learning Objectives

- Analyze the findings and recommendations generated by the Canadian/United States research collaborative who examined the use of social media in public/population health
- Construct best and leading practices related to the use of social media in public/population health settings
- Identify strategies and methodologies to evaluate the effectiveness of social media in public/population health settings
- Compare and contrast consumer engagement strategies for improving population health with complementary options identified by the collaboration to further engage communities in health management activities
- Outline methods to measure effectiveness of social media strategies to engage the healthcare consumer in community health initiatives

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STEPS: Patient Engagement & Population Management

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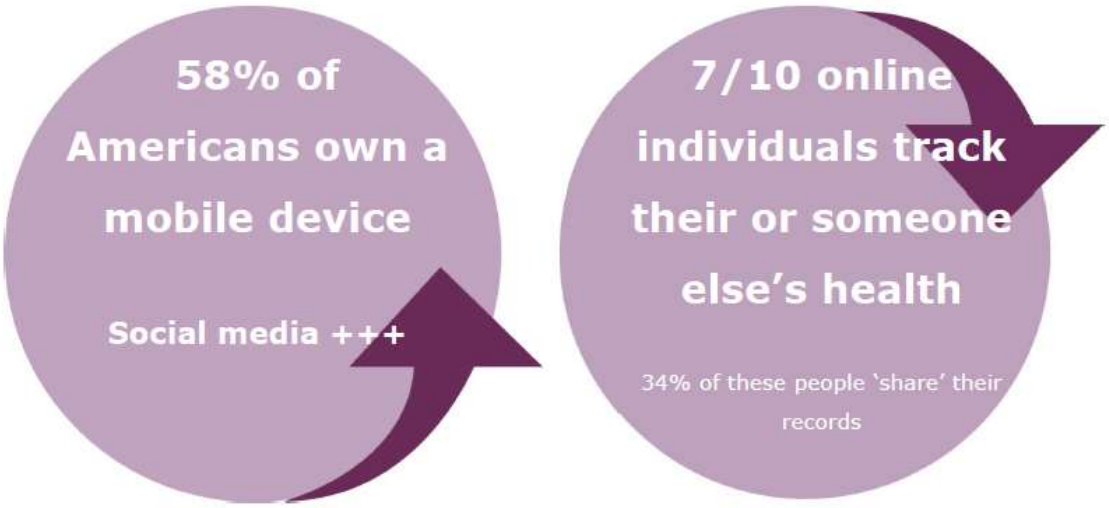

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PEW, 2014

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Presentation

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Overview and Purpose

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- **Purpose:**
  1. To develop an understanding of the current state of U.S. best practices for using social media to improve population health and health disparities;
  2. To develop tools to assess the effectiveness of social media initiatives;
  3. To document a roadmap for the implementation of the use of social media in population and community health initiatives.
- **Planning Meeting:** May 5, 2015, "***Social Media and Public Health: Exploring Best-practices and Future Research Directions"***, held in London, Canada
- **International Symposium:** January 29, 2016, ***"Defining a Roadmap for Implementation of Social Media in Population and Community Health Initiatives,"*** to be held in Austin, TX

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Significance of Social Media

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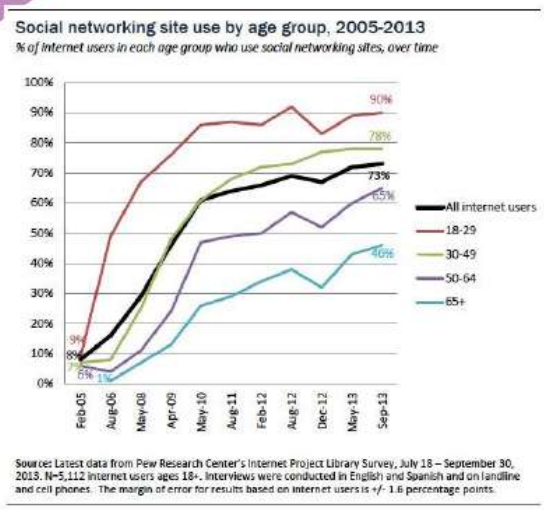

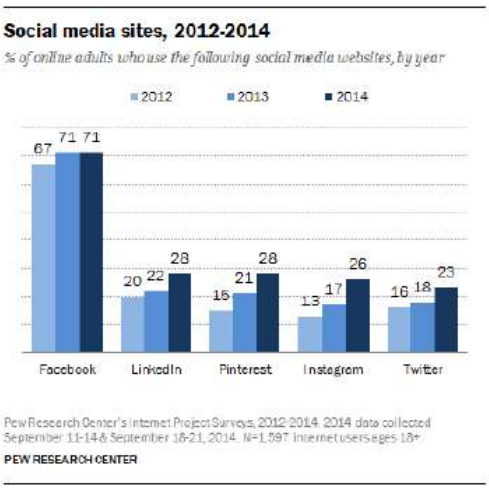

Healthy People 2020 indicates consumer engagement in health technology is critical to the population of the U.S. prioritizing a goal to ***"use health communication strategies and health information technology (IT) to improve population health outcomes and health care quality, and to achieve health equity"***.

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How are State Health Departments keeping up?

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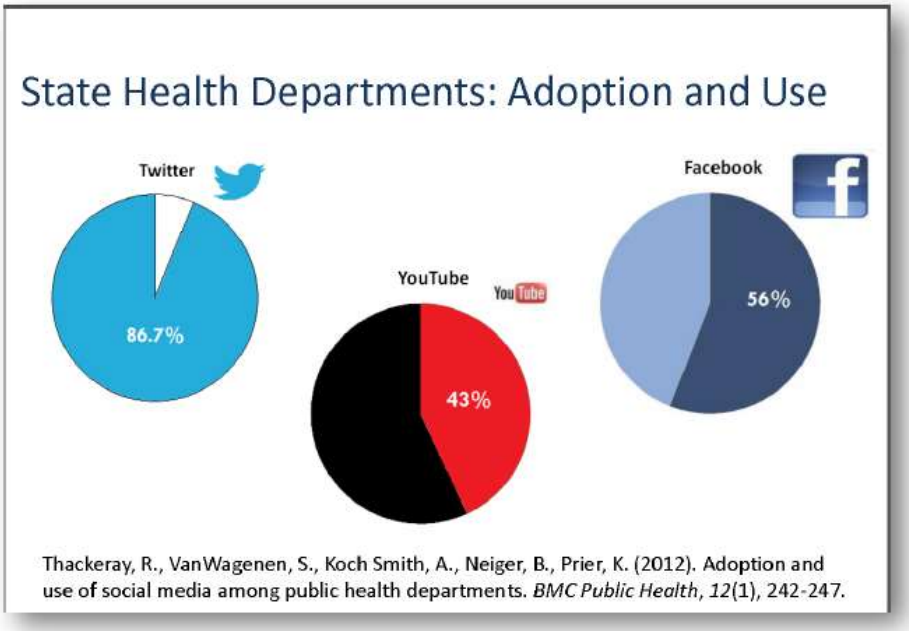

