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Connected Health

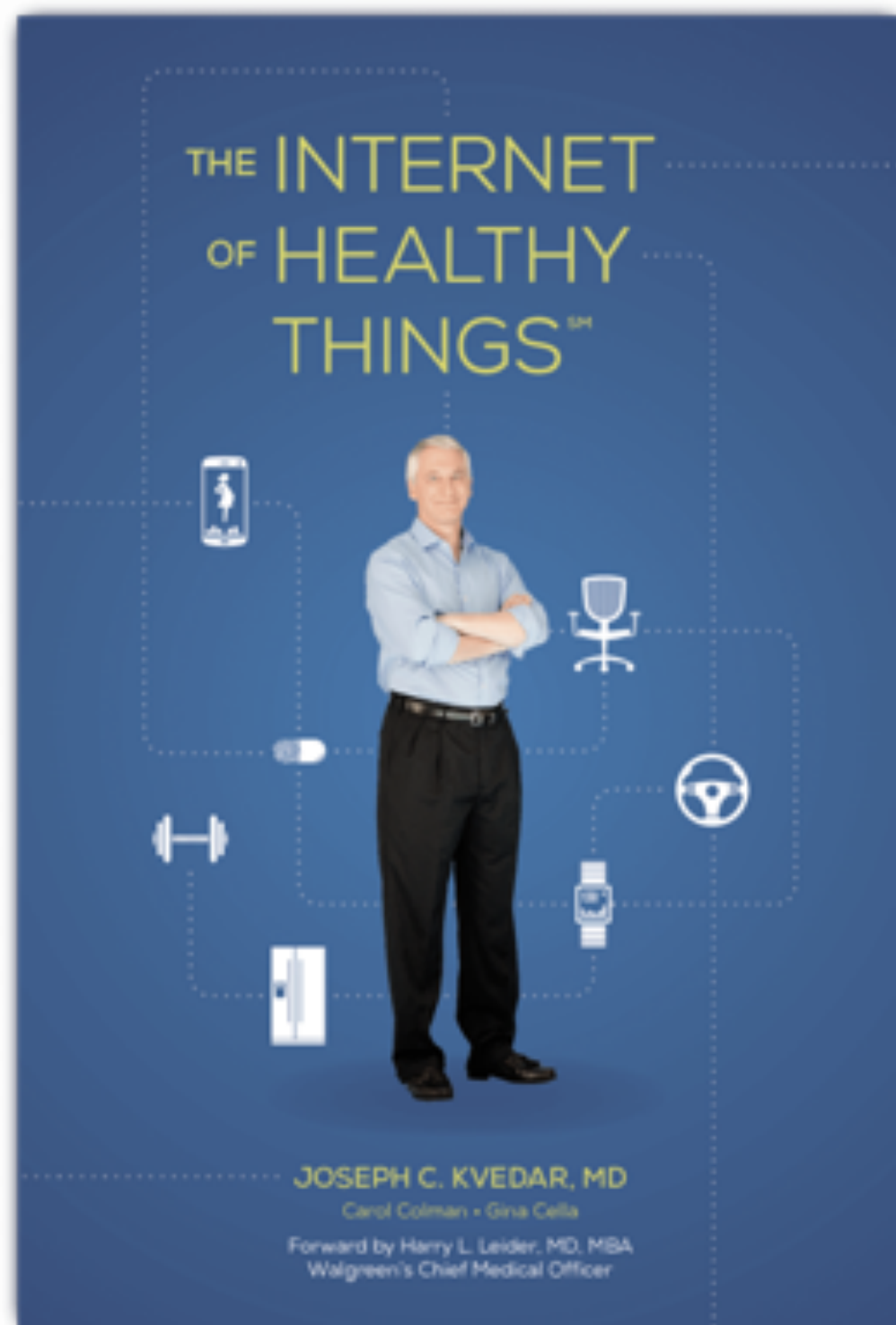
Improving Cancer-Related Outcomes with Connected Health



Connected health is the use of technology to facilitate the efficient and effective collection, flow, and use of health information.



