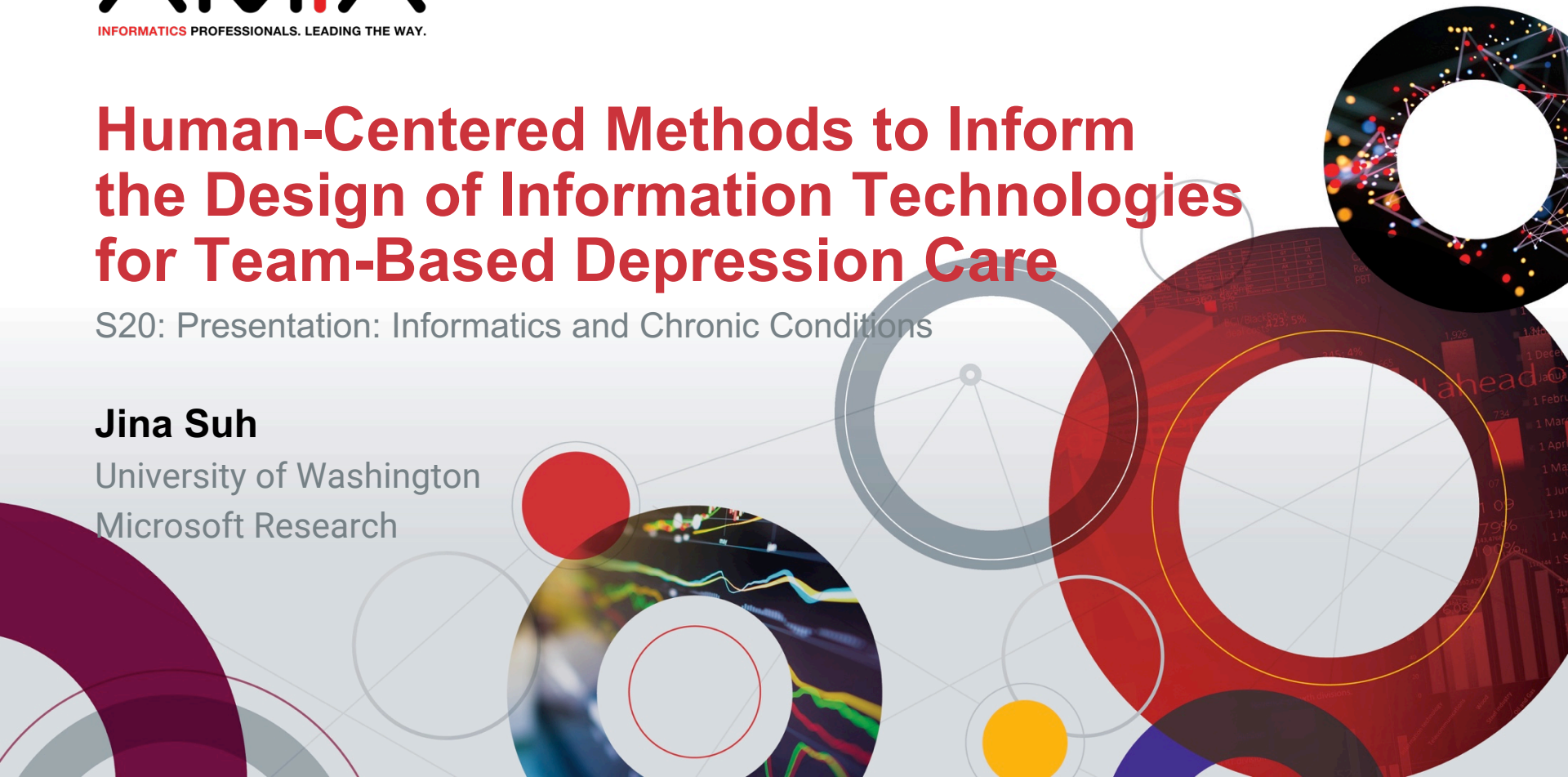# Human-Centered Methods to Inform the Design of Information Technologies for Team-Based Depression Care

S20: Presentation: Informatics and Chronic Conditions

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Disclosure

I disclose the following relevant financial relationship with commercial interests:

- Employee of Microsoft Research

Learning Objectives

After participating in this session the learner should be better able to:

- Describe two human-centered design methods
  - Semi-structured interview
  - Contextual inquiry
- Describe the benefits of gathering multiple perspectives in the design of team-based care technology
  - Incorporating perspectives of multiple stakeholders
  - Using multiple methods

