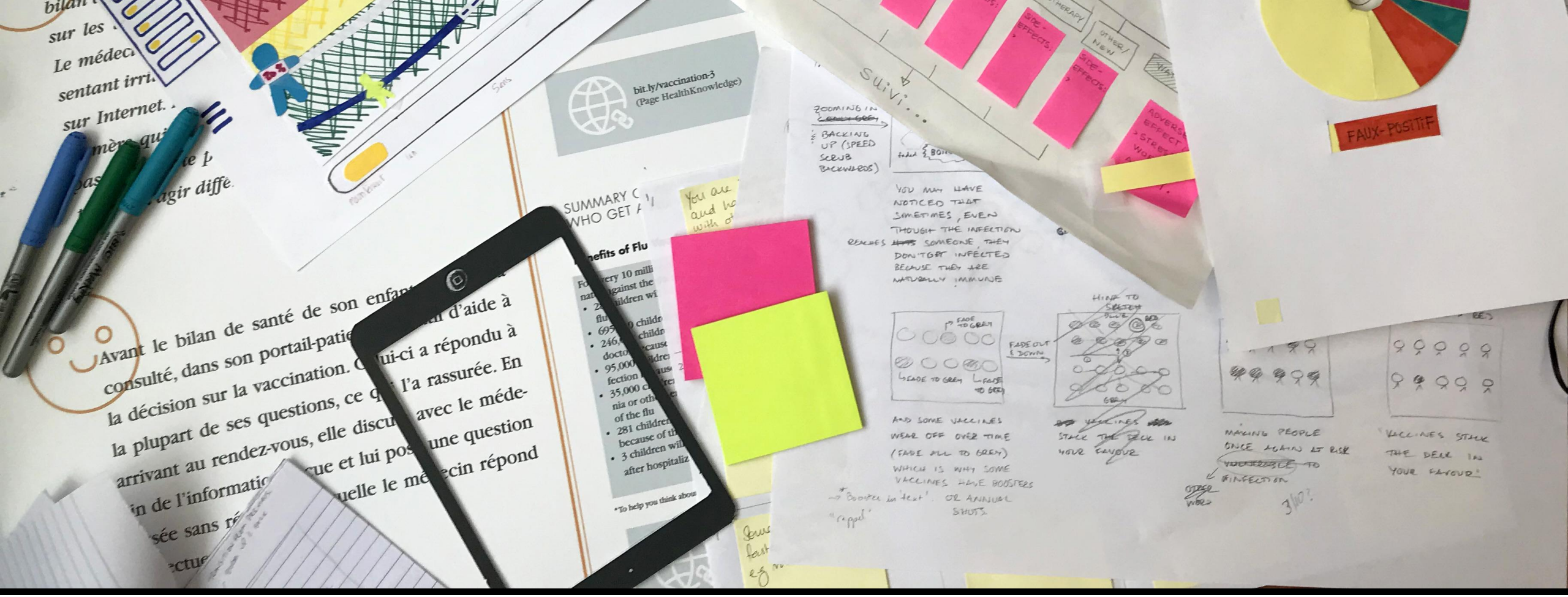

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DESIGN METHODS & APPROACHES IN IMPLEMENTATION RESEARCH & PRACTICE

Holly Witteman, PhD
Jan 19, 2018

DECLARATIONS

Funding

- PI: CIHR, PCORI, FRQS, CFI, MERSTQ
- Co-I: AHRQ, NIH

I declare I have no other known conflicts of interest

HUMAN FACTORS ENGINEERING

Designing for the way people **are,**
not the way **we wish they were**

Adapting systems to people,
rather than expecting people to
adapt to systems

4 METRICS FOR GOOD SYSTEMS

Good **functionality:**

- It **works**.
  - System does what the design specifications say it should do.

Good **usability:**

- I **can** use it.
  - System is easy & intuitive to use.
  - Person using the system can complete task(s).