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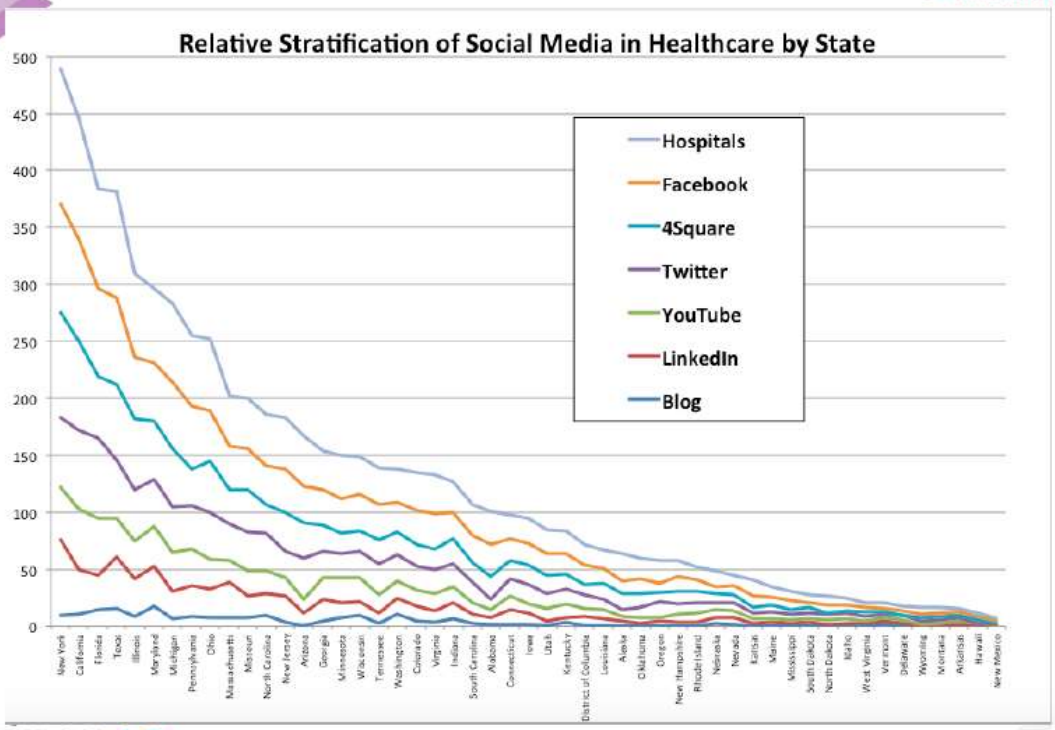

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(Data from Mayo Clinic, 2015)

How are Canadians using social media in public health?

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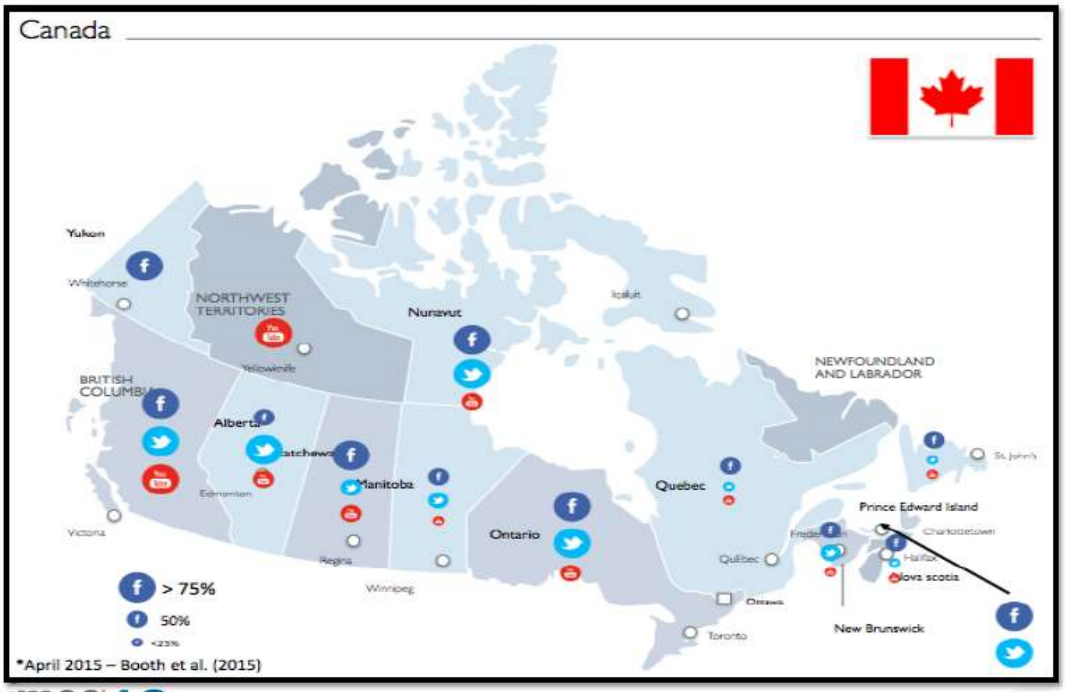

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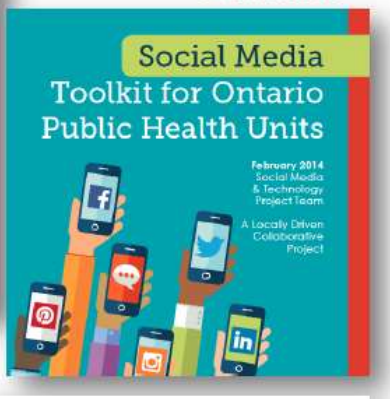

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Objectives Addressed (London, Canada)(#PhSmWest):

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- describe the current use and function of social media tools by Ontario public health units when interacting with community members, and others (e.g., municipal policymakers)
- explore various technical requirements, policies, and standards for use of social media to support public health across a spectrum of operational programs and environments
- generate an inventory of best-practice activities (including staff training, and strategies to attract/engage consumers), evaluation approaches, and if any, theoretical underpinnings related to social media tools used by public health units
- identify priority research areas related to social media from the perspective of public health practitioners, leadership, and researchers

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Planning Meeting Priorities Identified London, Canada (May 2015)

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ITEM (N=40 participants)	MEAN	SD	Agreement
Evaluation of value/cost benefit with effectiveness	8	1.3	88.24%
Does the use of SM lead to behavioral change	7.97	1.36	82.35%
How effective is SM as a tool to mobilize policy change	7.21	1.27	82.35%
How are our usage metrics related to outcomes/goals	7.29	1.12	85.29%
Can SM reduce health disparities	7.32	1.47	85.29%
Reliable and local statistics on the demographics of users	7.03	1.64	70.59%
Where are the audiences for certain topics and how do we research them	7.12	1.61	64.71%
Best practices for documentation related to SM interactions	6.82	1.99	61.76%
Can SM reduce health disparities	7.32	1.47	85.29%
How is SM reshaping skills required for PH professionals	6.97	1.38	70.59%
How is SM reshaping the culture of PH	6.71	1.61	64.71%

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Booth, R., Donelle, L., Kothari, A., McMurray, J., Regan, S., McBride, S., Sobel, A., Foisey, L. Hall, J., & Fraser, R. (2015). Social media and public health: Exploring best-practices and future research directions [White Paper]. Western University, London, Canada: Authors.

Questions Addressed (Austin, TX)(#PhSmAustin):

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- What are the best practices with respect to the use of social media to improve community/population health?
- What are the best methods to measure and evaluate the use of social media to improve community and population health?
- How can social media be utilized to effectively address health disparities through engagement of diverse populations utilizing social media tools?

