Defining the Perfect Health System

Duke University School of Medicine, Durham, North Carolina, USA

W. Ed Hammond, PhD
Panel Moderator

Duke Center for Health Informatics
Duke Clinical and Translational Science Institute
The Healthcare System Is Broken!

- Lack of communication
  - Between clinicians
  - Between clinicians and patients
  - Between clinicians and administers
- Clinicians are unhappy
- Patients are unhappy
- Lack of interoperability (end to end)
- Systems are siloed
- Systems are out of date
- Medical errors are still a major cause of death
The Galileo Project

How do we fix the Health Care System?

• The Galileo Project is to define the PERFECT Health System.
  – Health Care is a sub-component.
• The goal is not to address perceived problems of today, but to step into the future.
• Have held two “thinking aloud” Zoom sessions involving over 25 clinicians in 2020 and one additional session in 2021 with over 20 primarily Allied Health Staff
  – Invited initial thoughts shared in group
  – Divided into 5 breakout groups. Panelists were leaders of the breakout groups.
• Only constraints
  – Can’t say “you can’t do that because …”
  – Can’t say “that’s impossible”
  – No boundaries – no comment is out of scope.
Panelists

- Patients – James E Tcheng, MD
  Professor of Medicine, Interventional cardiologist
- Clinicians – Stephen Keir, DPh, MPH
  Professor in Neurosurgery
- Technology – Genie McPeek Hinz, MD, MS
  Associate CMIO
- Community – Lori Orlando, MD, MHS, MMCi
  Professor of Medicine
- Health System – Vivian West, PhD, MBA, RN
  Associate Director, DCHI
Great Expectations!
- Customer service perspective
- What, where, when & how

**Patients and the Health Care System**

*What do patients want?*

- High Quality Care
- Accessible and Navigable
- A Great Experience!
Patients and the Health Care System

What do patients want?

High Quality Care
- Right information
- Right format
- Right diagnostics
- Right therapeutics
- Coordinated
- Patient centered

Accessible & Navigable
- Accessible
- Adaptive
- Convenient
- On-demand
- Continuous
- Personalized

= Great Experience
- People
- Processes
- Communications
- Environment
- IT systems (PHR)
- Ancillaries

GALILEO

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Corollary Patient Issues – Responsibilities of Health Care and Beyond

*Patients should be the centerpiece of the perfect system*

What needs to be done to provide the greatest value for the patient?

- “Total responsibility” – all health issues, well-coordinated
- Physical plant, workflows – re-engineer to take the clinician to the patient
- Access, technology – portals, telemedicine, virtual visits
- Health literacy – teach from K-12, biology / science and technology
- Diversity, equity, and inclusion - gender, race, social, financial, handicaps, …
- Universal healthcare payment models
Corollary Issues – for Patients to Consider

*We are all patients; health care and healthcare should be about the patient!*

Most participants in Galileo have their own stories about how the health care system has failed them.

- Patient responsibilities – engagement, health literacy, lifestyle
- Computer literacy – increasingly relevant
- Privacy – not an absolute
- Anticipate new models – virtual visits, home hospitalization, virtual assistants
Clinicians and the Health Care System. What do clinicians want?

1. Strong Clinician/Patient Relationship
2. Evidence-based Medicine
3. Care Coordination

GALILEO

Accurate Data
Accessible Data
All Data
Active Decision Support
Address Public Health Issues
Better Data Driven Risk Models
Current Technology Incorporated
Comprehensible Data

Reduce Administrative Burden

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Clinicians and the Health Care System.

What do clinicians want?

Disparate Big Data Sources

Research Studies

EHR

Payer Records

Government Agencies

Public Records

Patient Portals

Smart Phones

Search Engines & Databases

Wearables

Systemic Big Data Integration

Diagnostics

Patient First

Medical Research

Adverse Events

Evidence Based

Coordinated Care

Cost Reduction

Population Health

Precision Medicine

Integrated “Universal” Big Data System
## Technology and the Health Care System

**What do clinicians and patients want?**

### Barriers to Healthcare for Patients

#### Patient Centric
- Fear / Beliefs / Perceptions
- Health Literacy
- Comorbidities
- Disability
- SDoH
- Food / Housing
- Transportation
- Language Barriers
- Child/Adult Care

#### Healthcare Centric
- Location of Healthcare Facilities
- Communication with Personnel
- Scheduling
- EHR functionality
- Uninsured / Underinsured
- Burnout of Caregivers
- Oversight Requirements

#### Environment Centric
- Employment Opportunities
- Access to Healthy Food
- Exercise Opportunities
- Local Pollution
- Safe and Affordable Housing
- Education
- Community Support/Collaboration

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Can technology democratize access to health care and the data be used to improve our lives?

