



Faculty of Design

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## Design for care: Design research for human-centred healthcare

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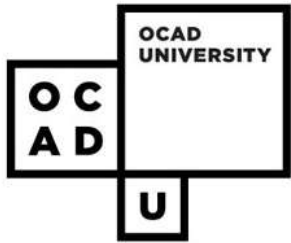
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# **Design for Care**

## **Design Research for Human-Centred Healthcare**

**Peter Jones**  
**Redesign Network**  
**OCAD University, Toronto**



[designforcare.com](http://designforcare.com)

Booksite (Code: DFCRSD)

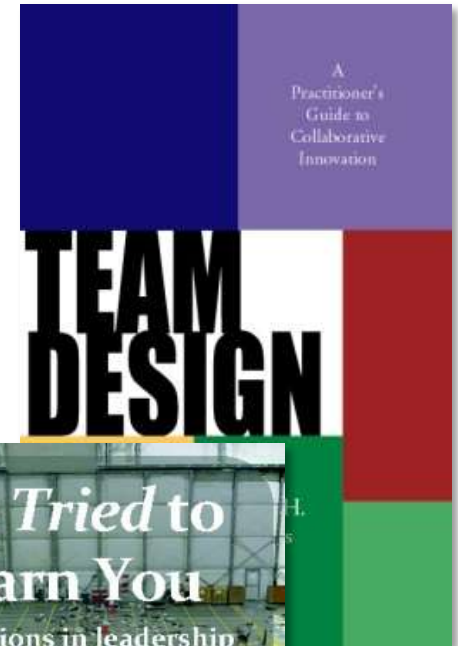
[caredesignnetwork.com](http://caredesignnetwork.com) Practice network

@[designforcare](https://twitter.com/designforcare)



## Publishing Innovations

- Design series, design values
- Print + PDF, Kindle, ePub
- Images free on Flickr
- Not about “selling books”
- Book as a medium for field & practice development
- Continuous process, not an “end”

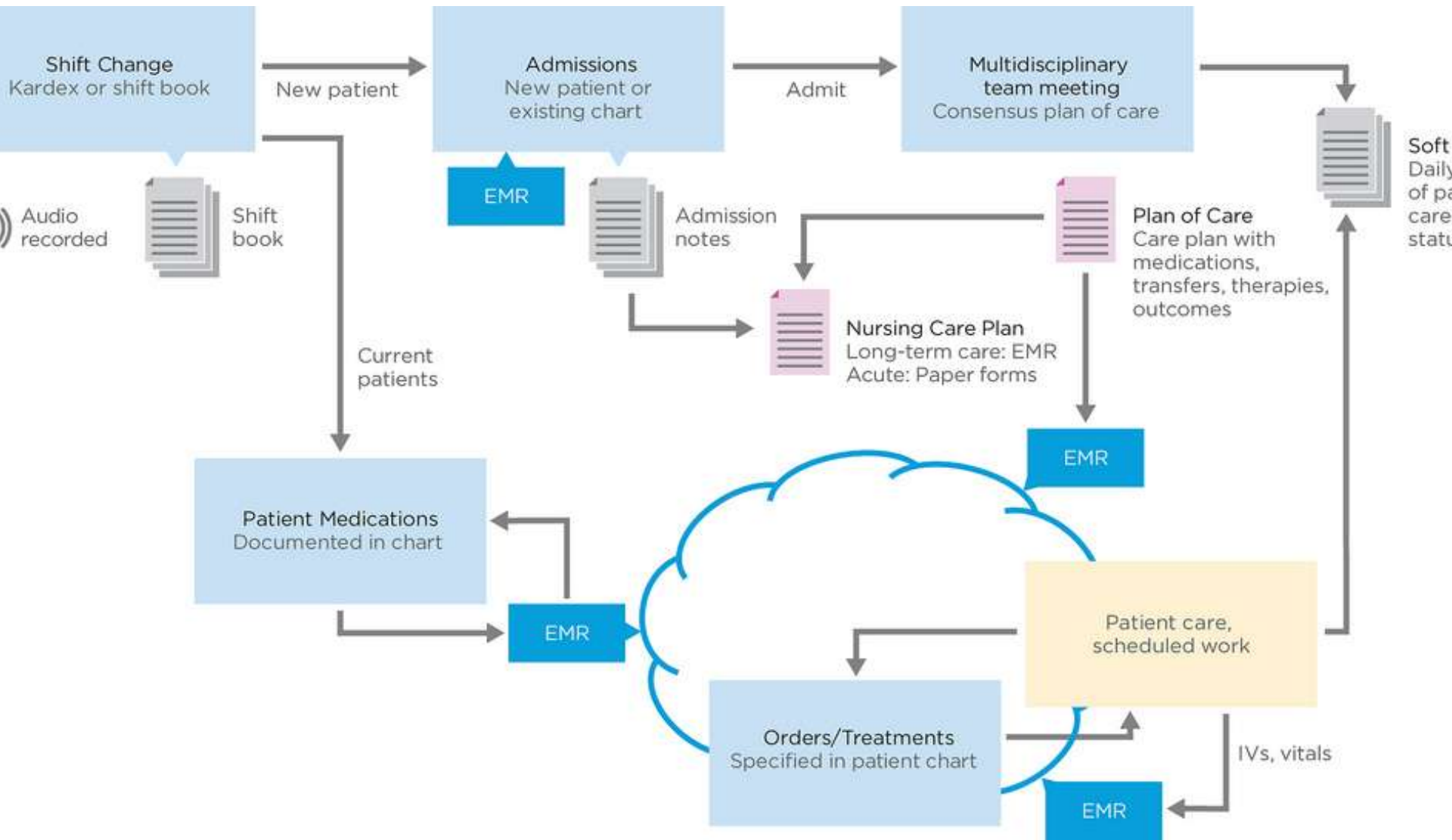


DESIGN FOR CARE  
Innovating Healthcare Experiences  
by PETER H. JONES Foreword by John Hatala, MD





# Why this book.



# *Where care lives.*



# Design for Care: Innovations in Healthcare Experience

[designforcare.com](http://designforcare.com)  
[@designforcare](https://twitter.com/designforcare)

*“What if Designers were included  
in the team as care professionals?”*

Helping Medicine change from the  
inside. A design capacity for health  
practice & care organizations.

- *People not patients.*
- **Systemic, touches every sector**
- **Connects across disciplines**
- **Cases, Methods, Experiences**

## **Rethinking Care**

1. Design as Caregiving
2. Co-Creating Care
3. Seeking Health

## **Rethinking Patients**

4. Design for Patient Agency
5. Patient-Centered Care Service

## **Rethinking Care Systems**

6. Innovating Points of Care
7. Designing Healthy Information Technology
8. Systemic Design in Healthcare Innovation
9. Futures in Service Innovation

**YET DESIGN HAS MADE A HUGE DIFFERENCE.**

**SHIFTING FOCUS FROM PRODUCTS –  
DEVICES, SOFTWARE & “THINGS” ...**

## Health Information for Individuals and Families

Choose a topic area below from the [Quick Guide to Healthy Living](#) to get started. Or right to get prevention information specifically for you.