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Findings from TX (#PhSmAustin)

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- Theme or message: anticipate digital health and design public health strategy with social media
  - Establish theoretical frameworks - focus strategically on what you intend to do
  - Social media is more than a tool it is a strategy that reinforces digital health
- Create the right team; invest in training your staff with the right tools that are available
- Give significant consideration to sustainability, resources, and day-to-day operations (eg., policy, procedures, law)
- **C**reate **O**nce, **P**ost **E**verywhere (COPE)
- Know your target population and the social media tools that they use - if they even use and/or whether they have access to social media at all (ethnographic profiling)
- Adopt best practices for program evaluation/tools available to measure impact
- Value-propositions for 1) providers; 2) program recipients; and, 3) policy makers

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Barriers (#PhSmAustin)

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Best Practices (#PhSmAustin)

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Best Practices - *Technology* (#PhSmAustin)

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Next Steps / Future Directions

- White paper → Roadmap (this presentation is part of the process)
- Workshop on how to evaluate and observe outcomes, bring a project and provide assistance to design a study (social media evaluation workshop 101)
- How to reach disenfranchised populations
- Funding and sustainability
- Divide Roadmap into core elements: Policy, Theory/Evaluation, Patients, Technology, Structure

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Questions for overall consideration

(1) what are the practical uses of social media in public health and consumer engagement?

(2) what strategies exist and/or need to be developed to evaluate the effectiveness of social media on population health?

(3) how can the findings of the Roadmap be used to stimulate policy toward the use of social media technologies (and related big data and data analytics) to help inform policy, practice, and health promotion in North America?

http://tinyurl.com/phsmhimss

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Roundtable instructions

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STEPS: Satisfaction

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88% consensus that evaluation of cost-benefit of social media is important

Only 65% consensus that social media is "reshaping public health"

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Summary

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TEXAS TECH UNIVERSITY HEALTH SCIENCES CENTER

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附錄十三、Create Chronic Disease Service Using Secure Social Networks 演講簡報

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Conflict of Interest

Kimberlie Cerrone, MS, MBA, JD

Ms. Cerrone is the Founder and CEO of Tiatros Inc., a digital health company that delivers the technical solution that power the clinical examples in this presentation.

Kim Norman, MD

Dr. Norman is married to Kimberlie Cerrone and, therefore, has a household interest in Tiatros Inc.

Dr. Norman holds stock options in Tiatros Inc. as an Advisor to Tiatros Inc.

Dr. Norman is required to recuse himself in matters related to the use and procurement of the *Tiatros* solution pursuant to the University of California, San Francisco Medical Center's stringent Conflict of Interest provisions.

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Agenda

- Introduction to UCSF Young Adult & Family Center
- Mental health challenges and problems
- Current industry implementation of social networking technology
- How secure social networking transforms chronic disease care
- Selected use cases
- Plans for the future
- Key lessons learned
- Questions

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Learning Objectives

- Evaluate the impact of collaborative chronic disease care programs that use secure, social health networks on clinical outcomes and care provision costs
- Design chronic disease care programs that offer comprehensive services and use secure, social media style networks to enable truly collaborative care
- Design collaborative chronic disease care programs using secure, social health networks that integrate behavioral health services and the critical social determinants of health and wellness into chronic disease care
- Evaluate the impact of behavioral health and social determinants of health integration into chronic disease care programs on clinical outcomes and care provision costs
- Evaluate the impact of collaborative chronic disease care programs using secure, social health networks on healthcare disparity, specifically on improved patient access to chronic disease care services

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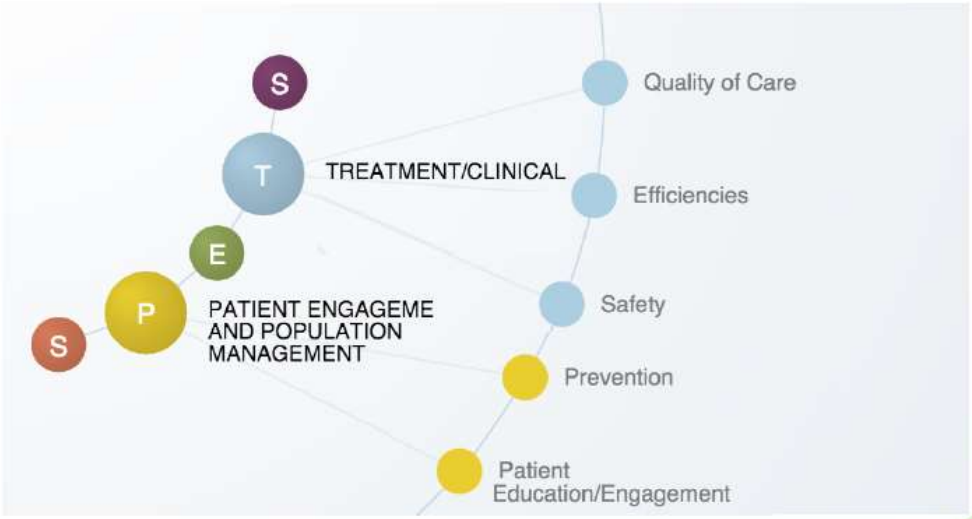
The Value of Health IT: STEPS



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The UCSF Young Adult and Family Center

UCSF

The Young Adult & Family Center

innovating mental healthcare through media & technology

1. Mission: de-stigmatize mental illness and improve mental health of adolescents, young adults and families
2. Staff of 20 provides clinical services, and create and study innovative care
3. Leverages technology for behavioral healthcare equality
4. Committed to advancing knowledge base of best clinical practices

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600 In-Person Patients Each Year...for Starters

1. Mental health clinics within UCSF's Langley Porter Psychiatric Hospital & Clinics
2. Embedded within UCSF's Department of Pediatrics and Young Adult Medicine clinics
3. Initiates school-based interventions for mental health in local high schools and colleges
4. Pioneers e-therapeutics as evidenced-based medical care

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Unique Problems and Challenges

1. **High Risk:** Lifetime risk of acquiring mental illness is 50%. Only 20% ever get help.
2. **Chronic:** Most mental illnesses are chronic conditions.
3. **Co-Morbid:** Increases vulnerability to other diseases. Frequently consequence of other chronic illnesses.
4. **Stigmatized:** Mental illness has a stigma other chronic diseases do not.
5. **Disconnected:** Behavioral health care process is often separate from all other medical care.

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Social Networks In the Business of Healthcare

1. General health literacy, prevention, and education for patients
2. Advertising and fundraising for customers and donors
3. Clinical trials and research recruitment
4. Social intelligence and customer relationship management

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The Power of Telemedicine – Still Early

1. Video conferencing, texting, emailing, and photo sharing in common use– often not integrated and not secure.
2. Collaboration between patients and providers is safer and more efficient with better outcomes.
3. Targeted scalable therapeutics bridge health disparities.

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Our View of Secure Social Networks

ACTS

- **A** Improves ACCESS to care
- **C** Increases the scope and depth of COLLABORATION by care teams
- **T** Supports digital therapeutics that are simultaneously TARGETED AND SCALABLE
- **S** Returns STORYTELLING to the practice of medicine

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Enabling Technology Selected Through Rigorous Approval Process

1. Selected on specific criteria: HIPAA-compliant, customizable access and communication rights, supports collaboration, treatment, education, and research on one platform
2. 2-year security audit by UCSF Information Technology Security Committee before approval for use
3. Available for sale by vendor number across all 5 University of California Medical Centers
4. YAFC continues to develop scalable therapeutics for deployment on *Tiatros*

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Patient ACCESS is a Challenge for My Private Practice at UCSF

1. The demand for direct mental health services taxes YAFC's small team.
2. Mental health services are especially needed in remote, rural, and underserved urban areas.
3. Many patients are unable or unwilling to visit a mental health clinic.
4. Mental health challenges and co-morbidities are often missed in chronic disease care.
5. Embedding mental health services in primary care and specialty clinics is not scalable.