Good **accessibility:**

- **Most/all people** can use it.
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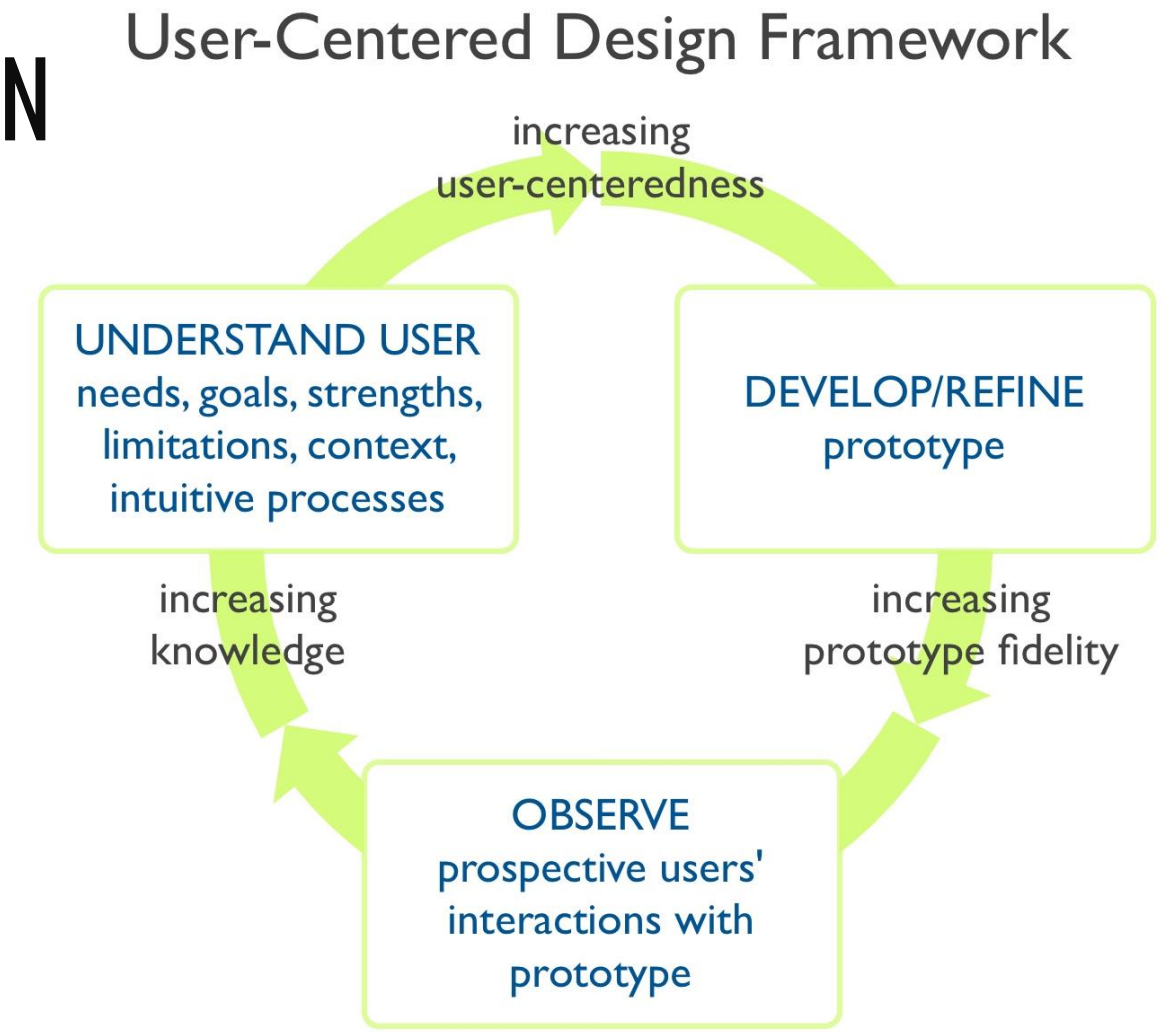
Good **user experience (UX):**

- I **enjoy** using it.
  - Person feels good while using system.