- Nutrition and Fitness
- Everyday Health and Wellness
- Pregnancy
- For Parents
- Heart Health
- Public Health and Safety
- HIV and STDs
- Cancer Screening and Prevention
- Important Screening Tests
- Diabetes
- For Women
- For Older Adults



### HHS Initiatives

Health Communication,  
Health Literacy & e-Health

Healthy People



### Resources

- [Healthcare.gov](#)
- [ChooseMyPlate.gov](#)
- [National Health Information Center](#)
- [Womenshealth.gov](#)

## Information & Online Services

Coughs, Age 12 and Older

### Coughs, Age 12 and Older

Are you worried about a symptom? This tool will ask questions about your symptoms and, based on your answers, tell you whether and how soon you may need medical attention.

Check your symptoms

Coughs, Age 12 and Older

Do you have a cough? Review [health risks](#) that increase the seriousness of your symptoms.

☐ Yes

☐ No

Coughs, Age 12 and Older

How old are you?

☐ Less than 12 years

☐ 12 years or older

Are you male or female?

☐ Male

☐ Female

Coughs, Age 12 and Older

Are you choking and not able to breathe?

This may mean that something is caught in your windpipe.

☐ Yes

☐ No

Coughs, Age 12 and Older

Are you having [trouble breathing](#)?

Would you describe the problem as [severe](#), [moderate](#), or [mild](#)?