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Social Networks Close the Patient and Information ACCESS Gap

1. 95% of patients and care teams are "strongly engaged" with the care plan.
2. Reduced stigma and improved patient sharing
3. 30% increase in daily sessions due to ease of micro-telemedicine sessions
4. 2400% improvement in compliance
5. Engagement of family members and non-medical caretakers

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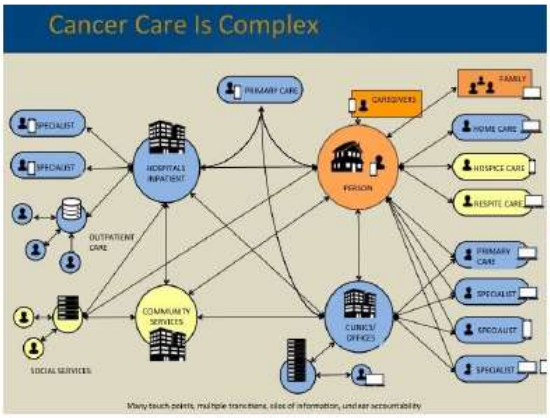
Oncologists at UC Davis Struggled with Care Team COLLABORATION



1. Integrating behavioral health services is a huge challenge.
2. Average care team is 26 providers at 12 different clinical locations.
3. Protocol adherence by patients and other clinicians is low.
4. Large population of foreign language speakers and migratory population
5. Struggle to incorporate behavioral health and social context of care

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Social Networks Expand the Definition of Care COLLABORATION

Press video to play or visit:
https://www.youtube.com/watch?v=ePUUsv2p5NE

1. Extract value from extended care teams with a new average of 44 participants, including non-clinical role types
2. 169% increase in the patient's care team participation.
3. Single, accountable care plan is physician-driven and patient-centric.
4. 67% of participating physicians are making telemedicine appointments.

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One More Example for COLLABORATION:

Caregivers on the Network Contribute to and Benefit from Social Network

1. New York State Dept. of Public Health + NYU + Alzheimer's Association are delivering supportive services to family caregivers of dementia patients.
2. Caregivers receive training in best practices.
3. Caregivers get support from medical team AND from other caregivers to prevent compassion fatigue and caregiver burnout.

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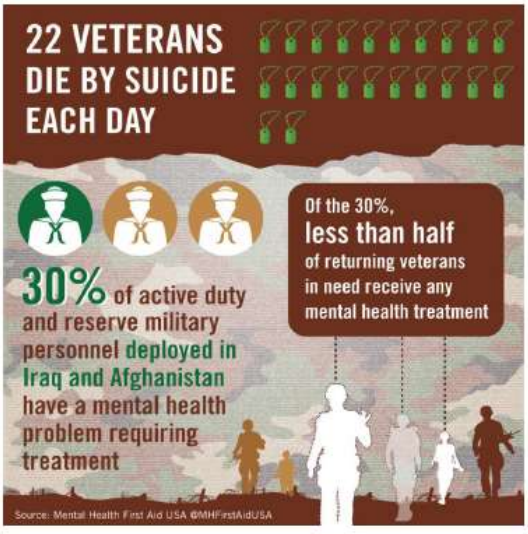
PTSD at VA: Not TARGETED AND SCALABLE



1. Nearly 100% of the VA's backlog is seeking mental health services.
2. Veterans and military face mental health stigma, despite 22 suicides/day.
3. Large numbers of veterans live outside of care coverage and struggle with multiple mental health issues.
4. 25% completion rate for in person psycho-educational classes, and similar rates for traditional computer assisted therapeutics.

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Next Mission Provides Care Options That are TARGETED AND SCALABLE

Press video to play or visit:
http://en.savefrom.net/1-how-to-download-youtube-video/

1. Meets paradoxical need for both privacy and community with the power of positive peer pressure.
2. 70% completion rate of course, with better outcomes for post traumatic growth than with in-person therapies.
3. Students earn college credit or promotion points bypassing stigma.
4. Students strongly endorse power of storytelling and interaction in healing and personal growth.

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Modern Medicine Has Lost Its Best Diagnostic Tool: STORYTELLING

IBM Watson Health

1. Technological limitations restrict big data analysis to structured data.
2. Analytics engines cannot directly access PHI due to HIPAA.
3. Check lists don't tell stories, stories tell stories.
4. Information is most useful when provided in a context.
5. There is often too much data to be usefully analyzed and applied to population health in time.

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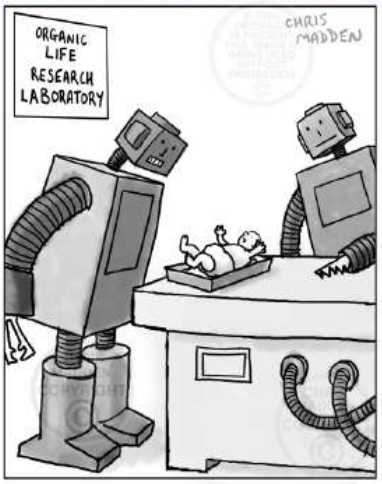
Artificial Intelligence makes STORYTELLING Scalable



"We'll know whether to treat it with any special moral consideration when we see if it passes the Turing test."

1. Secure social networks can re-create the basis of the doctor-patient relationship, which is based in storytelling.
2. Natural language analytics can capture clinical insights that are timely and relevant.
3. Ecological Momentary Assessments (EMAs) that incorporate storytelling will yield actionable insights for real-time Ecological Momentary Interventions (EMIs).
4. Clinical insights can be aggregated into useful health intelligence for patient care and population health.

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Lessons Learned Using Secure Social Networks in Chronic Disease

1. **Doctor Driven, Patient Centric:** Social networks must allow clinicians to be the key drivers of care while keeping the patient at the center of care.
2. **Broadly Adopted, Deeply Useful:** Social networks must be flexible enough for a diverse care team.
3. **Social Power is Real:** Patients bonded by purpose and teamwork value facilitated discussions, but otherwise need little from professionals.
4. **Workflows:** It is not enough for a social network to connect all of the members of the care team. The social network must have the tools for them to easily execute.
5. **Physicians are Coaches:** Social networks can scale the physician's ability to listen and advise patients and families across their lifetime plan of care.

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Our Next Steps in Creating Effective Care, Anytime, Anywhere

1. **Artificial Intelligence Assessments:** YAFC is using the Personality Insights tool to study outcomes and identify which personality traits may be protective against PTSD and/or more responsive to the Next Mission intervention.

2. **New Interventions:** Methods for teaching stress and resiliency in workforce, high school, and college settings for improved health and wellness are in progress.

3. **Scale:** YAFC anticipates 100,000 students will participate in *Next Mission* courses. To scale, YAFC will begin training graduates of *Next Mission* courses to lead future iterations of the course. This will scale the 'social' in social network offerings.

4. **Courses:** A new course specific for 'Woman Warriors' will be deployed Q1 2016, and a general course on trauma and post traumatic course will be deployed Q4 2016.

