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# Connected Health in Cancer: Future State

July 9, 2015



# Overview

## Identifying the Opportunity

- ❑ *Planning meeting San Diego, June 13, 2014. General topic was “Cancer Communication in the Digital Era: Opportunities & Challenges”*
- ❑ *First focused workshop held in Boston, December 11, 2014: “Engaging Patients with Connected Health Technologies”*
- ❑ *Second focused workshop San Francisco, March 26, 2015. “The Personal Health Data Revolution, Connected Health in Cancer”*

## Vision and Recommendations for the Future

- ❑ *Next meeting: Chicago, July 9, 2015*
- ❑ *Objective 1: Review and develop agreement on a reasonably attainable future state.*
- ❑ *Objective 2: Identify concrete recommendations for achieving future state for the benefit of patients and the public.*

# Identifying the Opportunity



# Fractures in Cancer Care



## Primary Prevention:

e.g., “**70%** of smokers visit healthcare, but few receive adequate follow-up.” Fiore (2013)

## Survivorship

Communication problems have devastating consequences for cancer survivors. (IOM, 2005)

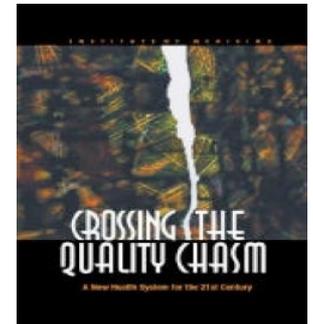
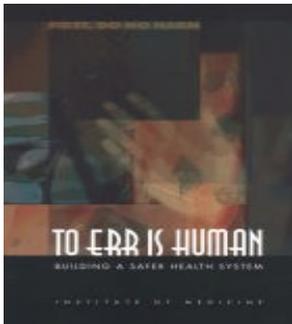


## Secondary Prevention:

e.g., 56% of late stage cervical cancer cases in community hospital had not been screened. (Zapka et al, 2010)

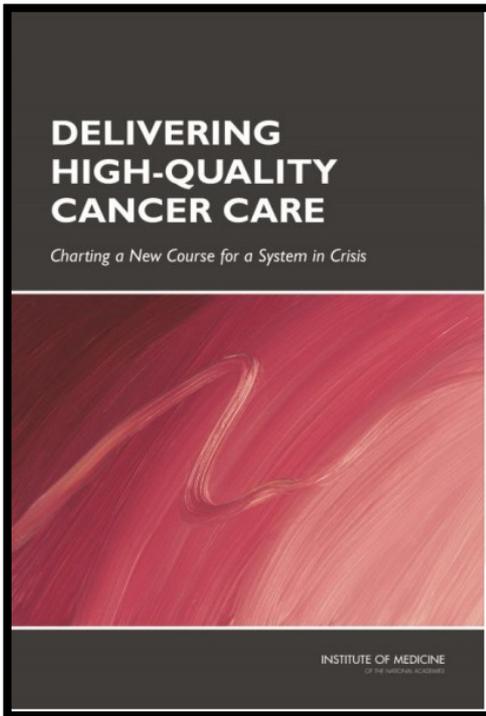
## Treatment Adherence:

e.g., “**63%** of teens & young adults do not adhere to cancer Rx regimens,” Kondryn et al. (*Lancet Onc*, 2011)





# Stresses in Oncology



<http://www.iom.edu/Reports/2013/Delivering-High-Quality-Cancer-Care-Charting-a-New-Course-for-a-System-in-Crisis.aspx>

Stresses that will likely exacerbate fractures, obstruct progress:

- ❑ Aging demographics
- ❑ Increasing incidence overall
- ❑ Complexity in oncology care
- ❑ Increasing number of survivors (18 million by 2022)
- ❑ Shrinking work force
- ❑ Rise in treatment costs



# The Healthcare Communication Revolution: Bridging Disconnects



## I. Make Effective Communications An Organizational Priority to Protect the Safety of Patients



- ❑ Fix patient handoffs (50% of errors).
- ❑ Provide asynchronous channels (to ensure reliable communication).
- ❑ Use smart scheduling, issue routing (as preemptive error control).
- ❑ Offer secure messaging (to preserve privacy and confidentiality).
- ❑ Leverage eHealth, telemedicine apps (to move care to patient).



# Unleashing the "Power of Connectivity"\* in Oncology



## UNLEASHING THE POWER OF CONNECTIVITY IN HEALTH CARE.

### A health care crisis of communication.

Over the last 50 years medical science has advanced exponentially. Yet the ability of caregivers to access and apply both science and complete patient information is

### A health care crisis of communication.

Over the last 50 years medical science has advanced exponentially. Yet the ability of caregivers to access and apply both science and complete patient information is repeatedly impeded by the paper system that contains it. Patient data typically sits in static, inert and functionally truncated paper records. Paper medical records are often incomplete and out of date. Sharing evidence, research findings and simple patient information is usually an arduous, inconsistent and often inaccurate task when paper records produce the data.

be self-evident. Full and secure access to data will give physicians visibility into patient status and health history, improving diagnosis and delivery of care. Information retrieval that took days, will take minutes. Or less.