☐ Severe

☐ Moderate

☐ Mild

Coughs, Age 12 and Older



## ***Devices & Medical Products***



Zero diabetes armband concept  
Mauro Amoroso



Toshiba CT scanner



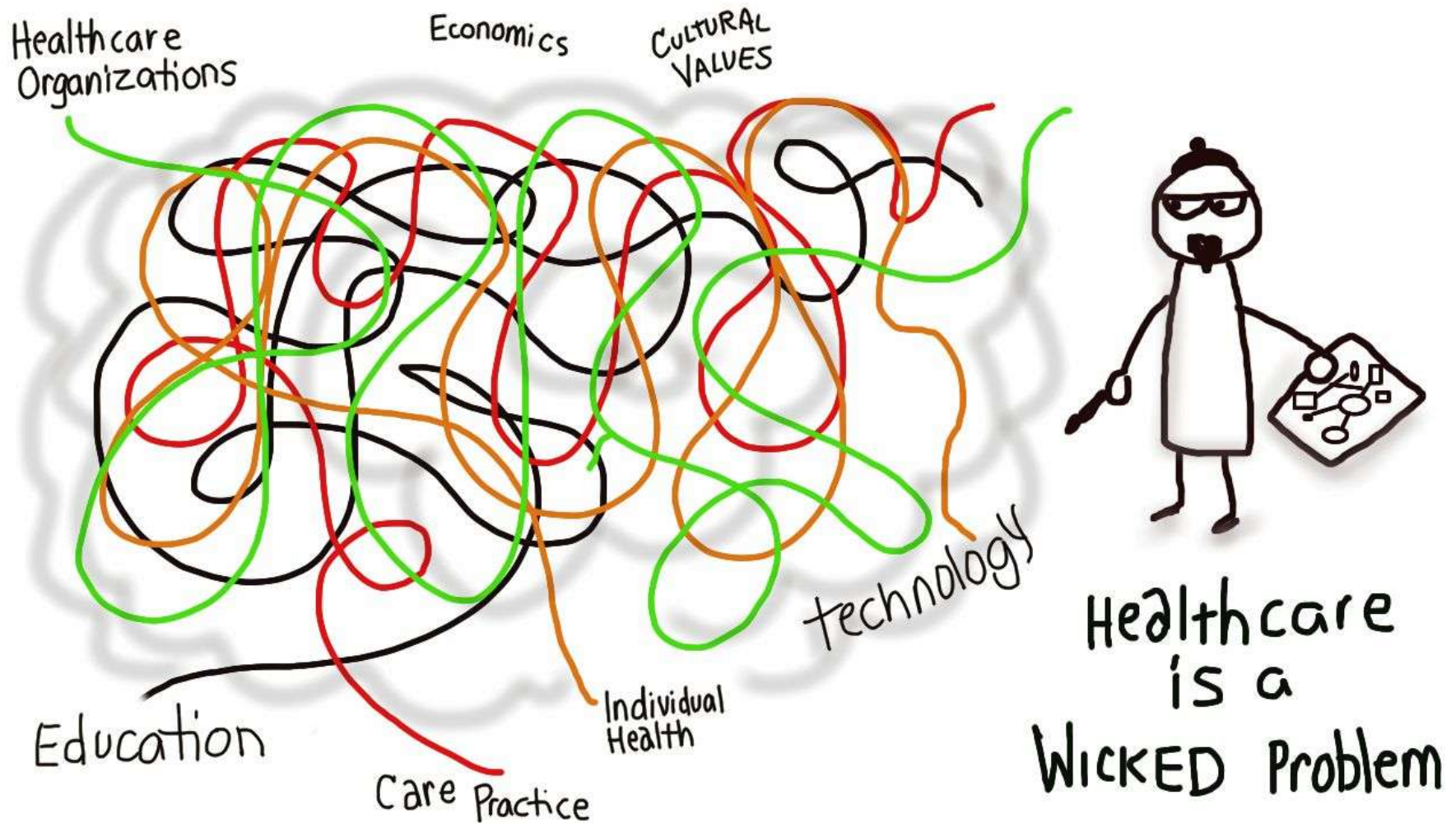
Timesulin insulin pen

## *Experiences*



Philips CAT “dollhouse” sim

# TO SERVICES & CONTEXTS ...

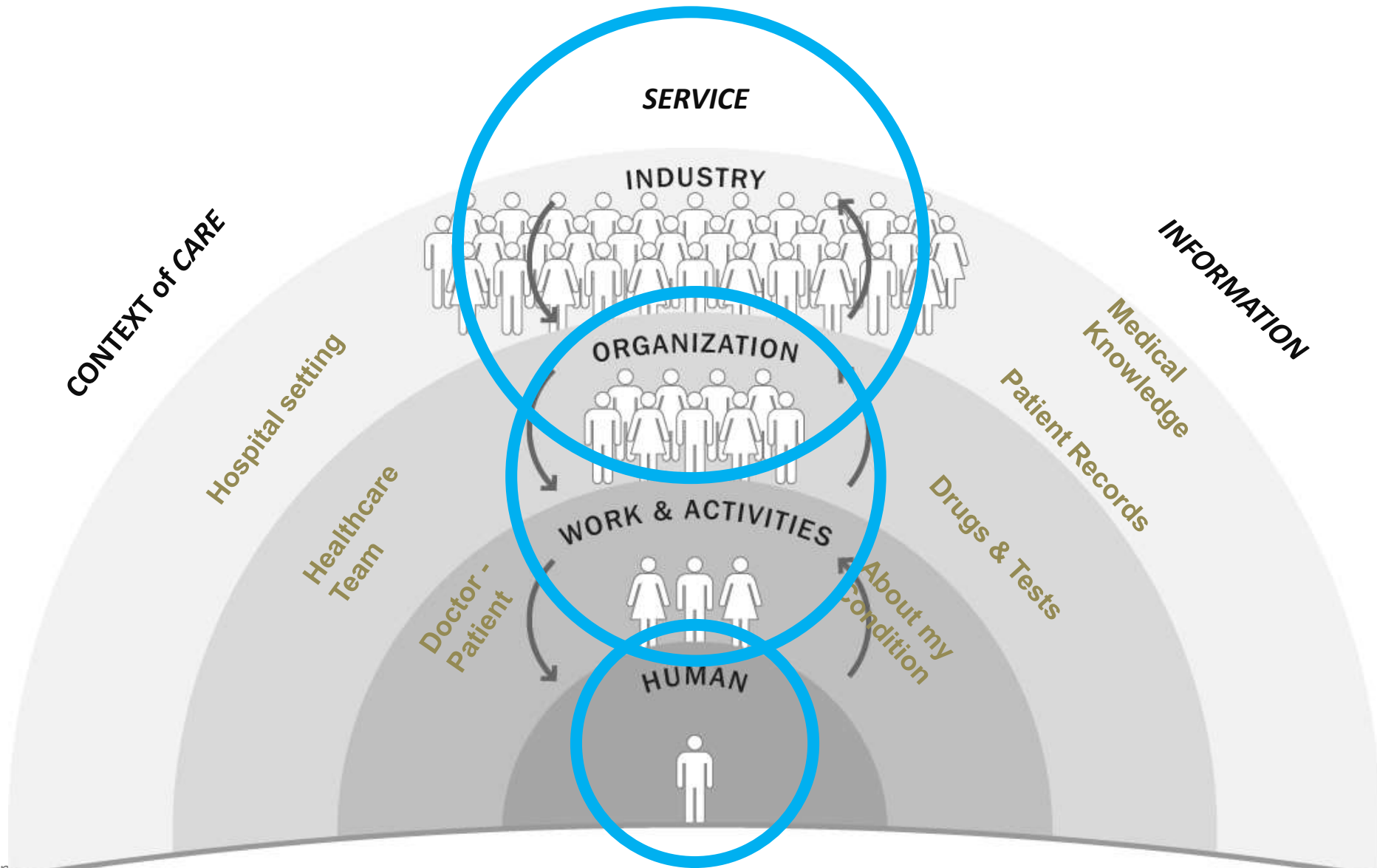


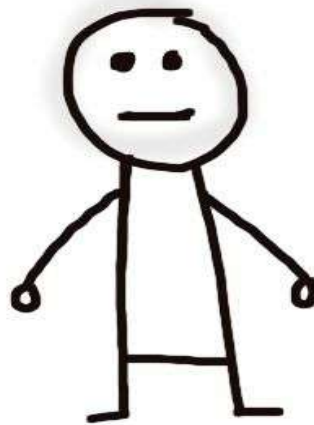
# Yet we are fragmenting Design Thinking in Healthcare

- User Experience / Interaction Design
- Service Design
- Evidence-Based Design
- Environmental Design
- Participatory Design
- Generative Design
- Radical Innovation
- *Bridging discipline: Sociotechnical systems*



# Contexts of Care Design

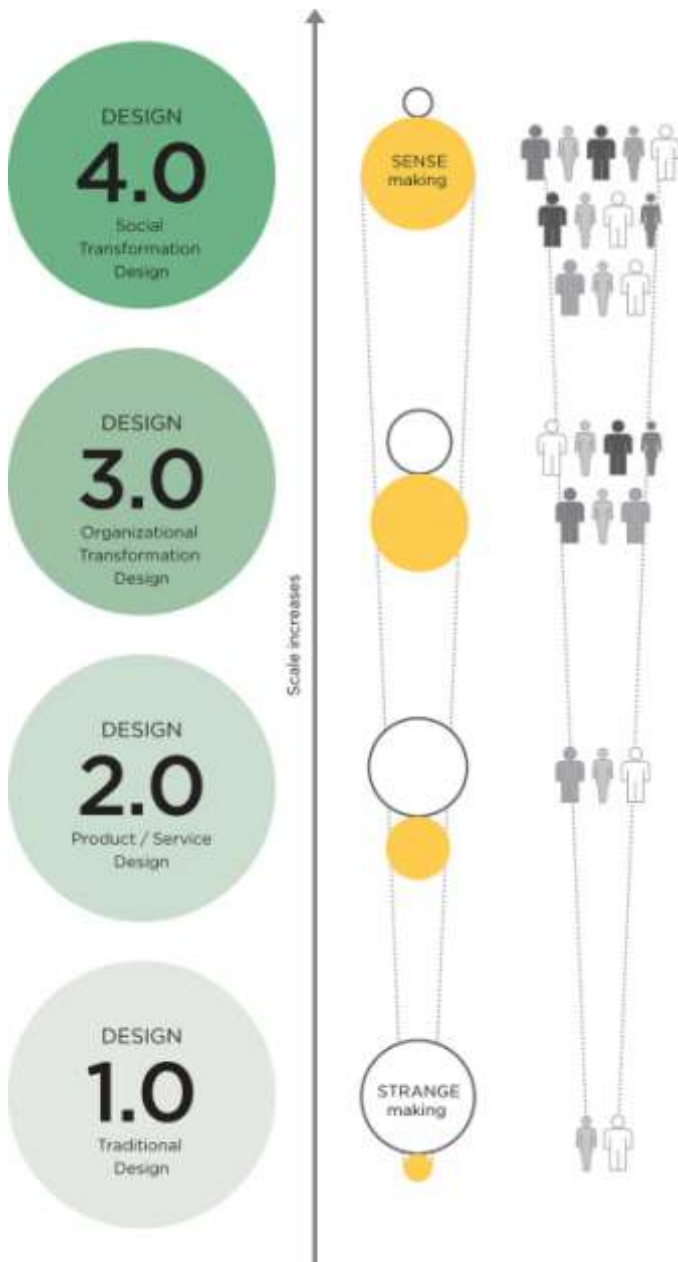




Person

- 1. People, not users nor *patients*.**  
People behave as *Health Seekers*.
- 2. Hospitals / Practices, *cultural & business*.**  
Cultural & business design sustain an enterprise in a community / system.
- 3. Healthcare is a *service system*.**  
Service systems are designable.

# Design Geographies



Each level has a skillset.  
Complexity increases with each .0  
Number of stakeholders >  
Need for collaboration >

But design *skills* do not transfer up

Healthcare may demand all 4.