USER-CENTERED DESIGN

(More or less) related terms

- Human-centered design
- Design thinking
- User experience design
- Goal-directed design
- Co-design
- Co-creation
- Participatory design
- Plan-Do-Study-Act
- Agile



Witteman et al., *Systematic Reviews*, 2015
DOI: 10.1186/2046-4053-4-11

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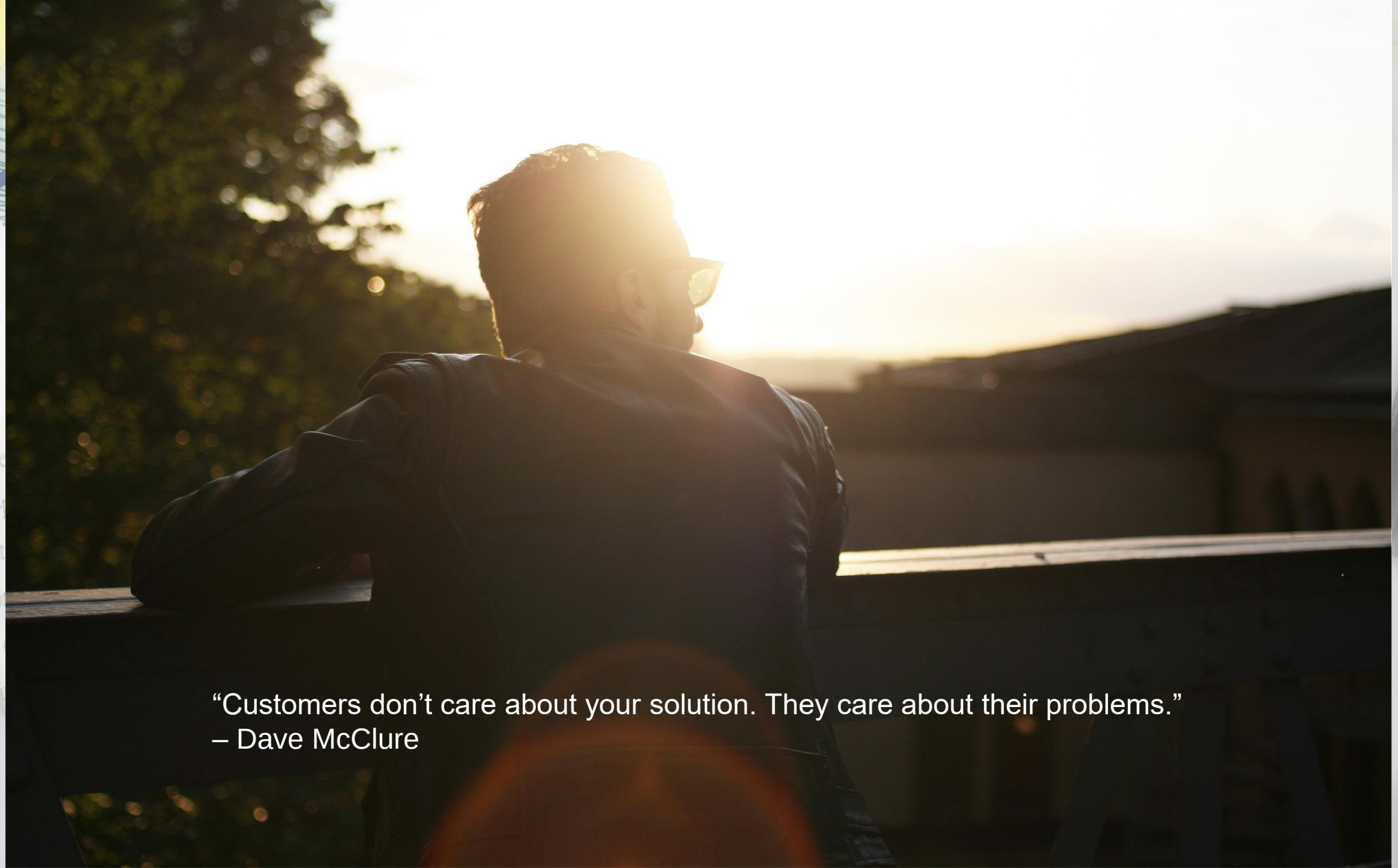
DESIGN FLIPS THE SCRIPT

Ask not: “How can we get people to use our system?”

Ask: “How can we make our system useful to people?”


“Customers don’t care about your solution. They care about their problems.”
– Dave McClure

USER

Someone who uses something (a technology/system/thing/procedure …)

- to accomplish a task
- to accomplish a set of tasks
- in pursuit of a goal

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Image: Black & Decker, Canadian Tire

DEFINING & ALIGNING GOALS

What are my users' goals?