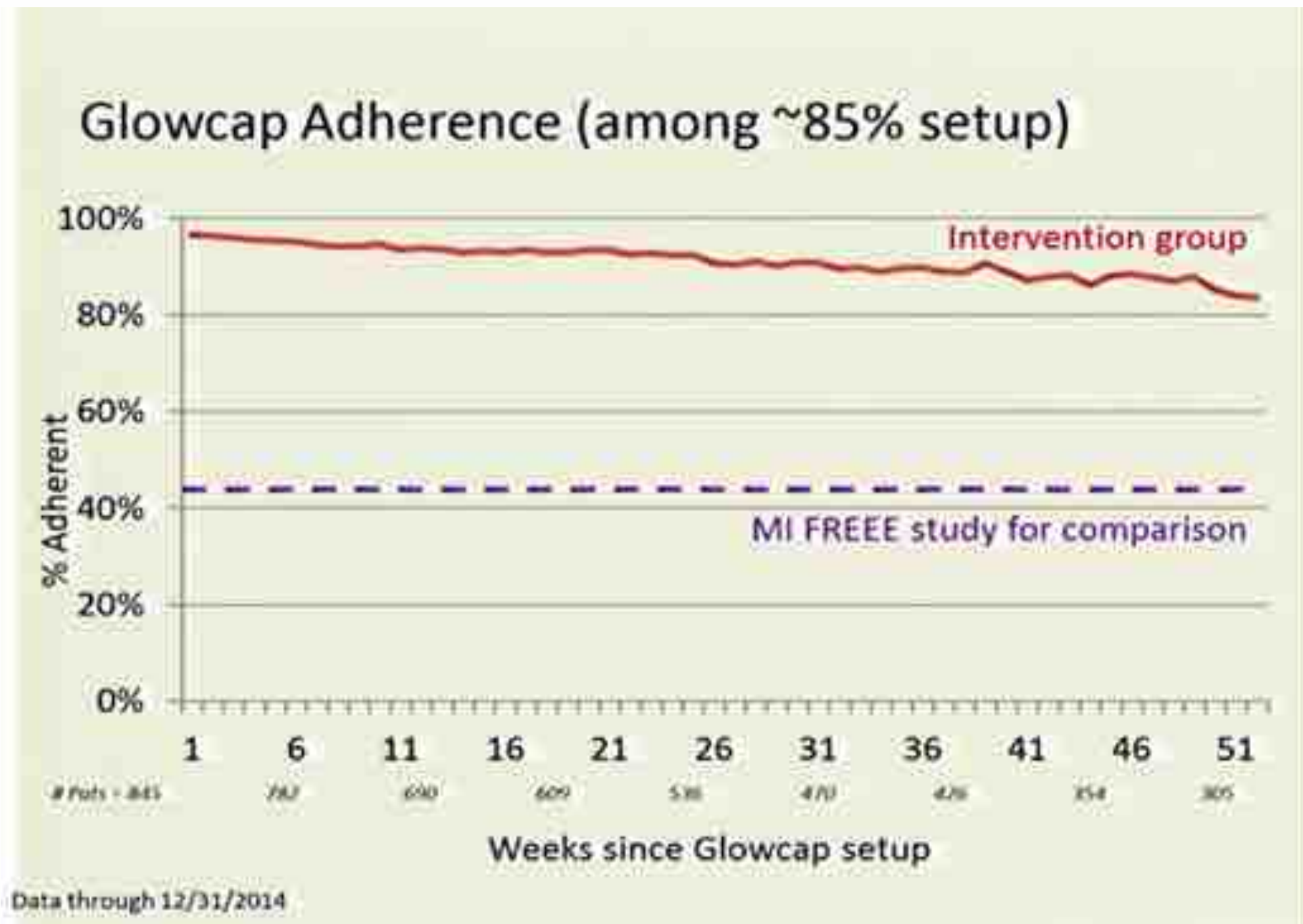
Time is now: Internet of Things





Time is now: Behavioral Evidence

June 2015, Office Behavioral and Social Science Research NIH-OD



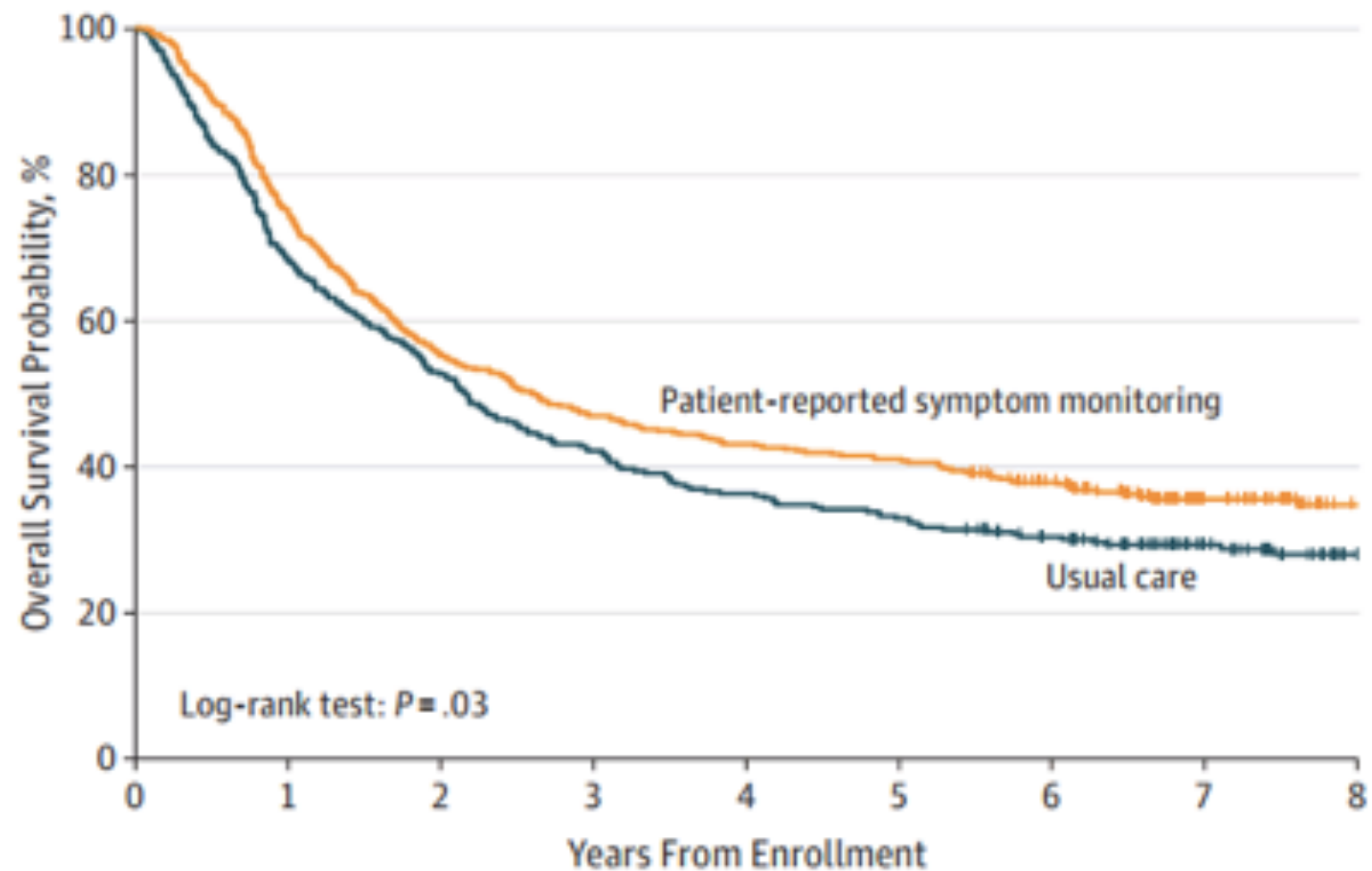
GlowCap®





Time is Now: Positive Clinical Outcome Data from PRO-CTCAE

Figure. Overall Survival Among Patients With Metastatic Cancer Assigned to Electronic Patient-Reported Symptom Monitoring During Routine Chemotherapy vs Usual Care