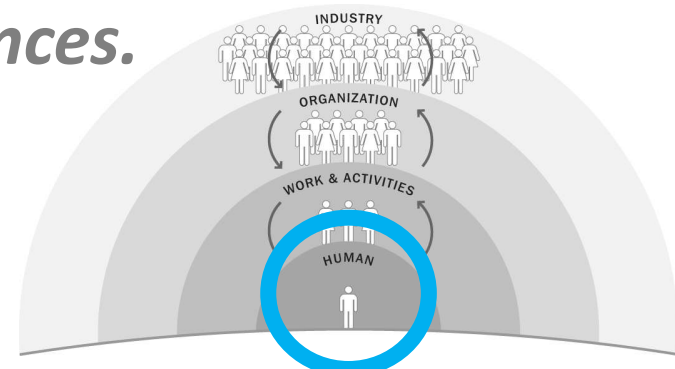
*At least > 1 designer*  
*And > 1 clinician*  
*And > 1 manager*





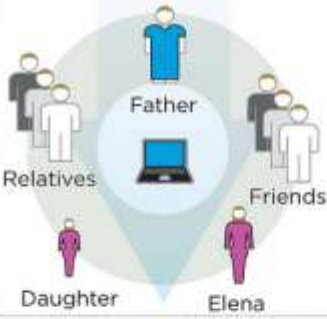




# We are all Health Seekers

- We do not self-identify as *patients*
- Can we design for *persons*?
- We all seek health – not “optimal” or perfect - but a homeostasis adapted to our lives.
- Health seeking journeys are both near-term recovery & full life’s cycle. Including the “healthy death.”
- Design aim is to fulfill *care experiences*.

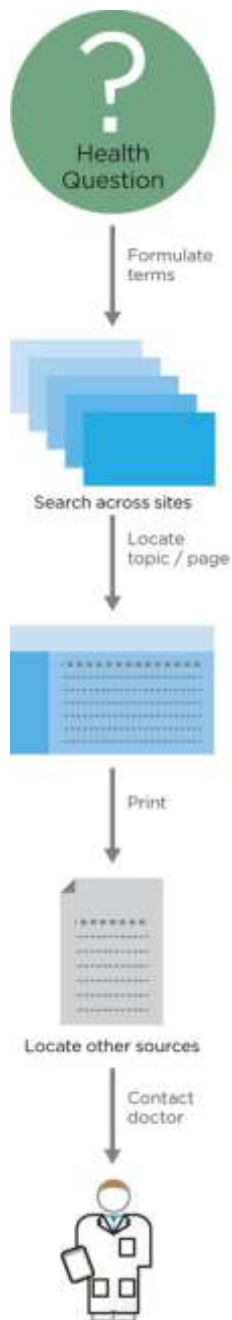




## Health Seeking | Elena's Journey

Situation	Caregiving 2 Years	Health Incident 2 Months	Diagnosis 2 Weeks	Treatment 2 Days	Living With Future				
Information Resources	Consumer websites (Everyday Health, WebMD, Mayo Clinic)	Consumer websites, physician references	Consumer/professional resources (Medscape, HealthKnowledge)	Physician references	Health communities and personal social media				
Touchpoints	Web, e-mail, workplace, home 	Doctor's office, Web, home Mutual circles of empathy 	Specialist center, Web, home Intimate circle of care 	Hospital, Web, home Personal circle of care 	Web, home, e-mail Social circle of empathy 				
Journey	Seeking family health	Focus on personal health	Significant health concern	Seeking treatment	Helping others				
Motive	Harmonious home and family	Sustain personal productivity	Recover health to at least former level	Best survival outcome	Share lessons learned				
Chapter	2	3	4	1	6	7	8	2	9

**Two points have highest leverage – Primary care & Recovery**



Health seeking includes information seeking across media.

Knowledge acquisition for making sense of health.

*Make the most of starting points!*



# Health seeking design research

RESEARCH METHODS BY NEED/VALUE

Human need	Values inquiry	Empathic design research methods
1. Physiological	How and where do participants live? What is their physical health status and story? How are food, dress, and sleep needs cared for?	Interviews Observations, checklists Personas, scenarios
2. Safety and security	What are the probable safety hazards? How do people experience safety and comfort? How are environmental and material hazards mitigated? How confident and secure do people feel?	Observations Physical audit User diary studies Incident surveys
3. Social belonging	What groups and communities are people engaged in? How do participants express their social identities? How do people relate and work together? What are their cultural events, practices, and social goals?	Scenarios, storyboarding Participatory workshops Photo journals and diaries Context mapping
4. Self-esteem	How do people experience their sense of total health? What stories do participants express about their health? What achievements, values, and life goals are valued?	Sensemaking interviews Hermeneutic inquiry Video diaries and storytelling Appreciative inquiry
5. Self-actualization	How do people frame and express their highest ideals? How do participants seek transcendent experiences? How do people want to be remembered for their lives?	Generative design research Appreciative inquiry Video diaries and storytelling




From observing

to representing

to interpreting

to co-creating





**Many Canadians have faced cancer and they have much to share.**

[Patients & Families](#) > [Supportive Care](#) > [The Truth of It Video Series](#) > [Common themes](#) > [The hard parts](#)

[Twitter](#) [Facebook](#) [Google+](#) [LinkedIn](#) [Email](#) [RSS](#)


## The Truth of It Video Series

- [Meet the interviewees](#)
- [Common themes](#)
  - Telling friends and family
  - Talking to kids
  - Getting the news
  - Be your own advocate
  - What I learned about myself
  - Body image
  - The hard parts**
  - Coping
  - Practical advice
  - Rural living
- [Learn more about cancer](#)
- [How can you use The Truth of It](#)
- [About The Truth of It](#)
- [Contact Us](#)

## The hard parts

What is the hardest part of having cancer? "I live 200 km from where the treatment is performed," says Dave, diagnosed with lung cancer at age 65. "I thought normal life was over," says Yvonne, diagnosed with rectal cancer at age 45.

Follow Dave, Yvonne and others as they talk about the most difficult parts of having cancer.