Can the health care technology support returning joy to the practice of medicine?
Technology and the Health Care System

What do clinicians and patients want?

Accessibility
- On the Go Functionality
  - EHR on Phone / Tablet
  - Health Portals
  - Transportation
- In Health System
  - Telehealth
  - Hospital at Home
  - Patient Navigators
  - Interpreters

Access to Health care
- Health Information Exchanges
  - Other EHRs
  - Pharmacy / Ancillary Providers
  - Population Health
- Integration and Interoperability
  - EHR & Additional Data
    - Insurance / Billing
    - Social Determinants of Health
    - Patient Wearables
    - Genomics

In Health System
- Transportation
- Telehealth
EHR Technology Building Blocks

- **Storage**: Cloud versus Standard
- **Data Exchange Standards**
  - HL7
  - SMART on FHIR
  - CDS Hooks
- **Data Metadata Tagging Standards** (LOINC, ICD10, RxNorm etc)
- **Data Lakes**
- **NLP/AI/Voice Recognition**
- **Effective User Interface**
Community and the Health Care System

What do communities want?

- Doctors
- Procedures
- Treatments
- Labs
- Imaging
- Allied Health Services

PATIENT

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What do communities want?

- Doctors
- Treatments
- Labs
- Allied Health Services
- Fitness
- Nutrition
- Psychologist
- Pharmacy
- School
- Tertiary care specialists
- Procedures
- Imaging
- Navigator
- Labs
- Allied Health Services
Current System
- ‘Sick’ care system
- Huge disparities
- Provider is the central component
- Siloed with limited expertise about health

Community-based System
- Focus on health
- Adaptive to unique community needs
- Provider is one part
- Embed expertise in health and support

Solution is not external to the community but rather internal – engaging and training community members to fill the service roles identified as essential by the community.
Community and the Health Care System

What do communities want?

Community A
- Health coach
- Fitness
- Primary care
- Transportation

Community B
- Physical therapy
- Prepared meals
- Transportation
- Primary care
- Navigator
- Eldercare
THE PERFECT SYSTEM COVERS THE WATERFRONT
Discussion Foci (n=615)
### The Health System
**What is needed?**

#### PATIENT CARE
- Patient focused

#### SYSTEMS
- Sick system → Health system

#### FINANCES
- ROI. Cost of keeping healthy = savings to pay for treatments

#### WORKFORCE
- “Work at the top of license” + navigator

#### FUTURE HEALTHCARE
- Team approach, everyone at every level is involved

#### TECHNOLOGY
- Transition tools into clinical care

#### DOCUMENTATION
- Reform process ...team based

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**GALILEO**

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<thead>
<tr>
<th>PATIENT CARE</th>
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**Reform process**
- Team based
## The Health System

**What is needed?**

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<td>Infrastructure. Cost.</td>
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<td>Motto: No door is closed</td>
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### Patient Involvement to Transform Community

- Create family from the community
- Emphasis on the whole person

### Take Resources to Patients

- Training on health
- Emphasis on the whole person

### No Door is Closed

- Infrastructure
- Cost
- Motto: No door is closed

### Think as a Start-Up

- Change
- +Culture change of big ideas

### Stakeholder Involvement to Transform

- Education
- Training on health
- Emphasis on the whole person

### Change

- Change
- +Culture change of big ideas

### Patients

- Patients
- Stakeholder involvement to transform

### Needs

- Needs
- Take resources to patients
Identify and build from best of breed

- Community services (Brazil)
- Mental health and wellbeing (Australia)
- Innovation, flair, speed (India)
- Choice (France)
- Primary care (Israel)
- Patient and community empowerment (parts of Africa)
- Health promotion (Nordics)
- Information, communication, technology (Singapore)
- Funding (Switzerland)

From GWS 2018, Italy: In Search of the Perfect Health System | Mark Britnell
Dream big
Move fast...be agile