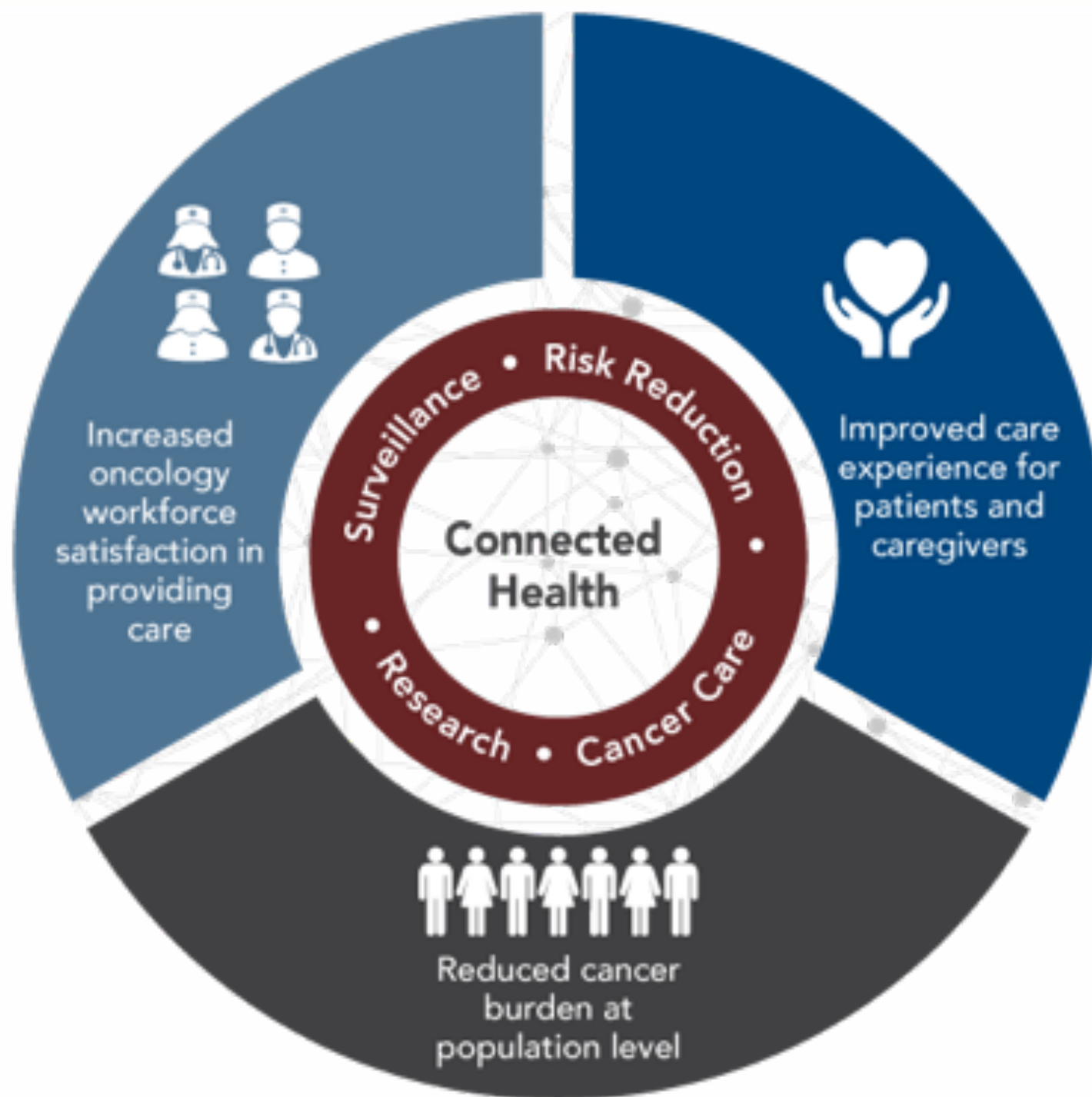


No. at risk									
Patient-reported symptom monitoring	441	331	244	207	190	181	148	65	33
Usual care	325	223	171	137	118	107	89	50	27

Basch, E., Deal, A. M., Dueck, A. C., Scher, H. I., Kris, M. G., Hudis, C., & Schrag, D. (2017). Overall Survival Results of a Trial Assessing Patient-Reported Outcomes for Symptom Monitoring During Routine Cancer Treatment. *JAMA*.