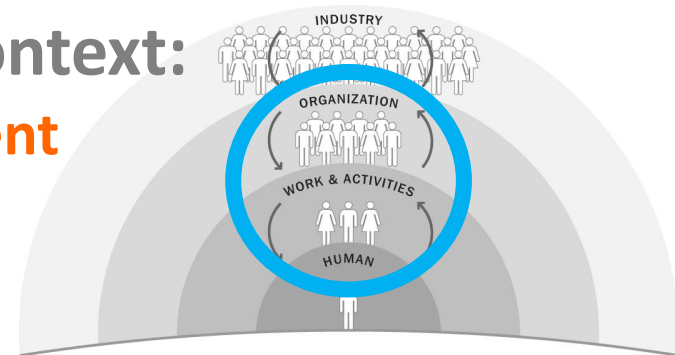


**Dave**  
Lung Cancer diagnosed at age 65.

## 2

# Care as Clinical Service

- Care “designed” today for efficiency & cost.
- *Patient experience* is not a standard of design / care.
- *Patient-centered* is not a new “user-centered”  
Risk of patient becoming a customer ...  
Service systems include care teams, IT, community
- Design research differs by care context:  
**Sequential, Iterative, Complex, Emergent**



# Healthcare AS a design practice

## SEQUENTIAL AND ITERATIVE SERVICES

	Sequential	Iterative
<b>Mission</b>	Efficient delivery of known solution	Evaluation and management of complex care for difficult problems
<b>Beliefs and values</b>	An ideal exists Uncertainty is reduced before care	Ideal state is unknowable Uncertainty is reduced during care
<b>Scope of service</b>	Narrow Higher capacity (throughput)	Diversified Lower capacity
<b>Processes</b>	Standardized Assembly-line model	Nonstandard, or no protocols Job shop approach
<b>Management policy</b>	Centralized Broad span of control Reduced variation in performance	Decentralized Narrow span of control Improvements learned by variation
<b>Human resources</b>	Conforming, conservative employees Repetitive tasks	Problem-solving experimenters Development of new variations
<b>Technology</b>	Specialized	General purpose



Adapted from R. M. J. Bohmer. (2009). *Designing care: Aligning the nature and management of health care*. Boston: Harvard Business Press.

# Clinical Design 1.0 – 4.0

- 1.0** Care design for the *health seeker* in their own world  
Fostering self-care & preventive awareness
- 2.0** *Clinical encounter*, exam, tests, diagnosis & treatment
- 3.0** *Healthcare team*, care planning & practice management
- 4.0** *Care organizations*, organizational strategy, business model design & healthcare policy