What are my (research team's) goals?

Are these the same?

- Yes: good to go
- No: user-centred design may not be appropriate; project faces significant hurdles, lower chances of success

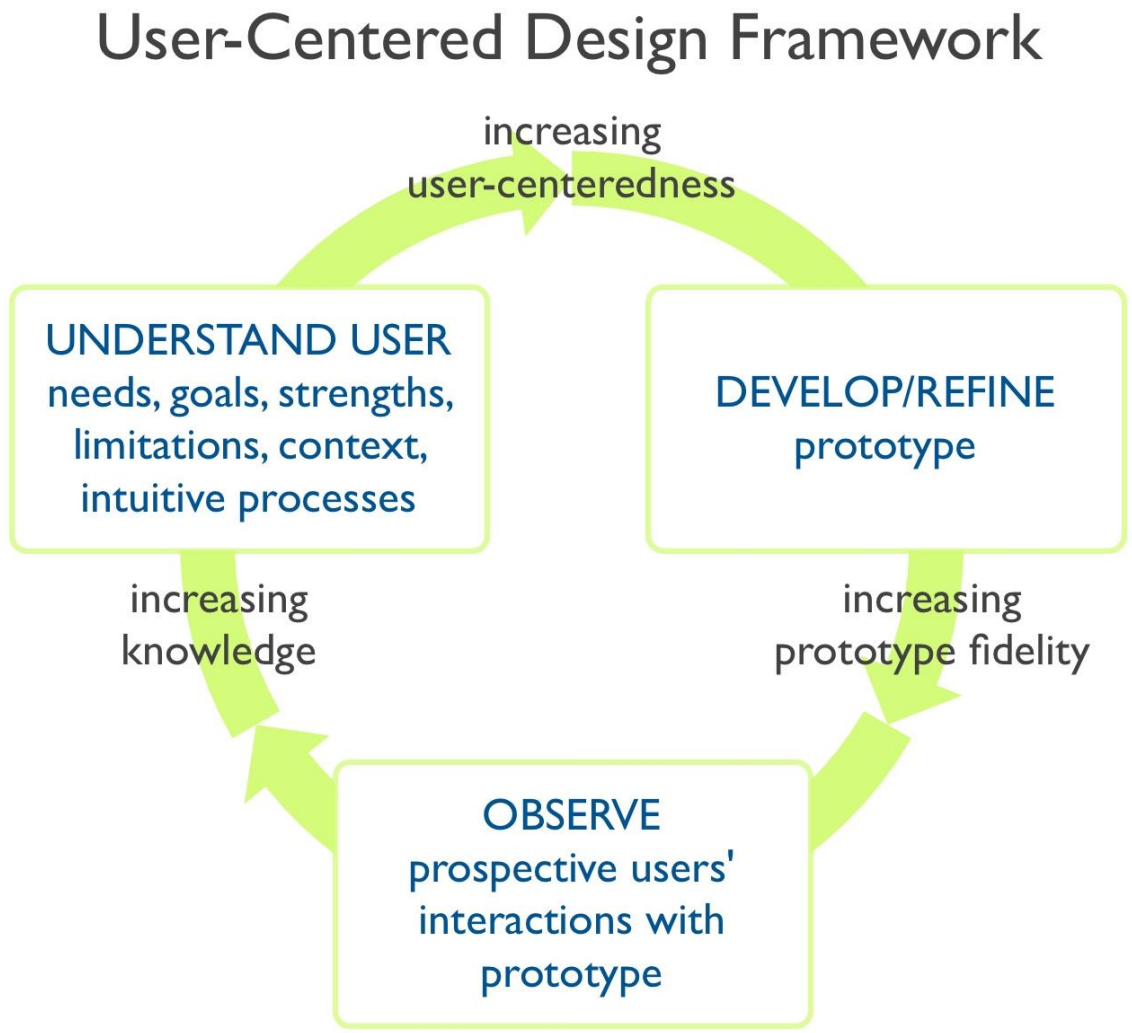
KEY POINTS

1: Iterative cycles

2: More than needs

3: Prototype early

4: Observe, not ask



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EXAMPLE PROCESS

Observe existing processes via shadowing (UNDERSTAND USER)