Improve Care, Patient Experience, Population Health



Source: <https://prescancerpanel.cancer.gov/>



Strategic Recommendations



**Enable
Interoperability**



**Support the
Oncology
Workforce**



**Facilitate Data
Sharing and
Integration**



**Enable Individuals
to Manage and
Participate in
Their Care**



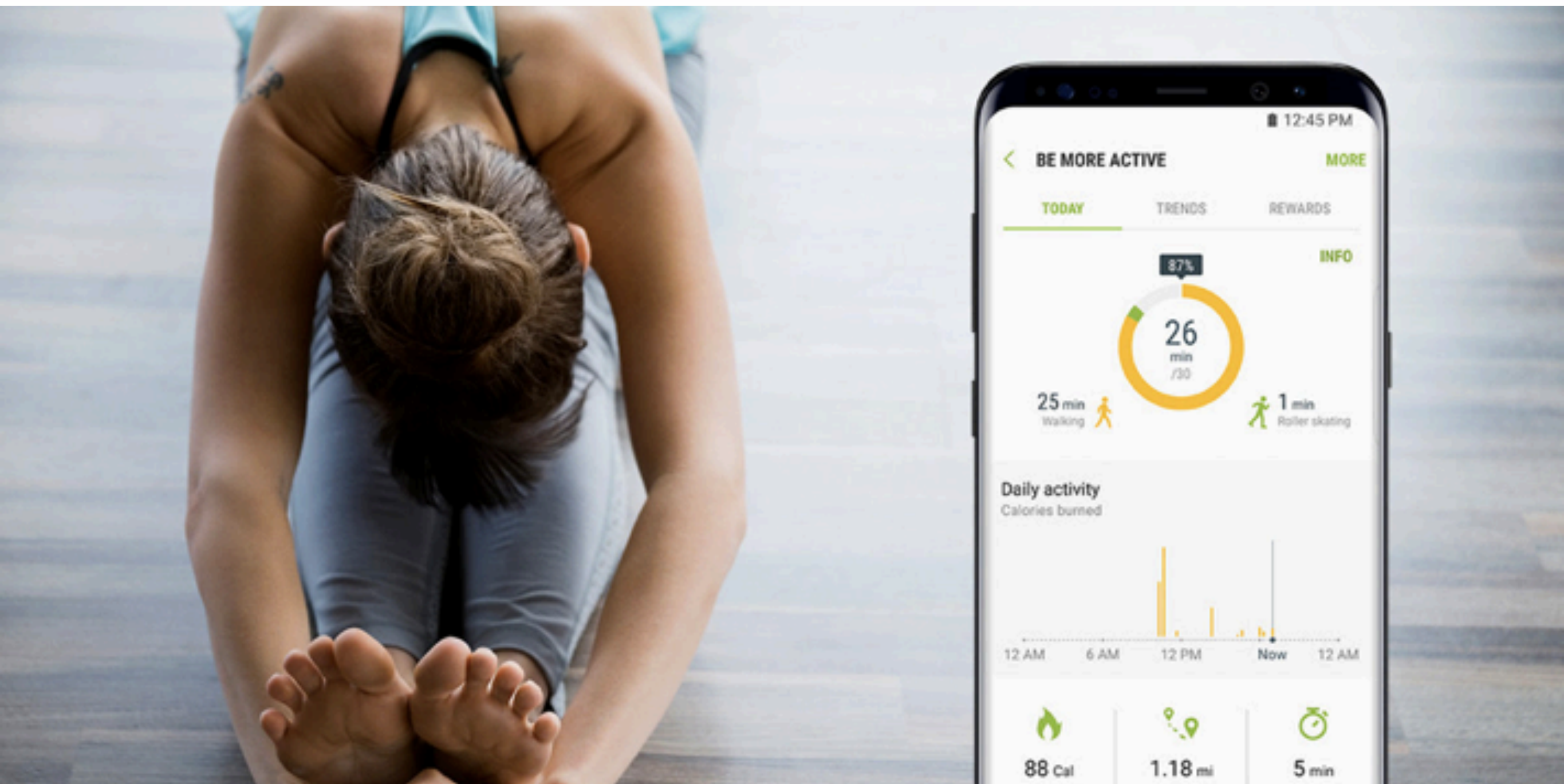
**Ensure Adequate
Internet Access**



**Conduct High-
Priority Research
to Advance
Connected Health**



Promote Empowerment, Engagement, Better Health





Bridge Disconnections in Fragmented Care



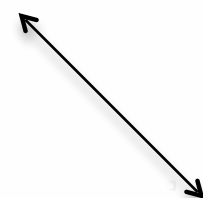
Building an “electronic safety net” between patients and care team





Move from “Point of Care” to “Point of Need”

Dissolving barriers between patient,
family, & care teams





Allow for Healing at Home, Aging in Place

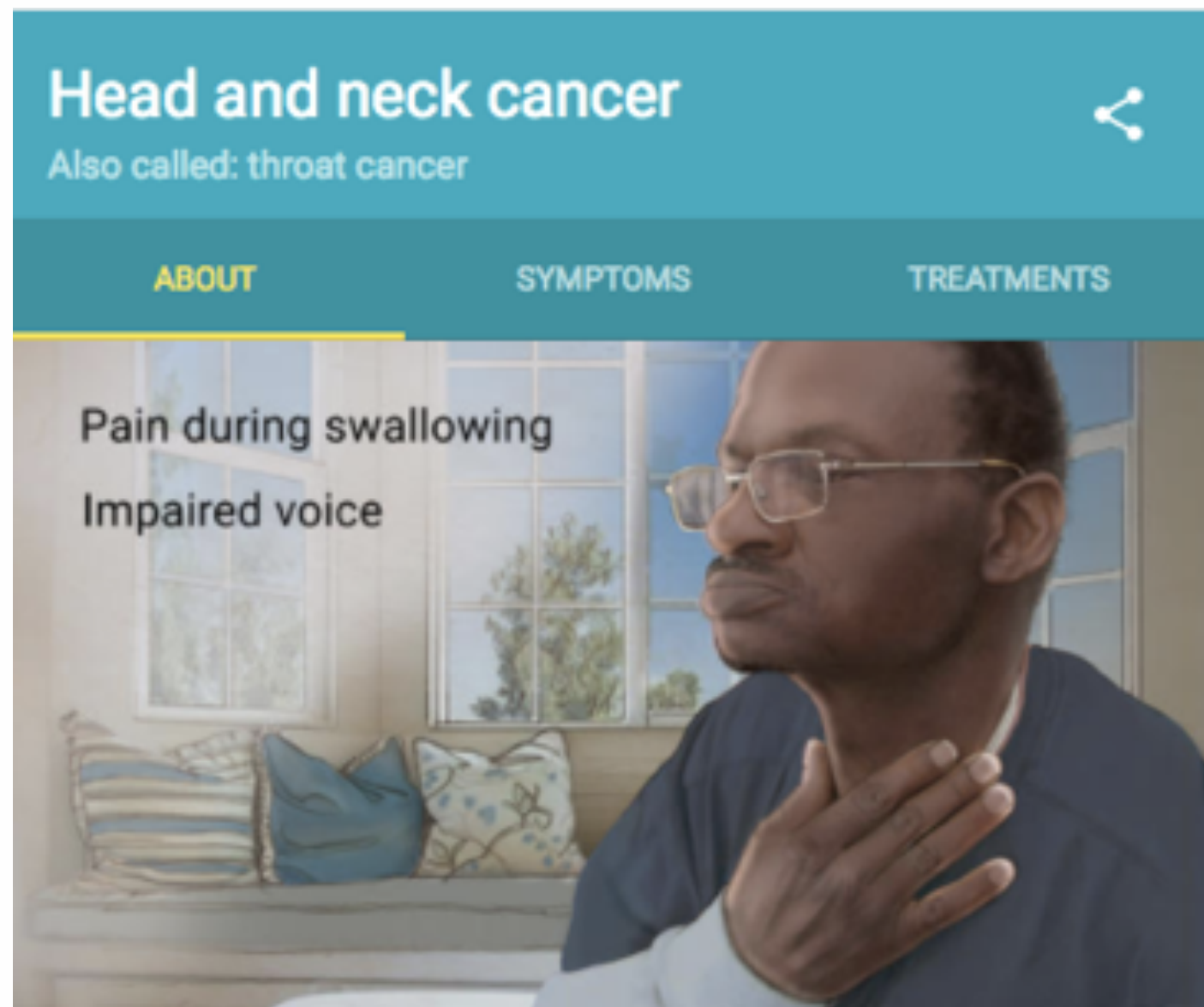


"With telemonitoring, we can spot the negative trend in a couple days, rather than waiting until the next nurse visit."