**HIT is not separate - connects to each *sociotechnical system*.**



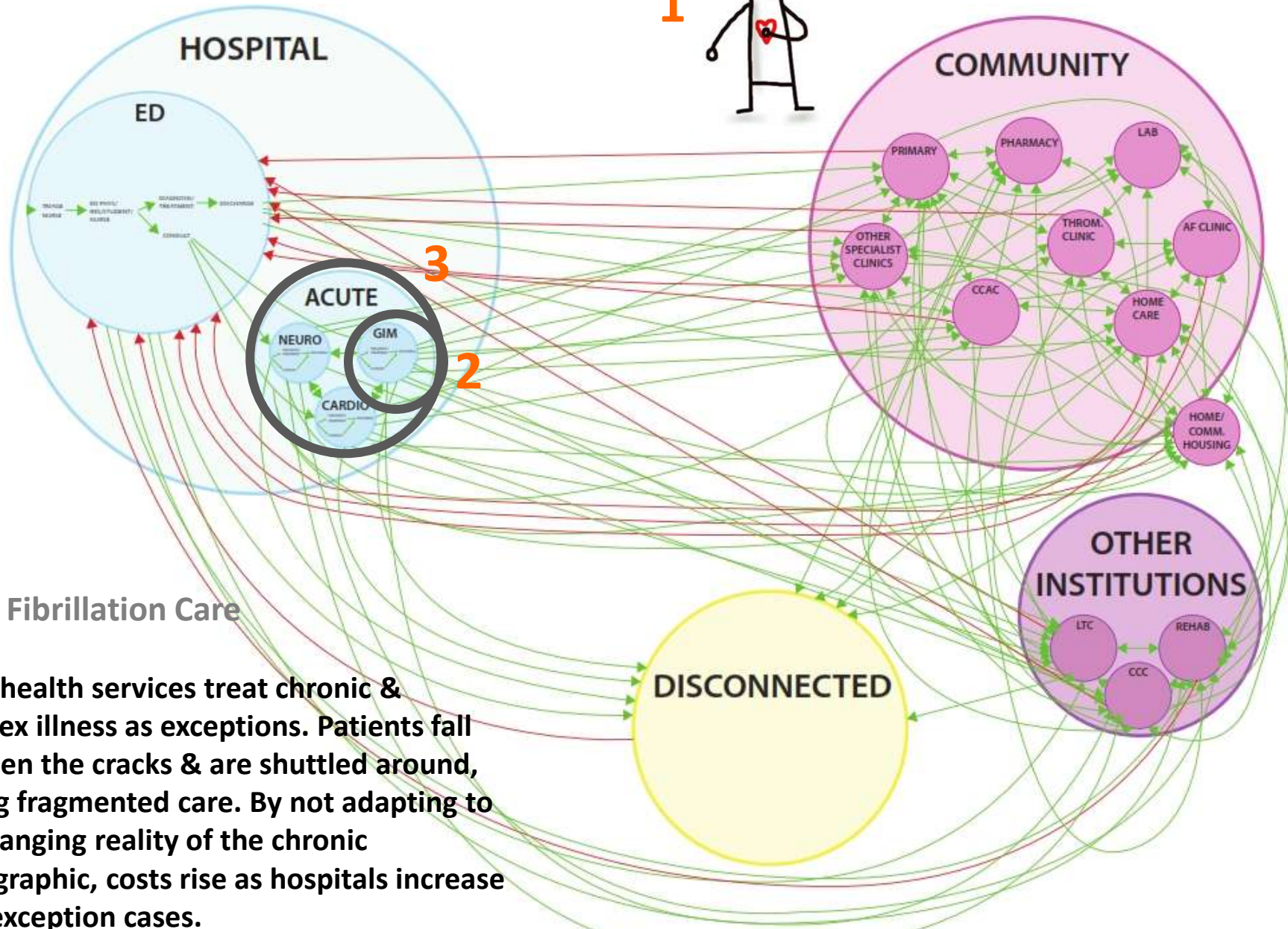
# Health-seeking in Context of Care

## Health Seeking | Patient Journey



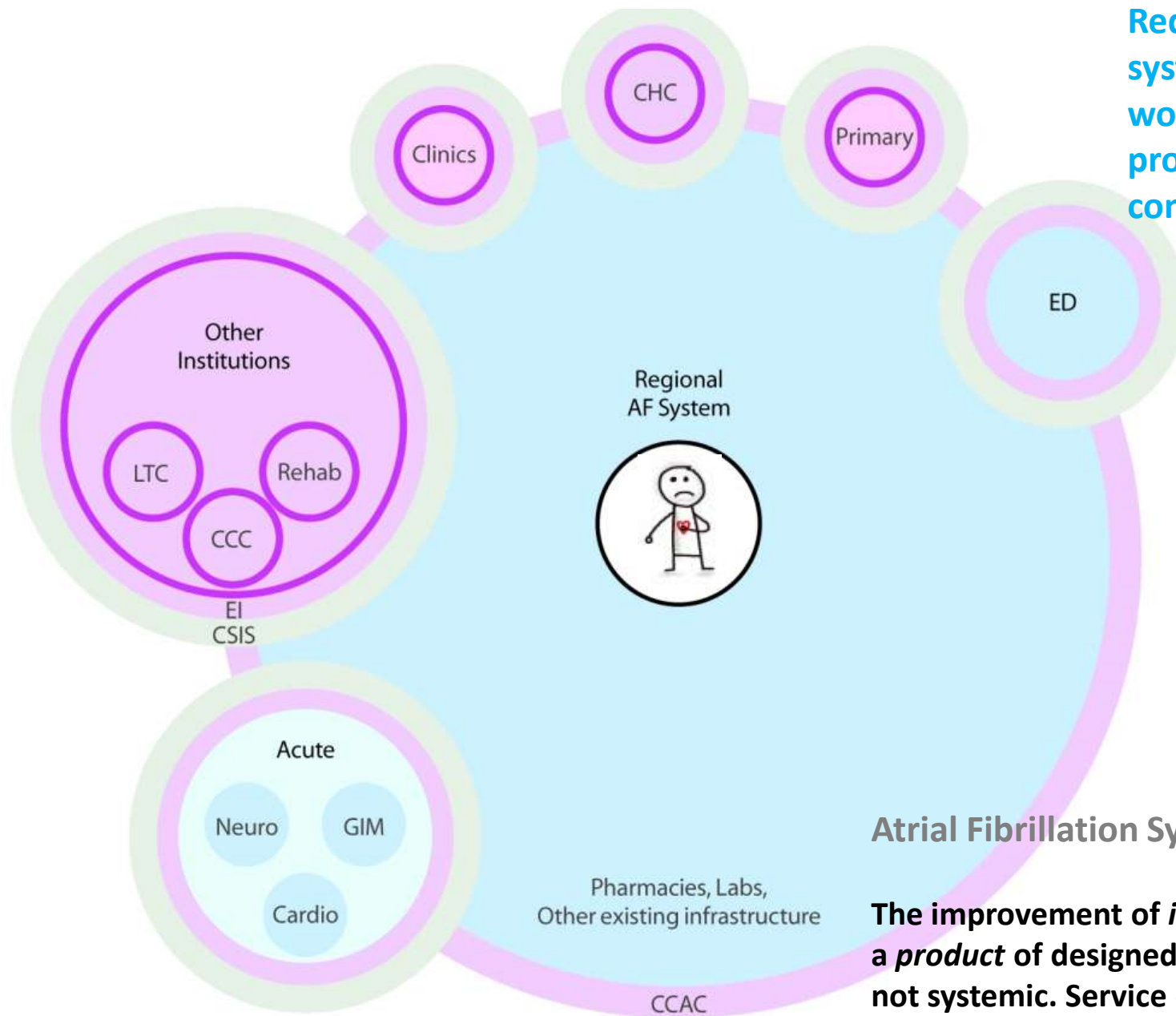
# CD1 - CD4

1



## Atrial Fibrillation Care

Many health services treat chronic & complex illness as exceptions. Patients fall between the cracks & are shuttled around, getting fragmented care. By not adapting to the changing reality of the chronic demographic, costs rise as hospitals increase their exception cases.



Redesigned as a service system - coordinated work practices, org protocols, patient communication

### Atrial Fibrillation System Redesign

The improvement of *individual* experience is a *product* of designed healthcare. Good, but not systemic. Service design must scale.



# CD2.0 - Afib Personas & Care Tools

## A Guy's Guy Tom



***"I'm not interested in taking rat poison"***

Tom is a mechanic. He immigrated to Canada from Poland at age 30. Tom refuses

1. **What colour is your heart health?**  
*By answering the questions, we can figure out how to help you feel the best you can.*

1. This past year, I have visited the emergency department and/or had unplanned visits with my family doctor with concerns about my atrial fibrillation:  
☐ a. More than once  
☐ b. Once  
☐ c. Never

2. In the past 4 weeks, I have been bothered by any of the following symptoms: fast heart rate (palpitations), shortness of breath, light-headedness, dizziness or chest pain/pressure:  
☐ a. A great deal  
☐ b. A little  
☐ c. I have not had any of these symptoms

Results  
**Your heart health is red.**  
Here is the question to ask your family doctor:  
How can you and I work together to improve how I am doing with my heart rhythm and make me at least a yellow for next time?

**Your heart health is yellow.**  
Here is the question to ask your family doctor:  
How can you and I work together to improve how I am doing with my heart rhythm and make me a green for next time?

**Your heart health is green.**  
Here is the question to ask your family doctor:  
What steps can I take with you to ensure that I stay a green?

3. 1. I have congestive heart failure.  
☐ a. Yes (1 point)  
☐ b. No  
☐ c. I don't know

2. I have high blood pressure or am taking blood pressure medication(s).  
☐ a. Yes (1 point)  
☐ b. No  
☐ c. I don't know

3. I am 75 years of age or older.  
☐ a. Yes (1 point)  
☐ b. No

4. I have diabetes.  
☐ a. Yes (1 point)  
☐ b. No  
☐ c. I don't know

5. I have previously had a stroke or mini-stroke (Transient Ischemic Attack or TIA).  
☐ a. Yes (2 points)  
☐ b. No  
☐ c. I don't know

Figuring out your score  
3 or more a's = Red  
1 or more b's and no a's = Yellow  
all c's = Green

Figuring out your score  
If you answered 'I don't know' to any of the previous questions please take this sheet to your family doctor and ask them to help you complete the quiz.  
Please write your score here and continue:

5

4

Age: 62  
Profession: Mechanic

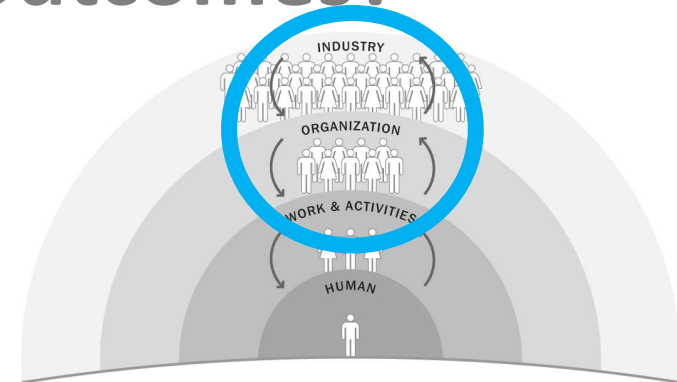
### Key Characteristics

- Identifies as a "simple guy"
- Traditional
- Divorced
- Hates technology

# 3

## Healthcare Systems

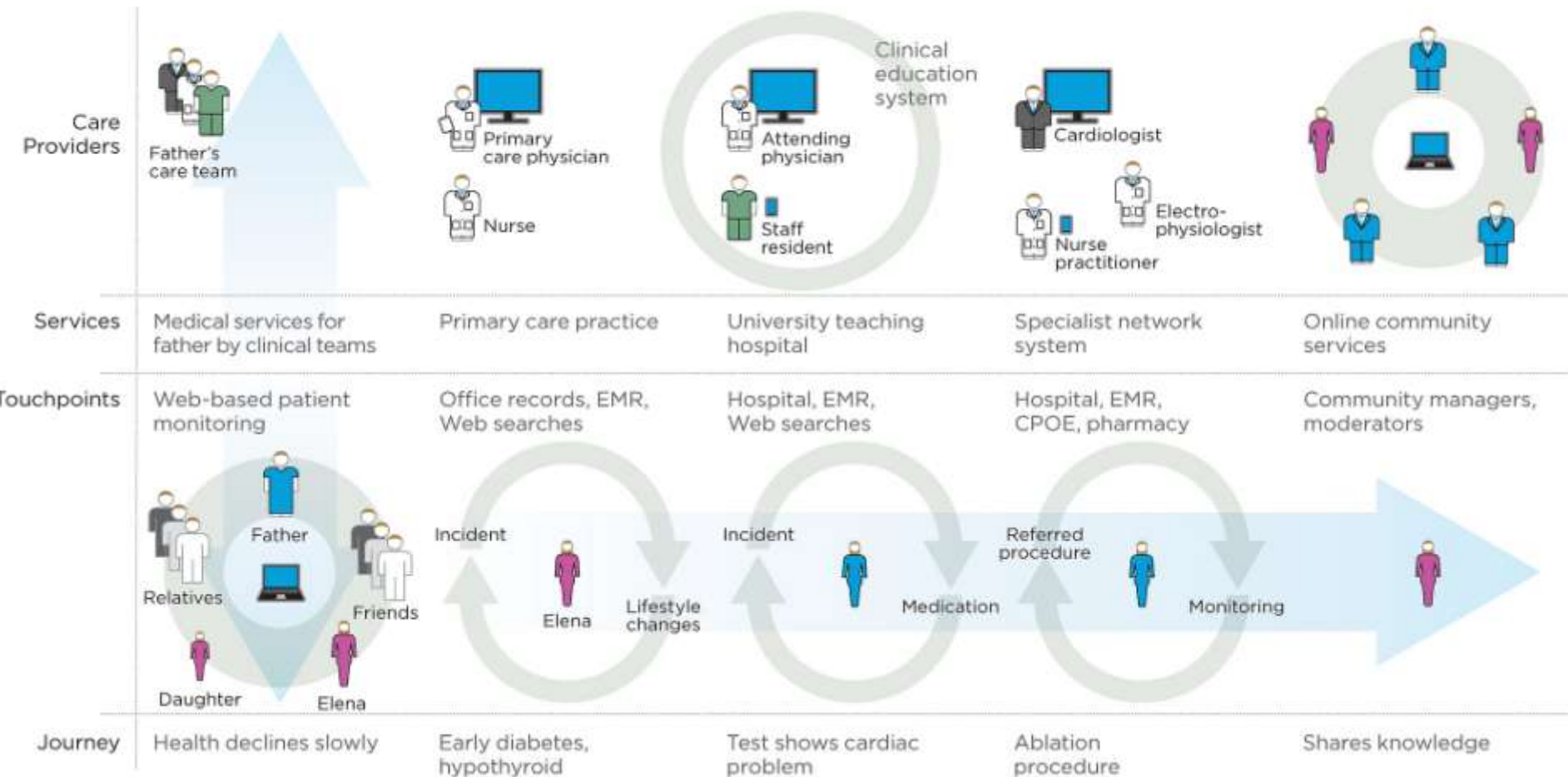
- (To date) Big Box Healthcare is disrupted by cost & policy, not by innovation ...
- Business, cultural & tech innovation.  
(The system is not just a collection of services)
- *How should* these social systems be designed for total health outcomes?





# How does a patient fall through the cracks?

## Health Seeking | In Healthcare System



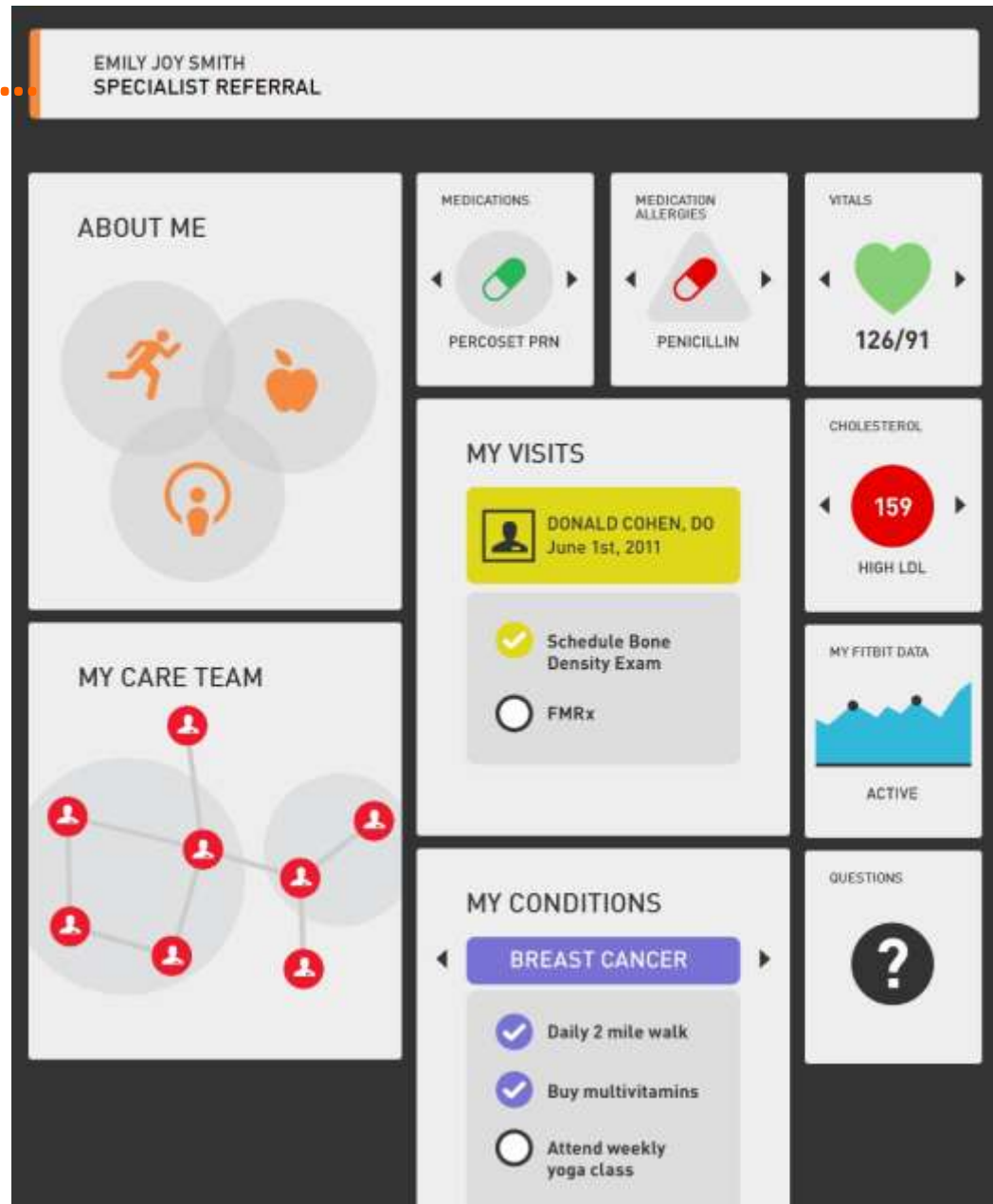
# Continuity of Care

- Patients feel they are left on their own to figure out next steps.
- Patients with serious health issues work around the system to get the best care.
- Episodic and disjointed care hides valuable connections.
- Both patients and physicians doubt the reliability of (reported) health data.
- Patients feel they are left on their own to figure out next steps.
- Patients with serious health issues work around the system to get the best care.
- Episodic and disjointed care hides valuable connections.
- Both patients and physicians doubt the reliability of (reported) health data.