The future system should open unprecedented new diagnostic tools. Physicians should be able to instantly share imaging and test results with colleagues across the hall or across the country. Patients should have instant access to their own records and be able to send, transmit or carry it from one provider to another. Secure, computerized data sharing can reduce errors, redundancies, lost information and costs.

### A culture of continuous learning and connected care.

Today, we're a mobile and connected society in everything except healthcare. At Kaiser Permanente we believe in a future healthcare system where patient information is accessible, instantaneous, constantly

improving, secure and accurate. And we've invested \$4 billion to build and install a system that we believe this generation of patients and caregivers needs.

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20,000 secure e-messages between clinicians and patients every single day.

Maximizing information for the clinician means optimizing care for the patient. Done well, we believe a computerized care support system can help both to restore and enhance each physician's original mission. The right system provides more time with patients, better information about care and less time with traditional paperwork. The right system also needs to be focused on the patient's need for affordable, well informed, customized and compassionate care. We believe new computer systems are needed to lead our nation's health care reform agenda into the 21st century. For us, right now, it's a work in progress and progress is being made.

Get more information at [kp.org/future](http://kp.org/future)



## Meaningful Use Incentives:

- Safety, effectiveness
- Patient engagement
- Continuity of care
- Population health
- Private, secure

\*Kaiser Permanente full page ad in "Washington Post," 2008



# Workshop 1: Engaging Patients with Connected Health Technologies

*Cambridge, MA  
December 11, 2014*



❑ Connected healthcare led to **50%** drop in gen readmissions, **69%** drop in BP. (Kvedar)

❑ Wrist-worn devices showed **94%** rate for accurate convulsive seizure control. (Piccard)



❑ Connected infrastructures are needed for team care; ecosystem of apps needed to enable CDS & data sharing. (Mandl)

❑ Precision medicine is predicated on the integration of research, care, and data. (Kibbe)

❑ Improving access is needed to remove disparities. (Gibbons)



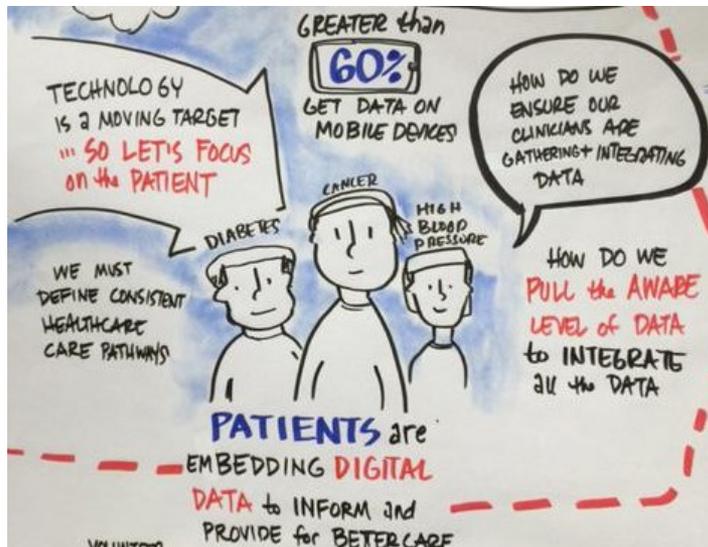
# Workshop 2: The Personal Health Data Revolution, Connected Health, & Cancer

San Francisco, CA  
March 26, 2015



The Personal Health Data Revolution,  
Connected Health, and Cancer

March 26, 2015 • San Francisco, CA  
Hyatt Regency San Francisco  
[#cHealth4Cancer](#)



- ❑ Open data, patient wisdom and public involvement in research (Friend)
- ❑ Patient-centered, data-driven, coordinated, & continuous (Middleton)
- ❑ The *Internet of things* & mobile leave digital traces of everyday life. (Patrick)
- ❑ Use connected data to improve quality, and support decisions in oncology. (Schilsky)
- ❑ Connected care in cancer: **6 X Pap, 6 X Mam, 10 X CRC & 100% equity.** (Shah)

# **Vision and Recommendations for the Future**



# The Connected Cancer Patient: Vision and Recommendations for the Future

- ❑ **Objective 1: Review, discuss and agree on a reasonably attainable future state.**
- ❑ **Objective 2: Identify concrete recommendations for achieving future state that benefits patients and the public.**

