Achieving the Quadruple Aim in Cancer Care

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Cancer as an Emblematic Use Case

Weak Links in Cancer Subject to Strain
Lead to Cracks in the System of Care and Prevention

Survivorship
Communication errors blamed for missed recurrence, missed new cancers, and secondary effects (IOM Lost in Transition, 2005)

Symptom Management
Two month survivor benefit for late stage lung cancer patients with connected “clinician reports” (Gustafson, et al 2009)

Primary Prevention
Loss to Follow-up:
e.g., “70% smokers visit healthcare, but few receive adequate follow-up,”
Michael Fiore (2013)

Secondary Prevention:
Failure to Screen
e.g., 56% of late stage cervical cancer cases in community hospital failed to screen (Taplin)

Secondary Prevention:
Loss to Follow-up
e.g., 7% labs, 8% image loss for abnormal findings at 4 weeks (Smith et al, 2013)

Treatment: Adherence
Kondryn et al. (Lancet Onc, 2011):
63% of teens & young adults struggle with adherence to cancer Rx regimens.
Lead to Unequal Burden in Weak Systems

Will Worsen with Predicted Stresses on System

Stresses on Oncology Care

- Aging demographics
- Increasing chronic disease
- Complexity in care
- Increase in survivors
- Shrinking work force
- Rise in treatment costs

Bankrupting Health Systems & Failing Patients, Care Givers, and Clinical Teams

Economists at the University of Chicago estimate that a 1% reduction in cancer deaths would be worth over $400 billion.
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Hill Harper, JD  
*Cancer Survivor, Actor, and Best-Selling Author*

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https://prescancerpanel.cancer.gov/
“There is now a worldwide collection of efforts, which is showing how much we can leverage knowledge through [health information technology] so that literally the best knowledge in the world can reach everyone in the world, at low cost and at no delay.”

-July 9, 2015 to President’s Cancer Panel
Connected health is the use of technology to facilitate the efficient and effective collection, flow, and use of health information.
Report, November 2016: *Improving Cancer-Related Outcomes with Connected Health*

Source: Improving Cancer-Related Outcomes with Connected Health: A Report to the President of the United States from the President’s Cancer Panel. Bethesda (MD): President’s Cancer Panel; 2016.
Recommendations

- Enable Interoperability
- Support the Oncology Workforce
- Facilitate Data Sharing and Integration
- Enable Individuals to Manage and Participate in Their Care
- Ensure Adequate Internet Access
- Conduct High-Priority Research to Advance Connected Health
High Priority Areas of Research

1. Improve understanding of how connected health can enable effective teamwork in healthcare.
High Priority Areas of Research

2. Identify strategies to enhance individuals’ engagement in their healthcare.
High Priority Areas of Research

3. Develop approaches for using data from connected devices in meaningful ways to enhance clinical care.

- Patient Generated Health Data (PGHD)
- Internet of Things (IOT) sensing
- Electronic Health Records (EHRs)
- Learning Healthcare System (LHS)
Look for Funding Opportunities

https://healthcaredelivery.cancer.gov/