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What We've Covered Today

- Introduction to UCSF Young Adult & Family Center
- Mental health challenges and problems
- Current industry implementation of social networking technology
- How secure social networking transforms chronic disease care
- Selected use cases
- Plans for the future
- Key lessons learned

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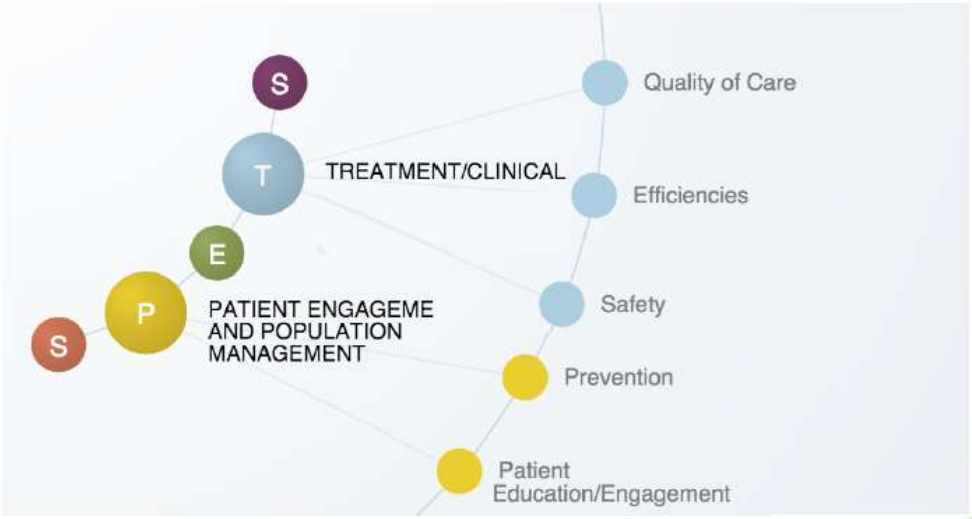
An Summary of How Benefits Were Realized for the Value of Health IT



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Questions?

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Conference & Exhibition
FEB 29 – MAR 4, 2016 | LAS VEGAS
TRANSFORMING HEALTH THROUGH IT

Palliative Care: Using the EHR for Patient Care

March 1, 2016

Lynn Hollar, RN, Senior Clinical Analyst
Suzanne Parra, RN, Data Architect

ASCENSION HEALTH

DISCLAIMER: The views and opinions expressed in this presentation are those of the author and do not necessarily represent official policy or position of HIMSS.

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Conflict of Interest

Lynn Hollar, RN
Suzanne Parra, RN
Have no real or apparent conflicts of interest to report.

Agenda

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- Learning Objectives
- Project Overview
- Ascension – University of Pennsylvania partnership
- Clinical Design
- EHR Utilization – Technical Build
- Lessons Learned

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Learning Objectives

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1. Describe the details of the Randomized Evaluation of Default Access to Palliative Services (REDAPS) NIH clinical trial
2. Discuss the use of the EHR to identify patients and document outcomes in clinician workflows with technical EHR design and build
3. Summarize lessons learned, project challenges and mitigation strategies utilized for project success

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An Introduction of How Benefits Were Realized for the Value of Health IT

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Satisfaction: Identification of patients without increasing documentation burden. Streamlined documentation for palliative care team.

Treatment/Clinical: Rule to automate palliative care consult order.

Electronic Information/Data: Patient identification criteria and outcomes.

Patient Engagement and Population Management: Standardized identification and documentation leads to measureable outcomes for holistic approach to patient care.

Savings: Total cost per palliative care patient

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http://www.himss.org/ValueSuite

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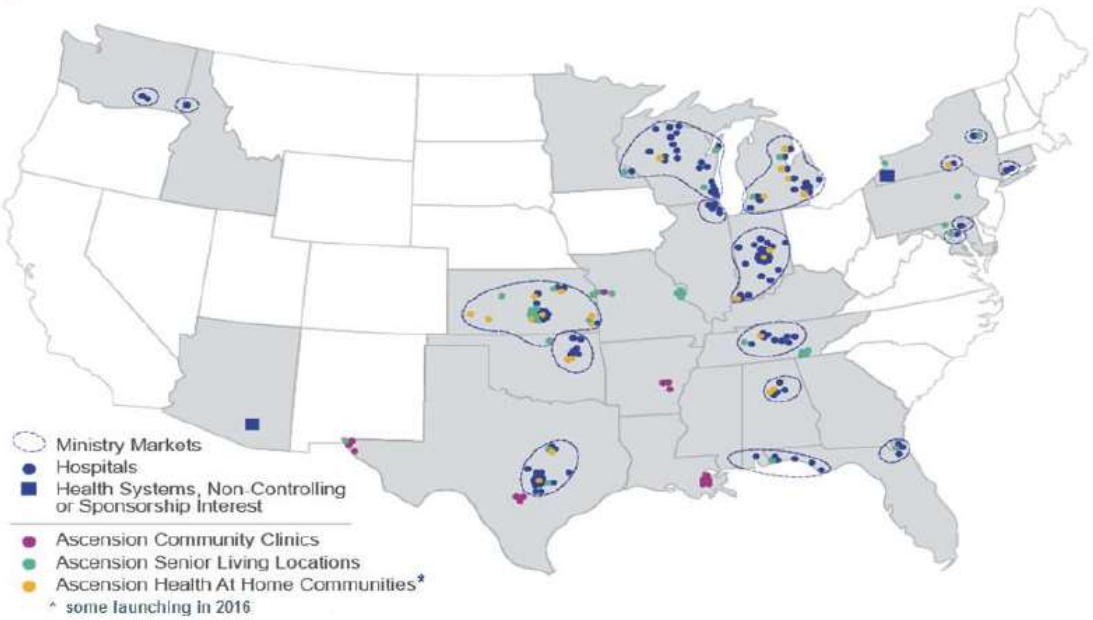

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Palliative Care Vision Statement

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A society in which every person living with or affected by a chronic or life threatening condition receives compassionate, holistic, coordinated care.

This will include relief of pain, suffering and other symptoms from the time of diagnosis throughout the process of living and dying.

Such excellent care will be provided according to need, respecting the values and goals of individuals, their families and other loved ones.

It will assist them to live fully in community and will support survivors in their bereavement. Through such care, we believe that God's healing love is revealed.

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Project Overview

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Development of EHR content to support delivery of palliative care

- Identification of patients eligible for palliative care consults
- Notification to providers of patient's eligibility
- Automation of palliative care consult order
- Documentation to support palliative care
  - Provider consult and progress notes
  - Chaplain services
  - Social worker / case managers
- Consult tracking tool
- Interdisciplinary plan of care
- Patient notifications to palliative care team

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A Partnership is Formed

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- University of Pennsylvania
  - Dr. Scott Halpern, MD, PhD, M. Bioethics
    - Associate Professor of Medicine, Epidemiology, Medical Ethics, and Health Policy
    - REDAPS Lead Investigator

- Ascension
  - Sarah Hill, MA, PhD
    - Program Manager, Palliative Care
  - Clinical Information Systems Team
  - Care Excellence Data Analytics Team
  - 11 Facilities at 7 Health Ministries

This innovative clinical trial will be conducted at 11 Ascension health hospitals over a 3-year study period (October 2015 – September 2018) and will provide the first experimental evidence of the effectiveness of inpatient palliative care consultative services in real-world settings.