Comorbid Depression and Cancer

Depression in patients with cancer is common but under-treated

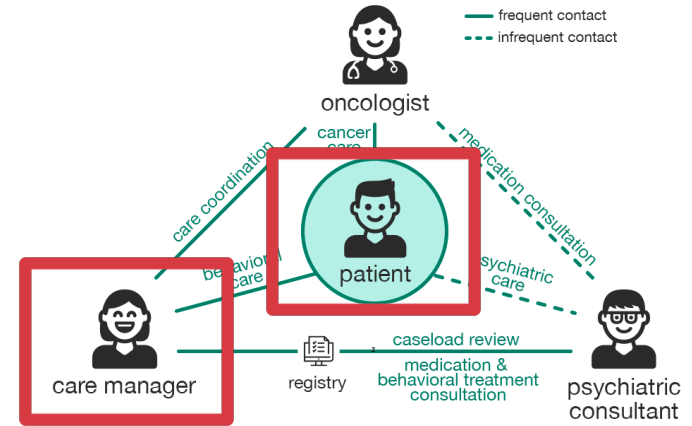Collaborative Care Management (CoCM) model is proven to be effective

Figure adapted from University of Washington AIMS Center

Vanderlip et al. 2016. *Dissemination of Integrated Care within Adult Primary Care Settings: The Collaborative Care Model.*
Fann et al. 2012. *Integrating Psychosocial Care into Cancer Services*

Designing for Complex Clinical Contexts

Many challenges presented by coordination and collaboration of multiple providers with varying expertise, roles, and priorities

- Competing priorities among providers and roles
- Complexities of both diseases
- Variable treatment modalities and methods
- Interactions between treatments

Designs must be grounded in real human needs

Human-Centered Design (HCD)

Focus on understanding the perspective of the **users** and their **contexts**
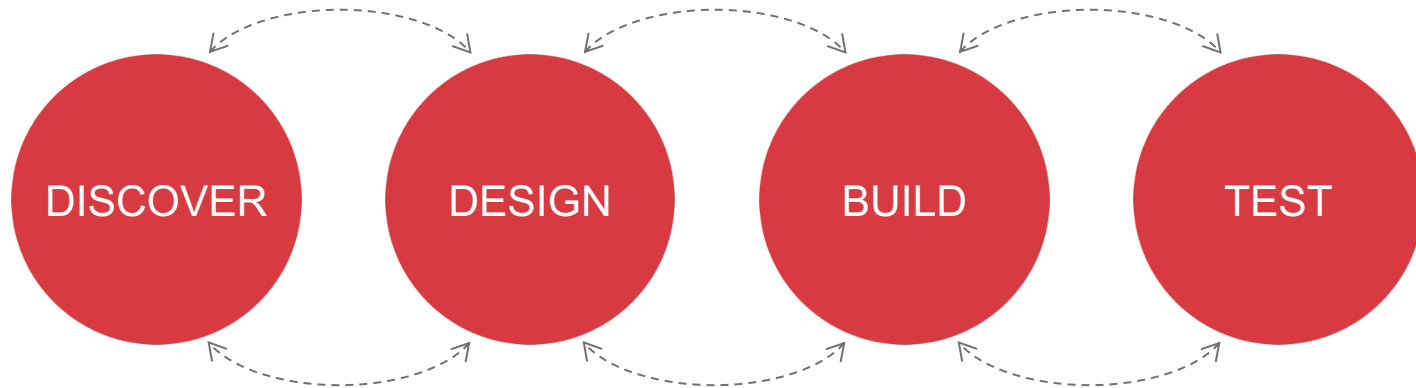
Norman & Draper. 1986. *User centered system design: New perspectives on human-computer interaction.*
Lyon et al. 2019. *Use of Human-Centered Design to Improve Implementation of Evidence-Based Psychotherapies in Low-Resource Communities*

Human-Centered Design (HCD) Methods

Semi-structured interviews

- Flexible yet guided open-ended questions

Contextual inquiry

- Field data-gathering technique
- Master (e.g., behavioral health provider) and apprentice (e.g., researcher) model

And we use these two methods

- With multiple stakeholders
- In combination

Beyer & Holtzblatt. 1997. *Contextual Design: Defining Customer-Centered Systems.*

Our Study

2 urban and 1 rural cancer centers within SCCA network

1-hour semi-structured interviews with 29 key stakeholders

- 11 patients, 9 behavioral health providers, 6 medical providers, 3 administrators

Contextual inquiries with 8 behavioral health providers

- 38 hours of observation and inquiry, 26 patient sessions
- No interference with patient sessions, but allowed to ask questions outside

Benefits of Multiple Perspectives

Added benefits

- Interviewing multiple stakeholders

- Combining interviews with contextual inquiry

Care challenges

1. Depression in patients can go undetected

2. There is a need for patient-provider communication

3. Behavioral health providers have many competing demands

4. Behavioral activation is not happening

5. Burdens of cancer interferes with continuity of depression care

#1: Depression in patients can go undetected

We observed lack of regular screening and assessment

Administrators: challenge of establishing clinic-wide screening process

- "One of the things they tried to do last year was **incentivize doing [psychosocial screening]** and it still didn't work. (laughs). They (MAs/LPNs) feel **more pressure from the providers to get in and out of the room** than they did on getting a coffee cards or other individual rewards." – Admin 1

Issue of screening and assessment is more nuanced than that

#1: Depression in patients can go undetected

Oncologists: relied on gut feelings

- *"It's based on my **gut feeling** most of the time."* – MP 1

- *"Some patients sort of **laugh it off** and say, well I've got cancer of course I'm depressed."* – MP 4

Behavioral health providers: screening deprioritized

- *"You're trying to get this form filled out, it takes **10 minutes out of your 30 minutes** time slot."* – BHP 4

- *"When you're going into a **crisis moment**, it's hard to just say, 'Oh, wait. Let me give you this survey.' (laughs)"* – BHP 2.