Nathan Agen, Ascension at Home's director of clinical services



Use Smart Home Approach for Predictive, Preemptive Action



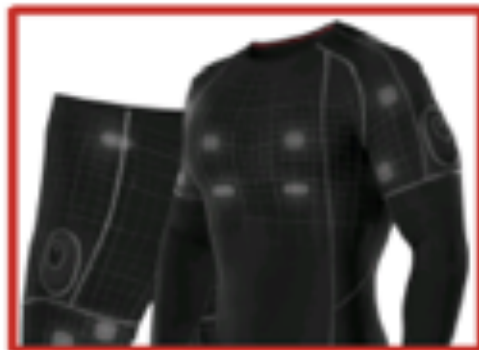
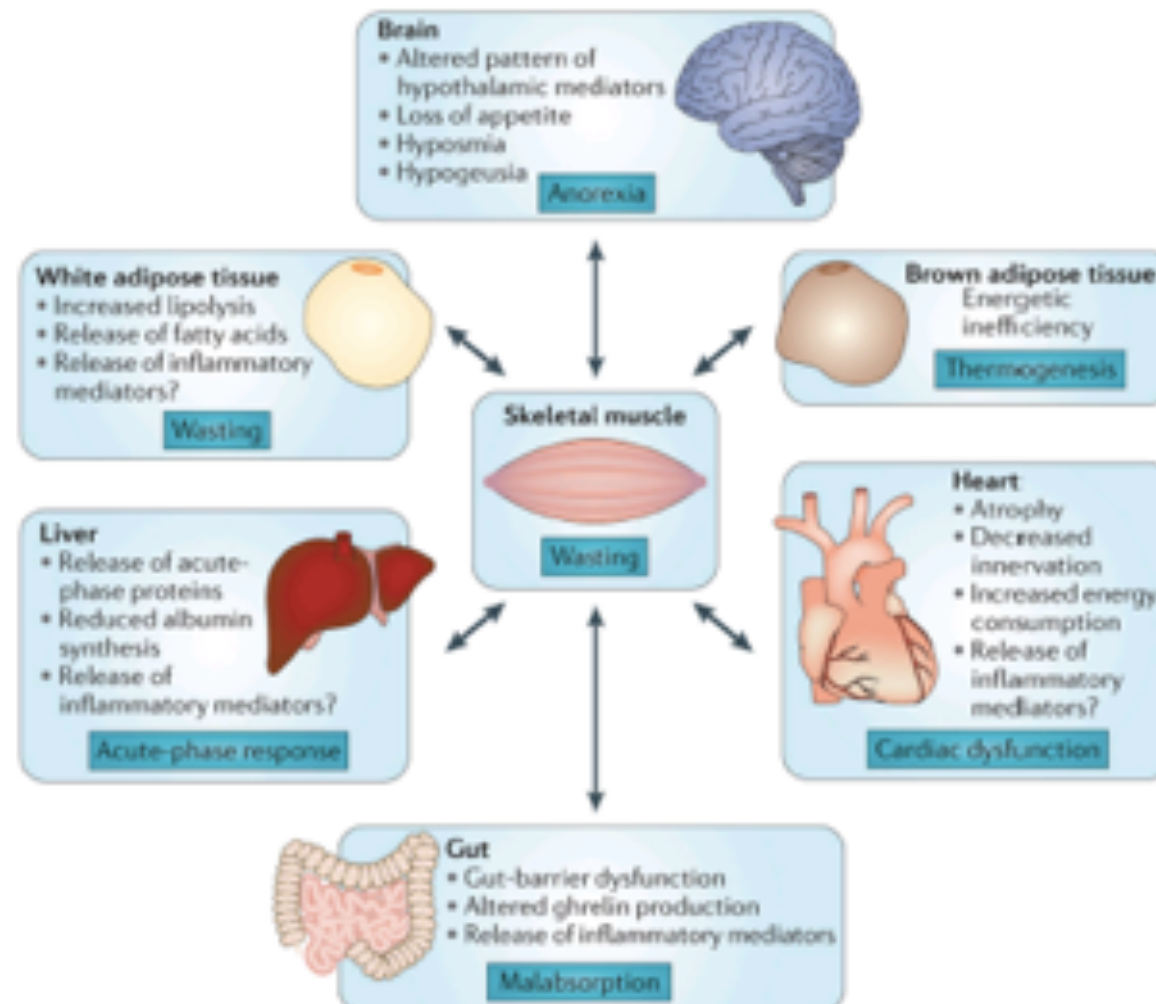
Source: Peterson, S. K. & Patrick, K. Creating a Health Information Technology Infrastructure to Support Comparative Effectiveness Research in Cancer, in *Oncology Informatics*, B.W. Hesse, D.K. Ahern, and E.B. Beckjord, Editors. 2016, Elsevier: Boston, MA, p. 373-386.



Reduce Friction in Measurement through Passive Sensing

Objective Measures of Cancer: Cachexia – Energy Wasting Syndrome

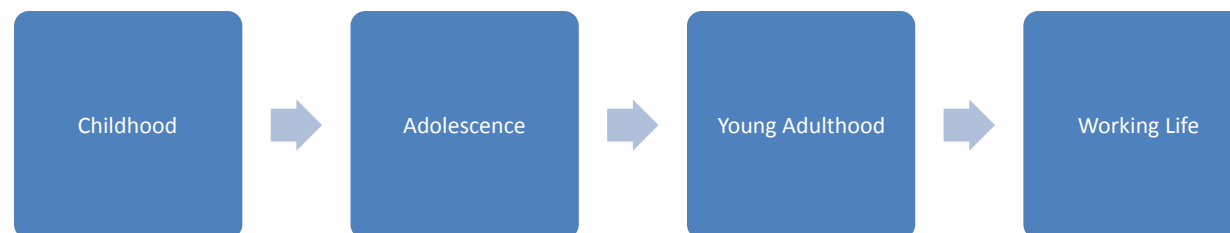
- Multifactorial syndrome involving changes in several metabolic pathways, in many tissues and organs
- Responsible for 20% of cancer patient deaths
- Defined by loss of skeletal muscle and body fat + inflammation





Provide for Continuous, Connected Care across Lifespan

Patient's Life Span





Encourage “Data Altruism:” Donating Data for Science

NIH and ONC announce Sync for Science to enable patients to donate data to Precision Medicine Initiative

EHR makers including Allscripts, athenahealth, Cerner, drchrono, Epic and McKesson said they will embrace open specs including S4S APIs and FHIR to connect research apps to electronic health records software.