- NIH Grant #4UH3AG050311-02

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U Penn REDAPS Hypothesis

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Improved patient-centered outcomes can be achieved without higher costs by simply changing the default option for palliative care consultation from an opt-in to an opt-out system for patients with life-limiting illnesses

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Aims of the REDAPS

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- UH2 Aim 1: Charter a data coordinating center and validate data-transfer protocols at participating hospitals
- UH2 Aim 2: Develop patient identification and automatic ordering processes in the electronic health records
- UH2 Aim 3: Validate the capture of all proposed outcomes in a sample of de-identified patients
- UH2 Aim 4: Validate methods for tracking adherence to electronically generated palliative care orders
- UH2 Aim 5: Establish mechanisms and materials for notifying patients and clinicians about the research study
- UH2 Aim 6: Complete regulatory compliance, including Internal Review Board (IRB) approval, trial registry, and Data Safety Monitoring Board (DSMB) assembly

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Stepped Wedge, Cluster Design

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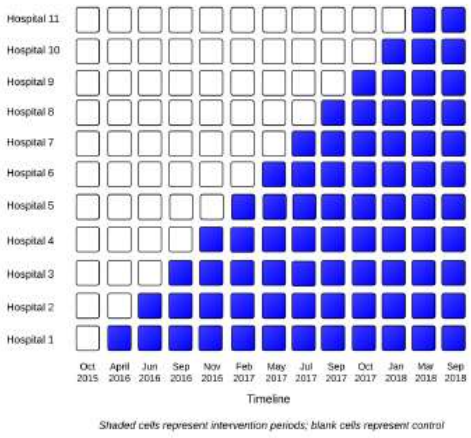

Shaded cells represent intervention periods; blank cells represent control

Intervention:

- default palliative care consultation order on hospital day 2 (with physician opt-out option)

Randomization:

- time that hospitals adopt

Primary outcome:

- composite of hospital length of stay and mortality

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Eligibility criteria

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- Age greater than 45 years **AND**
- One or more of the following conditions present on admission:

Primary	Secondary
1. Chronic obstructive pulmonary disease (COPD) AND:	Long-term oxygen therapy dependence OR Hospitalized 2 or more times in past 12 months
2. Dementia AND:	Has surgical feeding tube OR Admitted from a long-term care facility OR Hospitalized 2 or more times in past 12 months
3. End-stage renal disease (ESRD) AND:	Chronic hemodialysis OR Peritoneal dialysis

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Outcomes

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- Patient characteristics: 21 items
  - All from EHR
  - Gender, Age, Race, Length of Stay, etc.
- Hospital characteristics: 5 items
  - All from Care Excellence data warehouse
  - Number of beds, number of ICU beds, etc.
- Inpatient Palliative Care Services (IPCS) characteristics: 5 items
  - Program survey
  - Longevity of program, number of consults per year, etc.
- Outcomes Measures: 28 items
  - All from EHR
  - Process measures: 14 items
    - IPCS team members, documentation of pain, documentation of goals of care
  - Clinical measures: 14 items
    - Pain scores each day, transfer to ICU, hospital mortality, etc.
- Economic Measures: 5 items
  - All from revenue cycle
  - Total cost of stay, actual costs, etc.

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Clinical Workflow

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- Patient eligibility
  - Clinical documentation for secondary criteria, if needed
- Order automation
  - Time for provider review
  - Reason for order removal
  - Approval by Medical Executive Committee
  - Ascension review with legal
- Notification to palliative care team
- Documentation by palliative care team and supporting services
  - Pulling in pertinent completed documentation from other clinical documentation
- Tracking palliative care patients
- Interdisciplinary plan of care
- Alerts to palliative care team

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Clinical Design

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Framework:

- On site clinical workflow review
- Patient care model
- Clinical Governance Committee
  - Clinical design of EHR
  - Joint Commission, Center to Advance Palliative Care (CAPC), Measuring What Matters
  - Local and national patient care goals
- Use of this project to benefit Ascension palliative care providers
  - Workflow standardization
  - Knowledge sharing
  - Pilot sites
  - Support team collaborations

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Connecting what matters

Project Scope

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Rules
- Eligibility Criteria
- Notifications
- Automation of consult order

Documentation
- Secondary eligibility criteria
- Outcomes
- Supporting services documentation

Reports & Data Extraction
- Validation and audit
- De-identified outcome data files send to uPenn
- Attach study ID

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Default palliative care standing order

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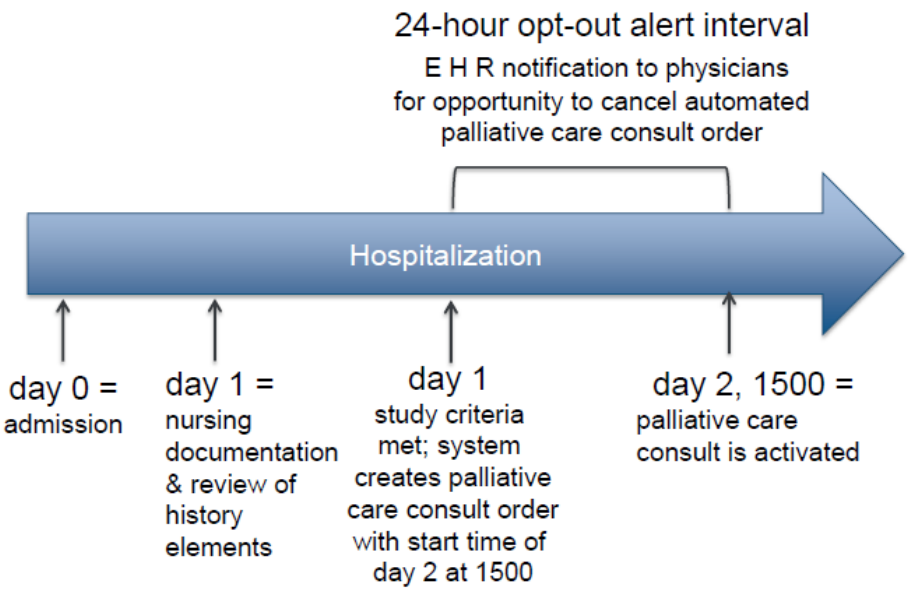

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Eligibility Criteria

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Over 45 years old → Diagnosis / Problem Table: COPD, Dementia, ESRD → Admissions Data: 2 admissions in the last year →

Secondary criteria documentation → Orders: no prior PC consult order for this encounter

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Notification to RN on Open Chart

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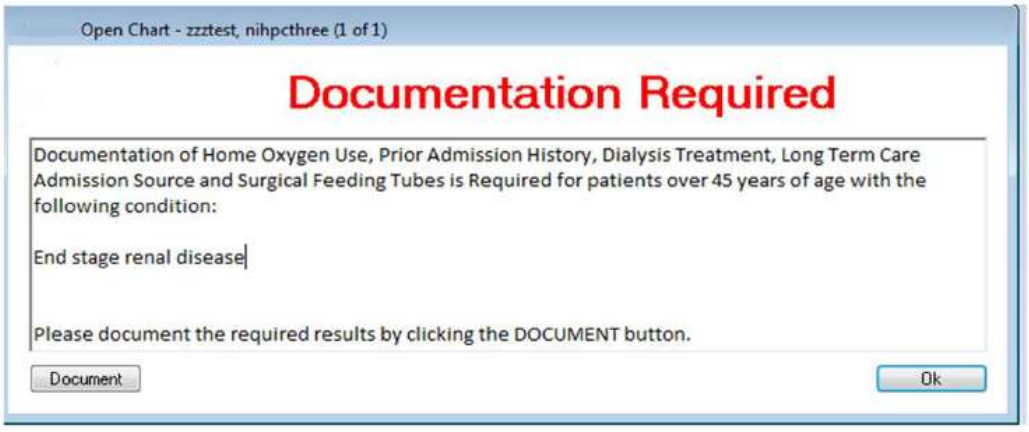

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Secondary Eligibility Criteria