From the ASCO Blueprint





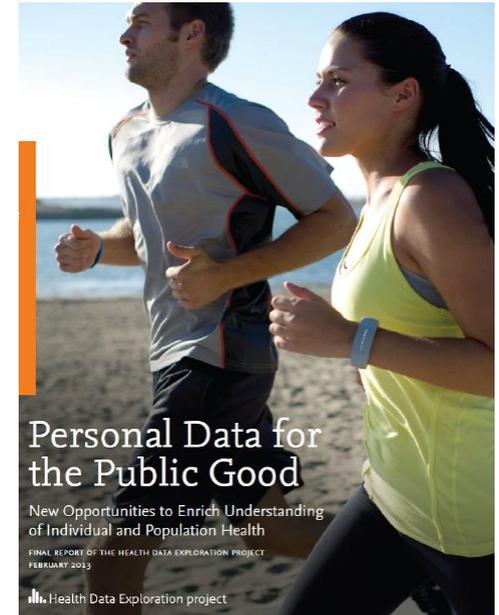
# Four Primary Dimensions to Consider





# Personal Health Information & Data Sharing

- ❑ Personal access to physiologic and clinical data contributes to a culture of health and better self-management.
- ❑ Personal health data are massively generated and collected from devices attached to and within the body under control of the individual.
- ❑ Patients are secure with informed consent in sharing data with designated health care professionals and researchers.



Pioneer **a new model for doing science** that emphasizes **engaged participants, responsible data sharing, and privacy protection.**



# Person & Family-Centered Care

- ❑ Healthcare has transformed to a fully patient and family-centric system with patient and family values as core components to any care plan for cancer.
- ❑ Patients report feeling more “connected” to their cancer care providers; that help is just a mouse click or smartphone call away, and that most providers have equal access to vital life-saving information available in their records.





# Devices, Sensors, & Apps

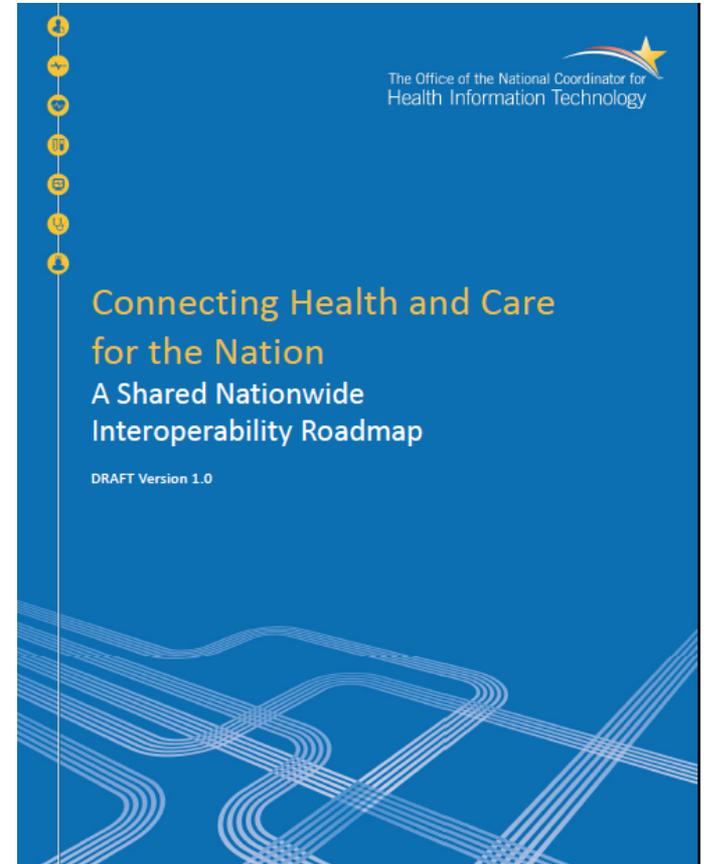
- ❑ Mobile computing reaches 85% of the US population by 2020 with broad adoption across race, ethnicity, region, or literacy level.
- ❑ Just-in-time, adaptive interventions become ubiquitous and accessible through a vibrant ecosystem of evidence-based, interoperable apps.





# National Health Information Infrastructure

- ❑ **ONC reaches its 2020 goal of an interoperable infrastructure for data flow controlled by individuals.**
- ❑ **Cancer prevention, control, treatment, and survivorship improve, with greater connectivity and fewer discontinuities.**





# On Behalf of Patients, Families, and the Public:



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## Janet Freeman-Daily

@JFreemanDaily

Writer, speaker, science geek, lung cancer patient/advocate. #LCSM Chat co-mod, 2014 #MedX ePatient Scholar. MIT & Caltech alum, retired aerospace engineer.

Seattle area · [grayconnections.net](http://grayconnections.net)



Followed by David K Ahern, Kathy Kim, Regina Holliday and 10 others.



Janet Freeman-Daily @JFreemanDaily · 12h

[@womenofteal](#) Thanks for the link! I hadn't seen it. #lcsm #CancerFilm

[Details](#)



Janet Freeman-Daily @JFreemanDaily · 22h

What's the best part of National Cancer Survivors Day?  
[grayconnections.net/2015/06/08/wha...](http://grayconnections.net/2015/06/08/wha...)

[Details](#)

*Thank You!*

# Commentary: Don Berwick



Donald M. Berwick, MD, MPP,  
President Emeritus and Senior  
Fellow, Institute for Healthcare  
Improvement