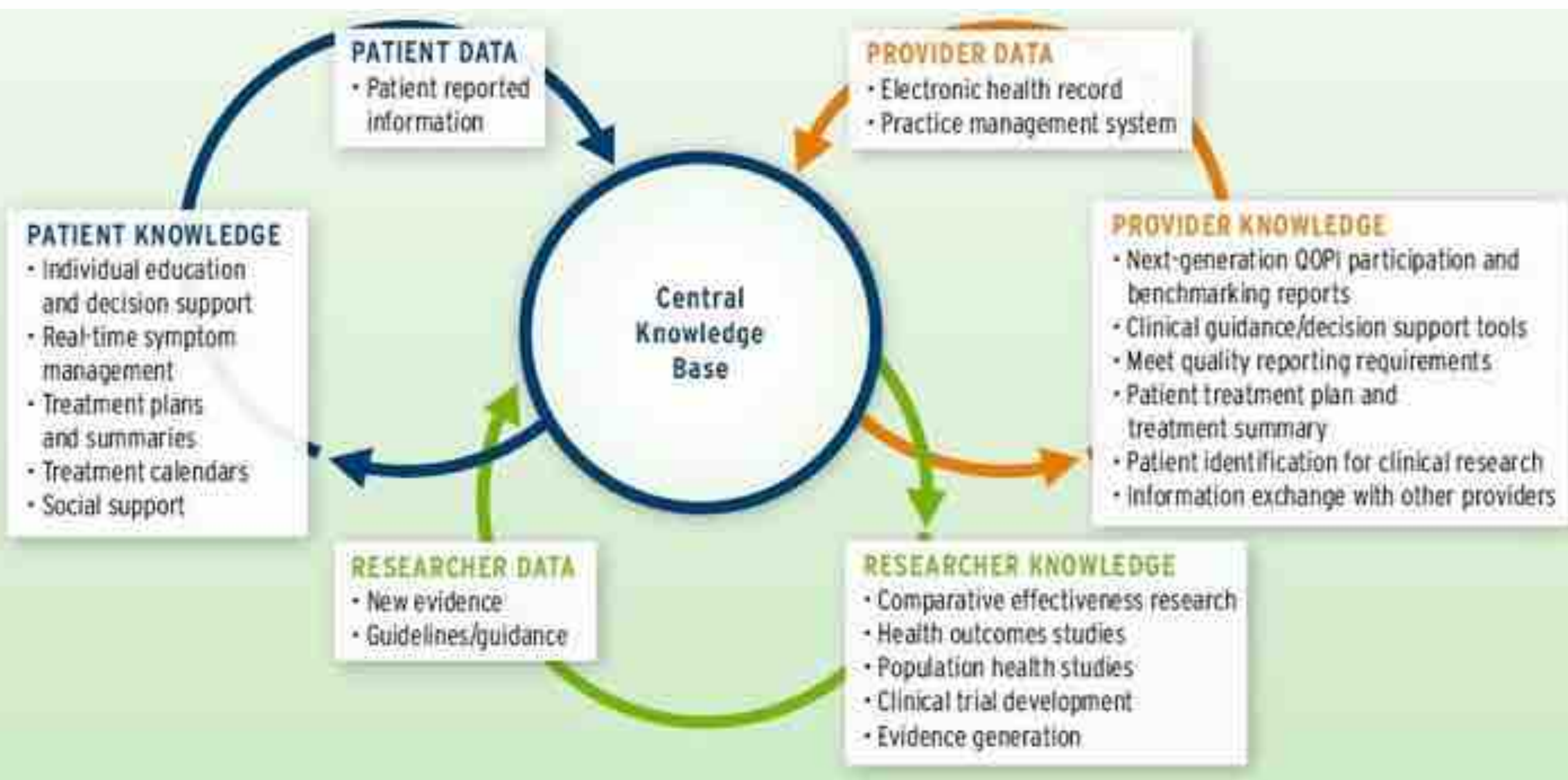


By [Mike Miliard](#) | March 24, 2016 | 12:16 PM





Enable a *Learning Oncology System* with Continuous Data



Source: Richard Schilsky & Robert Miller. American Society of Clinical Oncology. *Accelerating progress against cancer: ASCO's blueprint for transforming clinical and translational cancer research* (ASCO, 2011).

Some Concluding Thoughts: Old
Questions & New

Old question in Communication: How do we push a one-way persuasive message to change all behavior?