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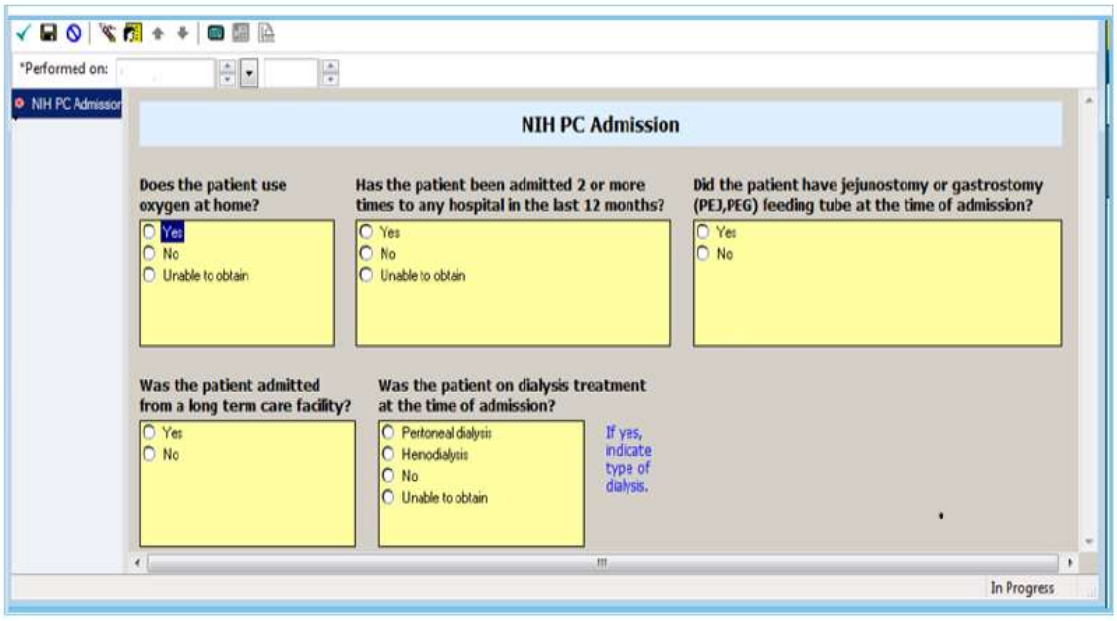

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Automation of Order

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Consult Palliative Care Order:

- Ordering provider is most recent attending of record
- Notification presented to identified providers for 24 hours before becoming active order
- Providers have opportunity to cancel consult order
- If provider cancels palliative care consult order, must enter a reason
- Standard list of reasons presented with option to enter free text "other"

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Notification of Consult Order

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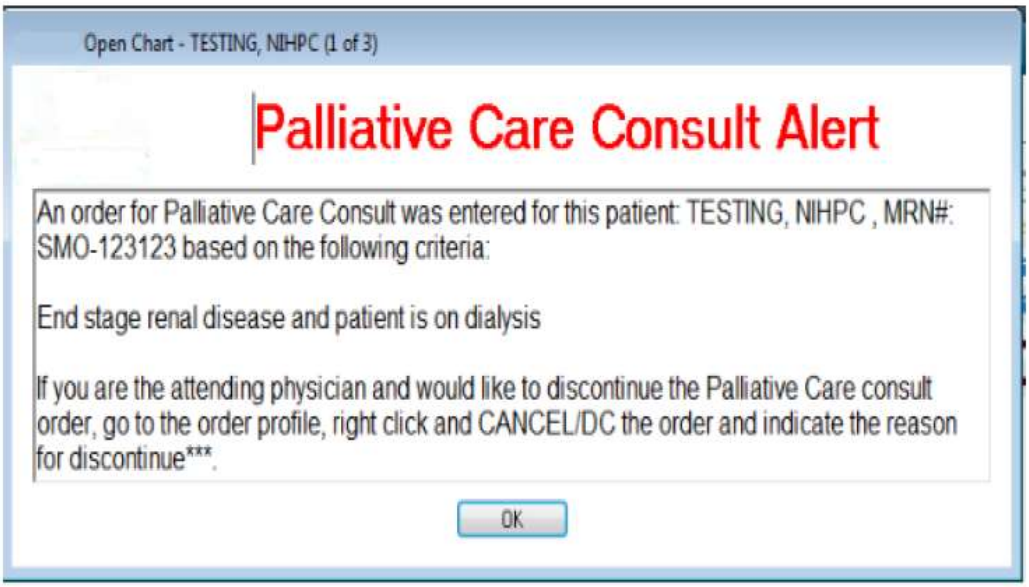

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Reason for order cancellation

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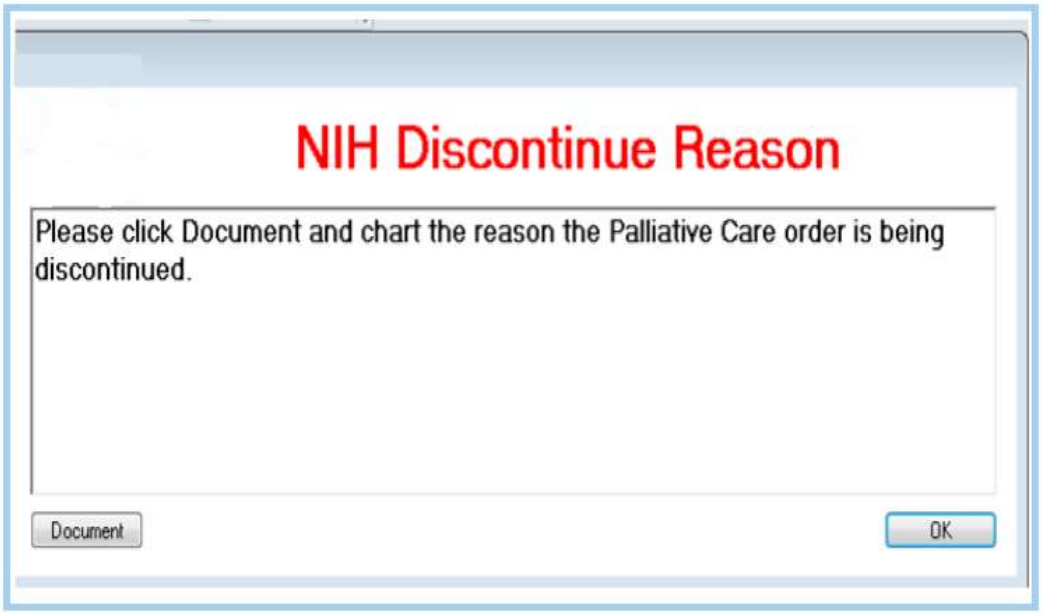

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Order cancellation reasons

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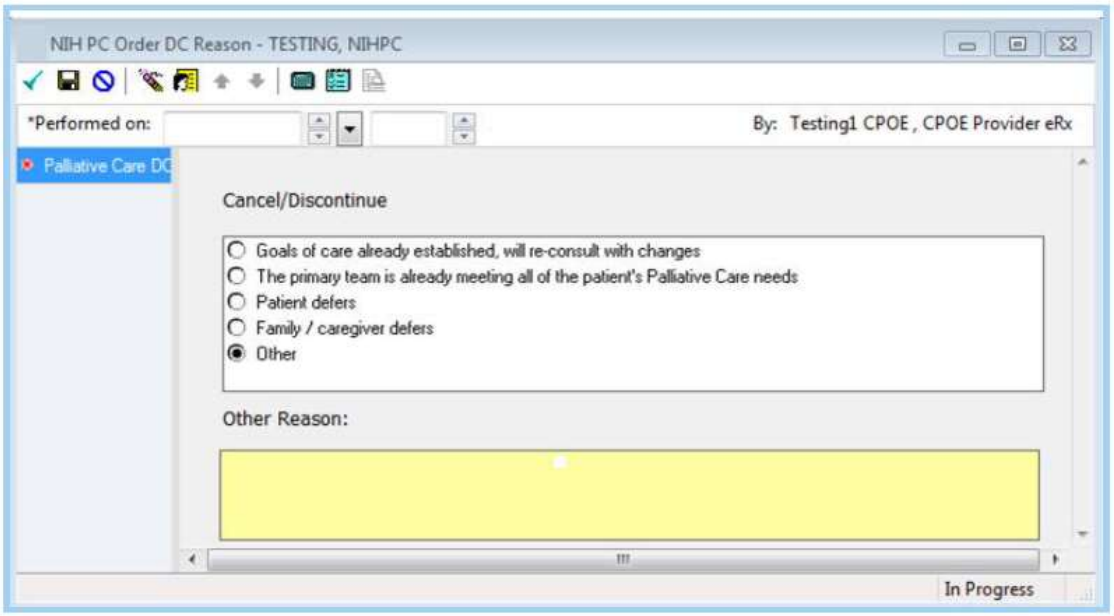