Focus groups with users (UNDERSTAND USER)

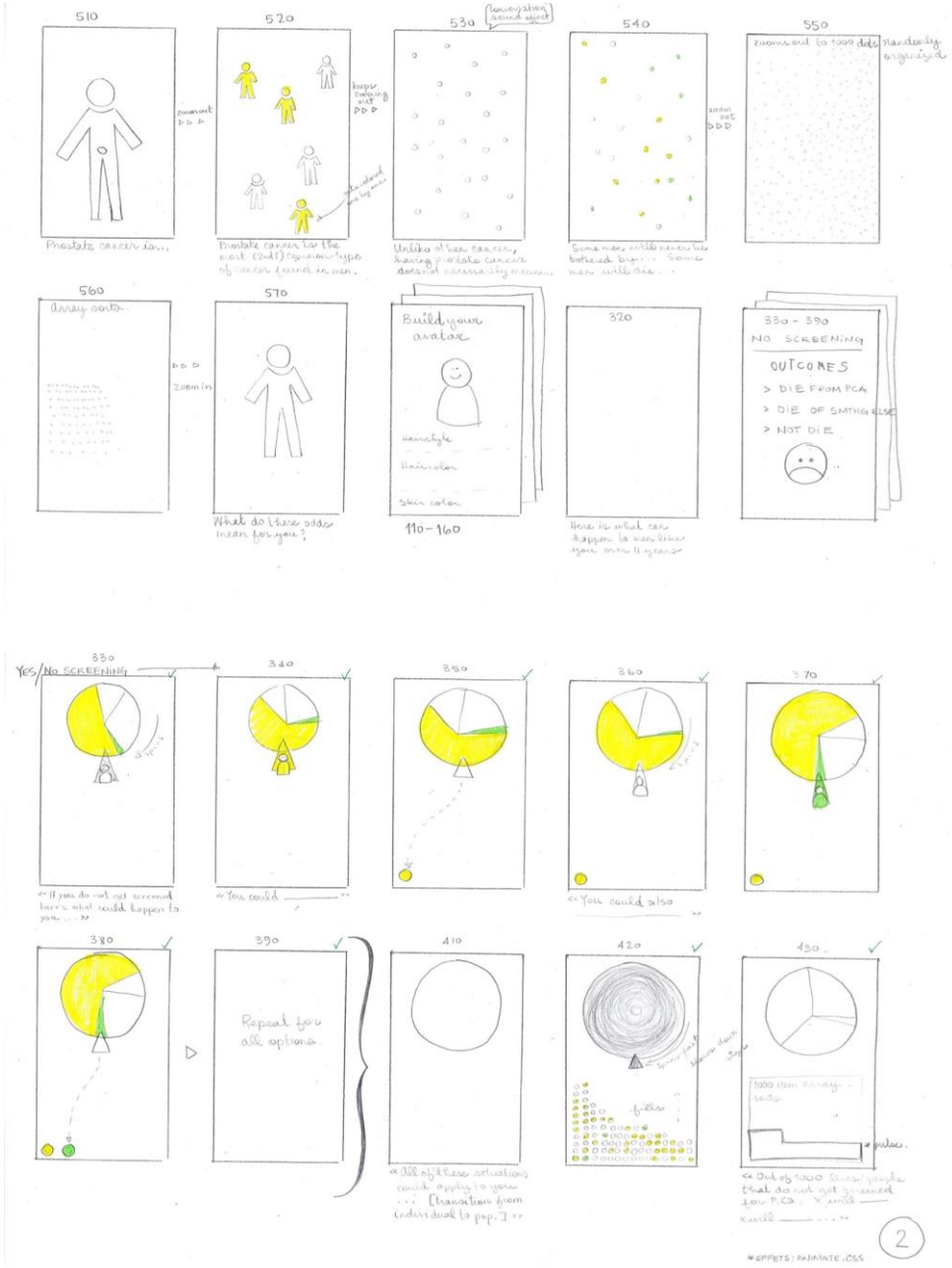
Participatory design workshop with users & other experts (DEVELOP)

Test candidate designs (OBSERVE)

Interpret test results (UNDERSTAND USER)