THE HYPODERMIC NEEDLE THEORY

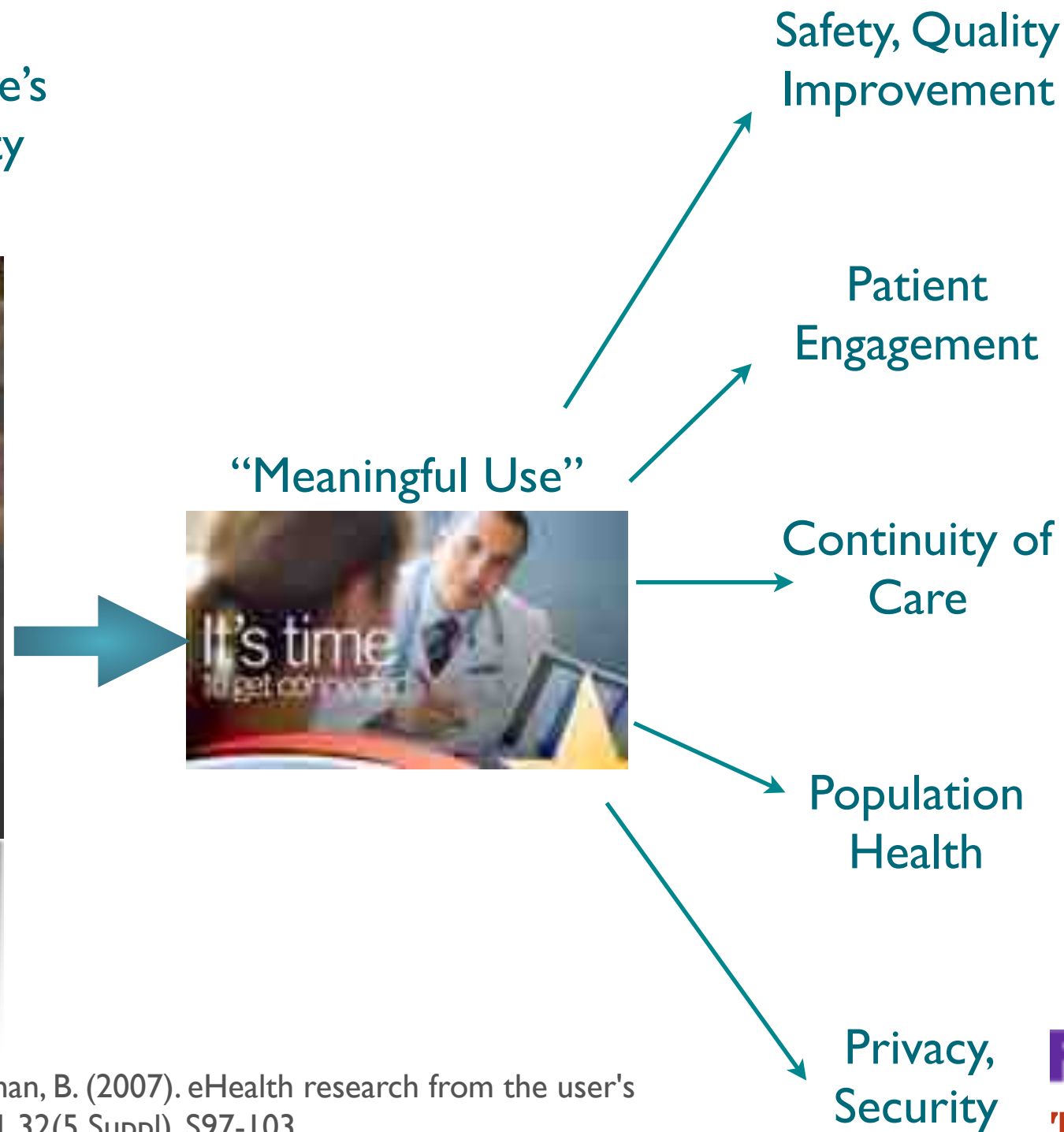


- DEVELOPED IN THE 1920s AND 1930s
- LINEAR COMMUNICATION THEORY
- PASSIVE AUDIENCE
- NO INDIVIDUAL DIFFERENCE



New question: How do we structure the communication environment to support self-determined pathways of health for individuals, loved ones, and communities?