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Palliative Care Team Documentation

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Consult note details for study outcomes

Reason for referral
Advance directive details
Code status orders
Health care proxy/power of attorney
Problem List
Pain & other symptom assessments
Issues discussed with patient and/or family/caregiver
Pros/cons of anticipated treatment; accept, decline, or defer
Palliative care goals
Palliative care assessments : ESAS,PPS,ECOG
ADL Index score
Education, counseling, follow-up
Participants in family/caregiver meetings
Counseling summary, duration

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Tracking of Palliative Care patients and alerts

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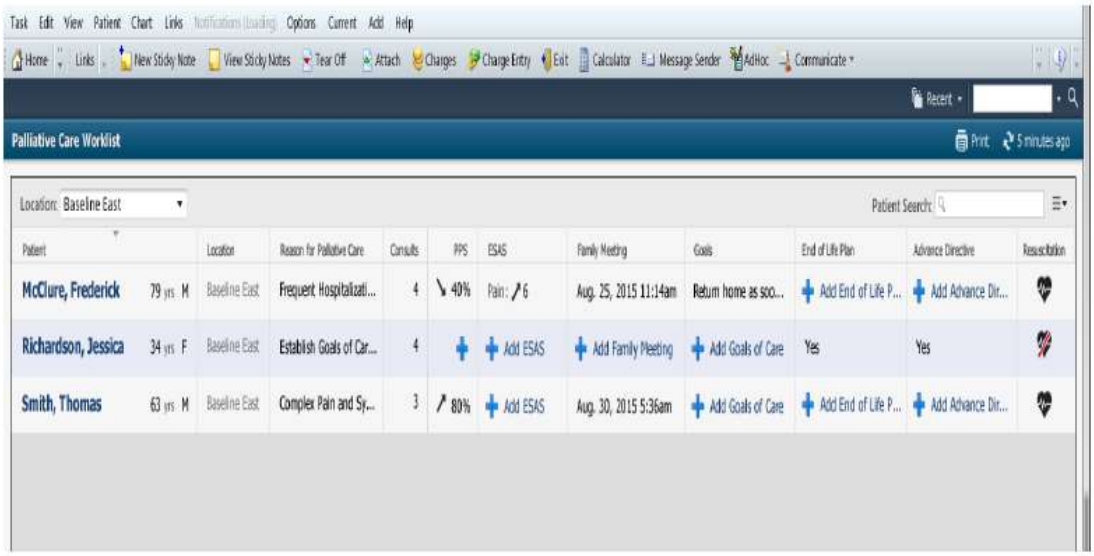

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Outcomes data extract files

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Patient Characteristics:

- Gender
- Age
- Race
- Ethnicity
- Marital status
- Insurance status
- BMI (height, weight)
- Zip code
- Acute hospitalizations in last year
- Date/time of admission to hospital
- Source of hospital admission
- Place of first hospital admission
- ICU length of stay
- Hospital length of stay
- Hospital readmission dates
- Prior palliative care consultation
- ED visits, not admitted
- Advance Directive (AD)
- Physician Orders for Life-Sustaining Treatment (POLST)

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Outcomes data extract files

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Outcome measures:

- Pain scores for each day of hospitalization
- Dialysis order
- Mechanical ventilation
- CPR
- Surgical feeding tube placement
- Transfer to ICU
- Hospital mortality
- ICU mortality
- Transfer to inpatient hospice
- Discharge disposition code
- Discharge planning orders
- Code status
- Comfort care order set

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Lessons Learned

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- Keep your eye on the prize
- Clinically led provided strong support and adoption
- Critical to have clinician support for research related questions
- Multiple stakeholders input
- Standardized design across multiple sites
- Challenges with import / localization of palliative care provider documentation
- Education on complete workflow
- Creating value metrics with clinical input

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A Summary of How Benefits Were Realized for the Value of Health IT

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Satisfaction: Identification of patients meeting eligibility criteria utilizing documented information. Standardized documentation for palliative care team for data extraction.

Treatment/Clinical: Palliative care consult orders have increased. <will use statistics not available right now>

Electronic Information/Data: Standardized patient outcomes to support value metrics.

Patient Engagement and Population Management: Provider and patient education for IPCS. Carrying palliative care goals across continuum of care.

Savings: Total cost per palliative care patient

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Questions

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ASCENSION Information Services

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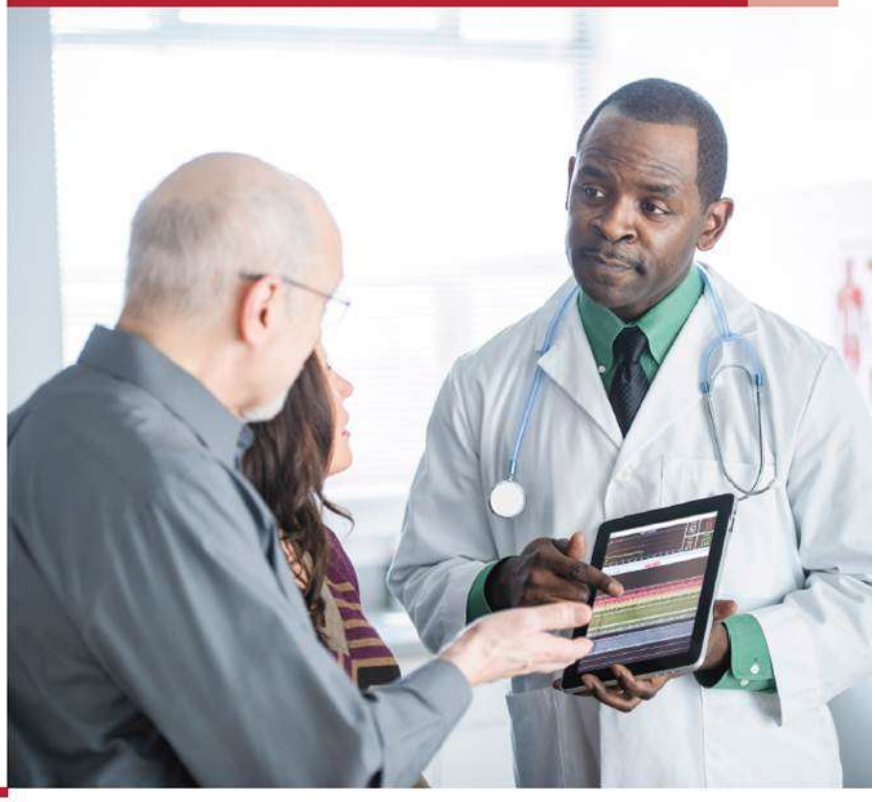
附錄十五、PwC 報告「2016 健康產業議題」

附錄十六、Pwc 報告「健康照護服務的未來」

Healthcare delivery of the future:

How digital technology can bridge time and distance between clinicians and consumers



Health Research Institute
November 2014

At a glance

Industry leaders across health plans, hospitals and the pharmaceutical industry all see major shifts in how care is being delivered. Digital technology bridges the gaps between consumers and clinicians.

pwc