Patients: already overwhelmed

- *"You just get really tired of going to doctors' appointments of any type. I just associate this place with (laughs) **not good feelings**. The least amount of time you have to be up here the better."* – Patient 8

#2: Need for patient-provider communication

Patient-provider communication is important for shared understanding and engagement in care

There are hidden tensions between stakeholders

#2: Need for patient-provider communication

Patients overwhelmingly expressed the need to communicate with providers

- *"**I'd like more flexibility** … I can't really tell when I'm going to be in some type of crisis or … when life situations happen where ... I could really use some guidance through that. So **it would be nice if I were able to say, hey I'm going through something like now. Can I come in tomorrow?** But I know that's not possible, so."* – Patient 2

Providers feared incoming stream of data and felt accountability that could not be matched with availability

- *"[handling suicide ideation] would be really hard … **there's just no way to ensure that there could be a timely response to that**."* – BHP 9

- *"**I don't like the idea of having damaged relationships with my patients**. And external data that gets ignored is another way that my relationship with another human being gets destroyed."* – MP 1

Gathering perspectives from multiple stakeholders

Identify each stakeholders' barriers

Discover tensions between stakeholders

#3: BHPs have many competing demands

Caring for patients with comorbid cancer and depression is complex

Interviews revealed that BHPs have many competing demands

- *"The social worker does the **gamut of social work services** whether it be like getting someone a ride here all the way to providing CBT."* – Admin 3

- Navigational assistance (transportation, housing), financial assistance (social security, unemployment), advance directive (power of attorney, will) take time away from mental health assessment and psychotherapy

- *"Part of this is in clarity what they do and don't do and making sure that people understand that they're not like the **dumping grounds**. In many places I've been, that was kind of like, **if you didn't know what to do with it, send it to the social worker**. (laughs). Yeah. That's not okay."* – Admin 1

Issue of resources and demands are more complex

#3: BHPs have many competing demands

Observation revealed that BHP's care contexts are volatile and dynamic

- Lack of time and access to dedicated resources (e.g., consult room, EHR)
- Having to carry binders full of resource materials
- Sessions in infusion suites or waiting rooms
- Frequent crisis management
- Retroactive charting of patient encounters

#4: Behavioral activation is not happening

Behavioral activation (BA) is effective in treating depression

Interviews revealed that BA was under-utilized

Mismatched definitions of BA

#4: Behavioral activation is not happening

Observation revealed that BHPs adapted formal BA

- Incorporated active components of BA in sessions

BHPs made frequent adjustments to treatment plans

- *Side effects and changes to stressors*

- *"We're **not a therapy center**, so it's not like, 'Oh, we're gonna do 13 weeks and this is the course of what's gonna happen,' right?"– BHP 4*

- *"There will be times where we have one session, and we've done a lot of Behavioral Activation, but then the next time they come in, maybe they've gotten some really bad news, and they're just really distraught. In that session, **rather than following-up with the Behavioral Activation**, we're kind of doing more of crisis management or some grief counseling … because they're **not in a place where they want to talk about** ... you know, the Behavioral Activation stuff" – BHP 3*

#5: Cancer interferes with depression care

Burdens of cancer and competing demands interfered with continuity of depression care

Missed opportunity for improving continuity of care

#5: Cancer interferes with depression care

Action items are discussed during the session but lacked documentation

- Action items were not documented or were documented on paper
- Past events were recalled primarily from memory and not documentation

Documentation of action items were not easily accessible when needed

- *"Sometimes I would remember and then **I can't quite find the paperwork** and then it's like 'oh, crap, I'll find that later and do that,' and then, you know, lose track of time."* – Patient 4

Forgetfulness and fatigue are common side effects

- *"My, you know, **chemo brain** is real and I forget everything."* – Patient 8

Gathering perspectives from multiple methods

Paint an accurate picture of the care environment

Develop a shared understanding of core constructs

Augment stated views with external perspectives

Parallel Journeys

Suh et al. 2020. *Parallel Journeys of Patients with Cancer and Depression*

https://tinyurl.com/paralleljourneys

Practical Application of this Session

Gathering perspectives from multiple stakeholders

1. Identify each stakeholders' barriers
2. Discover tensions between stakeholders

Gathering perspectives from interview combined with contextual inquiry

3. Paint an accurate picture of the care environment
4. Develop a shared understanding of core constructs
5. Augment stated views with external perspectives

Apply these methods early!

Thank you! jinasuh@cs.washington.edu

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Thank you to collaborators and participants

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Takeaways

- Gather perspectives from multiple stakeholders and with multiple methods
- Apply HCD methods early in the design process

For a deeper view of challenges and design opportunities

- Suh et al. 2020. https://tinyurl.com/paralleljourneys

SCAN ME

Thank you!

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