Institute of Medicine's
Crossing the Quality
Chasm series

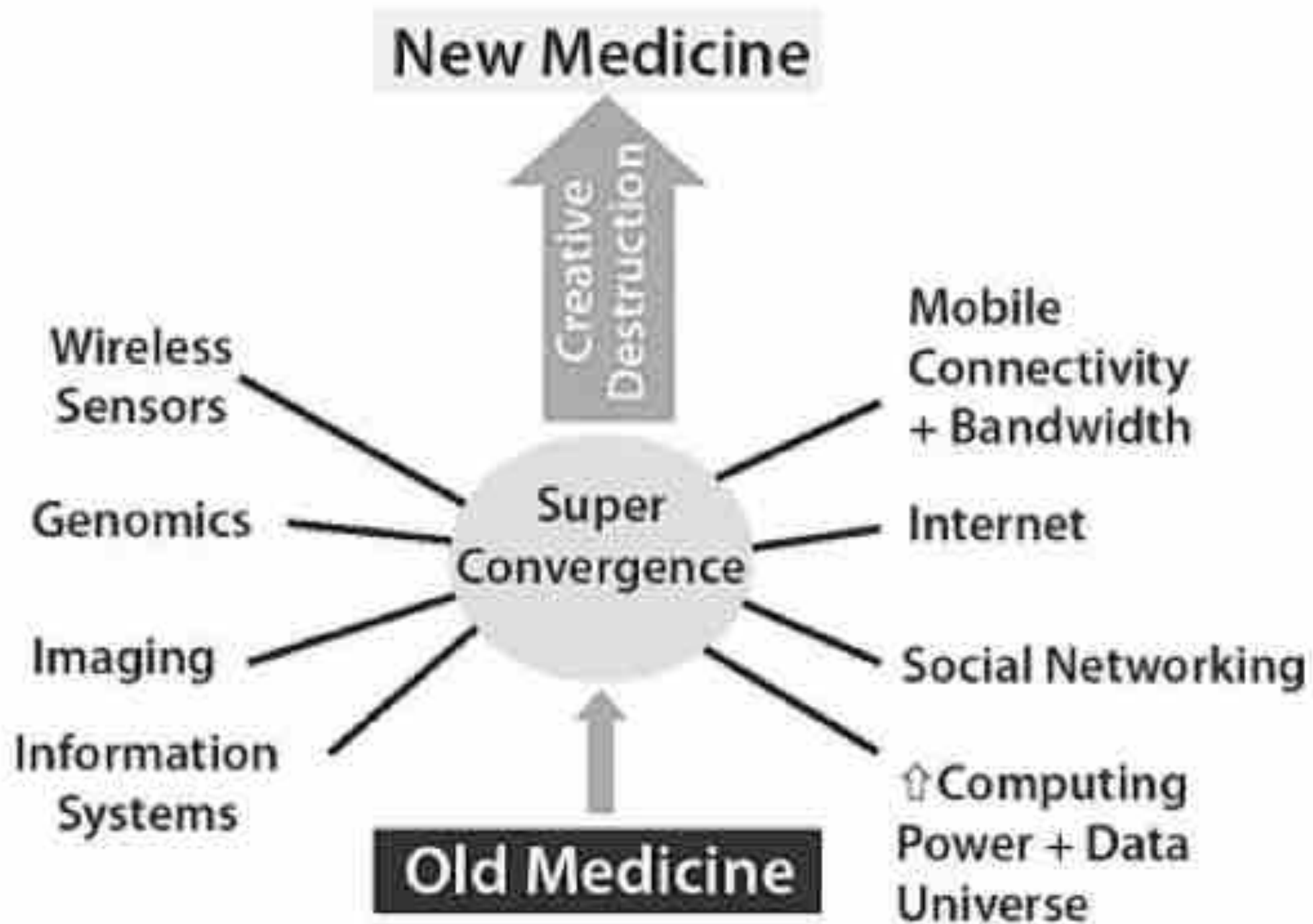


FedEx
TRUST



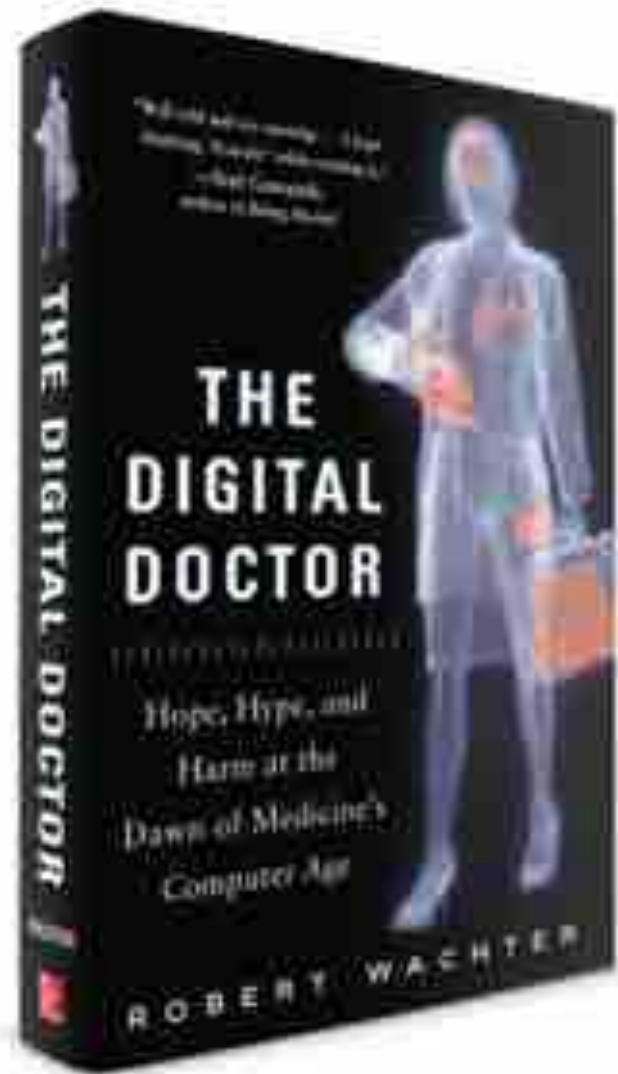
* Hesse, B.W., & Shneiderman, B. (2007). eHealth research from the user's perspective. Am J Prev Med, 32(5 Suppl), S97-103.

New question: How do we optimize opportunities within the rapidly changing environments of the “new medicine?”



Source: Topol EJ. The creative destruction of medicine : how the digital revolution will create better health care. New York: Basic Books; 2011.

New question: How do we work together across systems and across disciplines to create efficient, user-friendly solutions?



“The real action – and the money – will shift to creating innovative tools to allow patients to stay healthy & manage chronic illness, helping clinicians do their work better ..., and turn petabytes of data into real intelligence.”

Robert Wachter, Author of “The Digital Doctor”

New question: How do we take advantage of the best aspects of global connectivity to work together against cancer?



The screenshot shows the UICC (Union for International Cancer Control) website. The header features the UICC logo and the text "Union for International Cancer Control". Below the header is a navigation bar with links: Home, About UICC, Press Image, Resources, Donate, Partners, and a search bar. A secondary navigation bar includes links: Home, Declaration, Membership, Programme, Events, Ambassadors, Advocacy, Fellowships, and Community. The main content area features a large graphic with the text "Together we are Stronger" and a digital counter showing "511,146" people who have signed the Declaration so far. A yellow button says "Sign now" and the text "for a cancer free world" is displayed. Below this, there are three main sections: "Australia cigarette 'plain packaging' law passes Senate" with a sub-headline "Law banning brand labels on cigarette packaging have been passed by the Australian Senate, their last key hurdle before coming into effect." and a "Previous/Next" button; "In the news" with a list of recent news items including "Australia cigarette 'plain packaging' law passes Senate", "Daily aspirin 'blocks' bowel cancer", "Breast cancer link to small amount of alcohol", "Barack Obama 'tobacco-free', president's doctor confirms", and "Closing the Cancer Divide: A Blueprint to Expand Access to Low- and Middle -Income Countries"; and "World Cancer Declaration" with a sub-headline "500,000 signatures go to the UN Summit on NCDs" and a brief description of the campaign. A video player is visible in the bottom left corner with the title "What is the Declaration?".

UICC
Union for International Cancer Control

Home | About UICC | Press Image | Resources | Donate | Partners

Home | Declaration | Membership | Programme | Events | Ambassadors | Advocacy | Fellowships | Community

Together we are Stronger

511,146

people have signed the Declaration so far

Sign now

for a cancer free world

Australia cigarette 'plain packaging' law passes Senate

Law banning brand labels on cigarette packaging have been passed by the Australian Senate, their last key hurdle before coming into effect.

Previous/Next

In the news

- Australia cigarette 'plain packaging' law passes Senate
- Daily aspirin 'blocks' bowel cancer
- Breast cancer link to small amount of alcohol
- Barack Obama 'tobacco-free', president's doctor confirms
- Closing the Cancer Divide: A Blueprint to Expand Access to Low- and Middle -Income Countries

More news

World Cancer Declaration

500,000 signatures go to the UN Summit on NCDs

UICC and its member organisations collected over 500,000 World Cancer Declaration signatures ahead of the UN Summit on NCDs, sending a powerful cancer message to Heads of State and other participants.

What is the Declaration?

The World Cancer Declaration: from resolution to action

UICC, American Cancer Society and Norwegian Cancer Society have co-authored an article published in this month's *Lancet Oncology* journal, entitled "The World Cancer Declaration: from resolution to action".

The Promise of Uniting Systems



SAMSUNG Health



Comprehensive Cancer Center of
Samsung Medical Center