<p><b>TITLE: MY CARE TEAM NETWORK</b></p>	<p><b>CCD SECTION: ENCOUNTERS</b></p>
<div data-bbox="266 396 1201 992"> </div>	<p><b>DESCRIPTION:</b></p> <p>A map presenting the patient's visits with multiple physicians in context of time and speciality for a condition.</p> <p><b>PATIENT'S VOICE:</b></p> <p>Will my doctor know who I have already seen?</p> <p>How do I communicate to my new doctor who is on my care team?</p> <p>How do I keep track of my visits, linking them to specific conditions and/or treatments?</p> <p><b>PATIENT NEEDS:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Represent what I truly care about.</li> <li><input checked="" type="checkbox"/> Present information in a way I can relate to.</li> <li><input type="checkbox"/> Help me cross-check my facts.</li> <li><input checked="" type="checkbox"/> Help me close communication loops amongst my care team.</li> <li><input type="checkbox"/> Set me up to have clarifying and guiding conversations.</li> <li><input type="checkbox"/> Clearly lay out the next steps.</li> <li><input checked="" type="checkbox"/> Help me see my trajectory over time.</li> <li><input type="checkbox"/> _____</li> </ul>
<p><b>PHYSICIAN NEEDS</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Allow me to add additional information.</li> <li><input type="checkbox"/> Allow me to communicate privately with other physicians.</li> <li><input type="checkbox"/> _____</li> <li><input type="checkbox"/> Enable me to quickly spot clean and validated data.</li> <li><input type="checkbox"/> Enable me to quickly build strong rapport with new patients.</li> <li><input type="checkbox"/> _____</li> </ul>	

## Value to Patient expressed as ...

- Represent what I truly care about
- Present information in a way I can relate to
- Help me cross-check my facts
- Help me close communication loops among my care team
- Set me up to have clarifying and guiding conversations
- Clearly lay out the next steps
- Show my trajectory over time

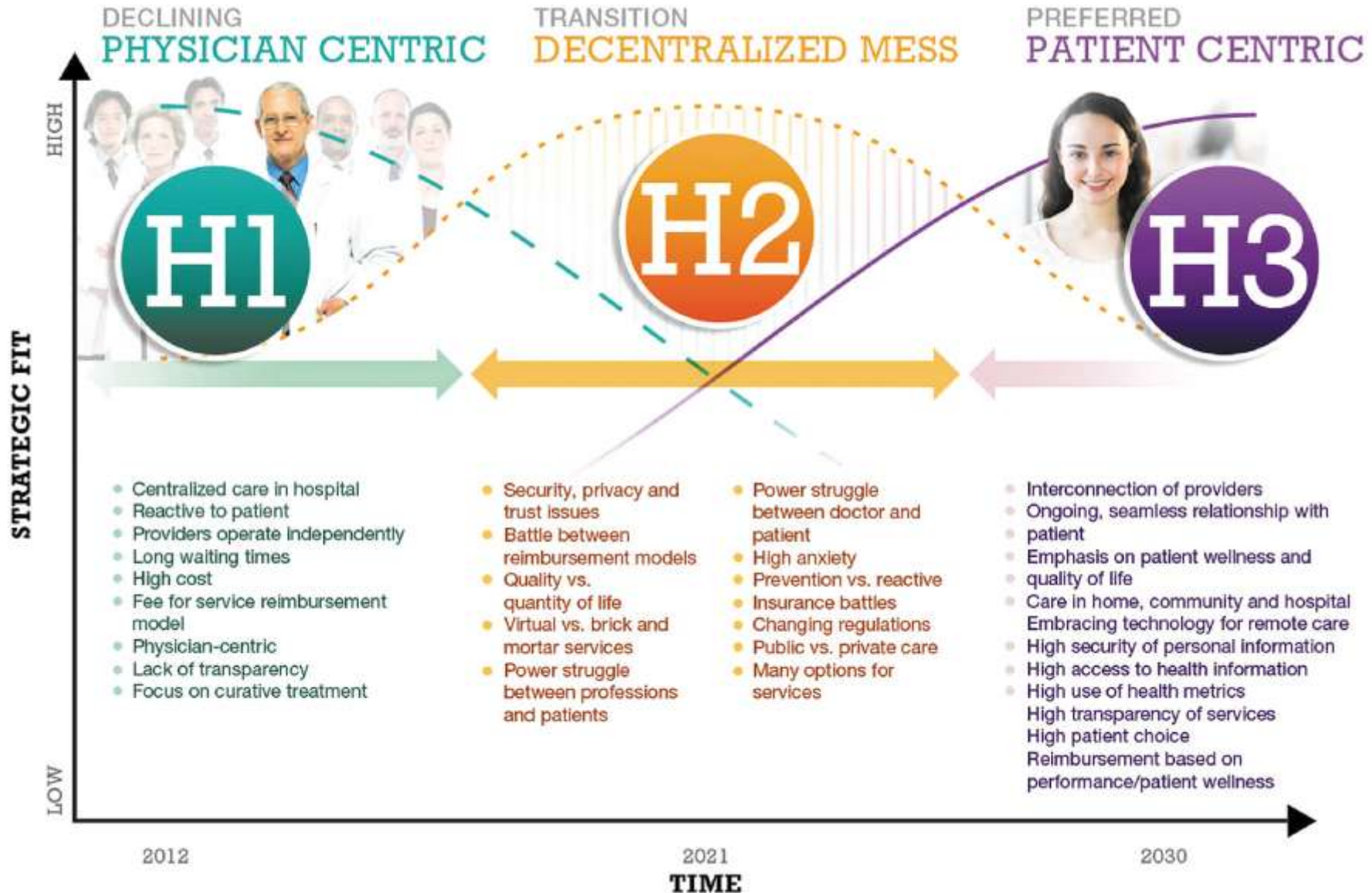


# Can we distribute care resources among different points of connection?





# Strategic Foresight – Specialized Care





To DESIGN for CARE  
is to DESIGN for  
HEALTH



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