Refine design (REFINE)

Test again, repeat



Impact d'un individu Impact dans une communauté

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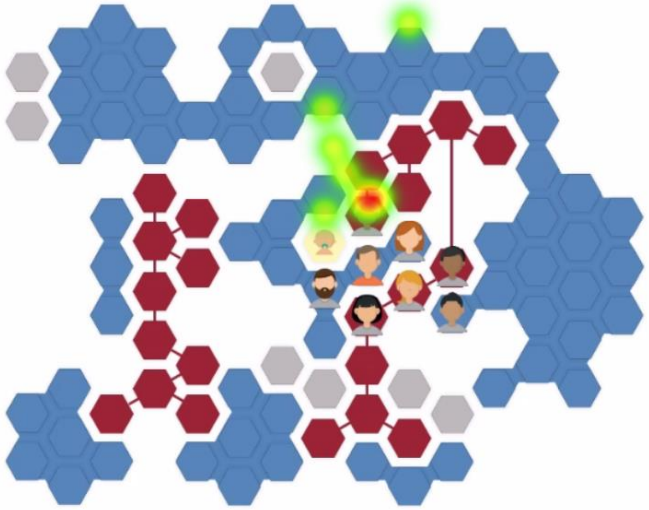

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USER TESTING

Image credit: Holly Witteman

USER TESTING

Basic concept:

- See how people respond
  - Not asking whether they like it/what they think
- Fix problems/adjust design accordingly
- Efficient way to discover problems before launching expensive pilot study or trial
  - You want bad news here, not after the trial is over or your intervention is implemented ("Fail early, fail well")
  - Most useful feedback: the feedback you don't want to hear

USER TESTING: RECOMMENDATION

Table with 5 columns:

- 1: design element
- 2: what you want this element to convey (a useful design exercise anyway!)
- 3: what users understood from this element
- 4: how this element made users feel
- 5: other comments, key quotes

Think of it like hypothesis-testing your design

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WHEN USER TESTING ISN'T THE RIGHT METHOD

Functionality: standards (various), technical testing

Accessibility: standards (WCAG 2.0), simulations

Image credit: http://www.colourblindawareness.org/wp-content/themes/outreach/images/slider/living/traffic-light_p.jpg

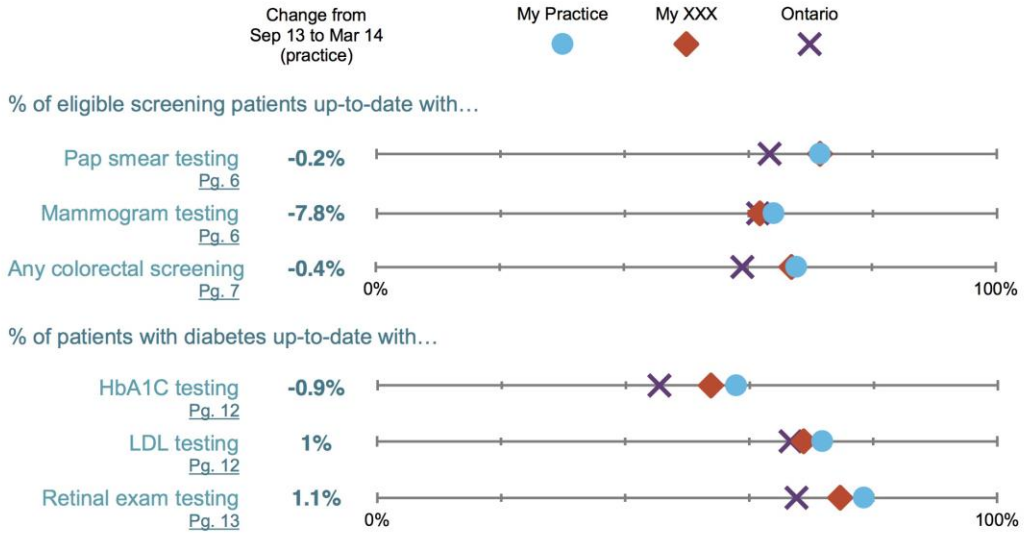
ORIGINAL

Dashboard

Data reporting period ending: **March 31, 2014**

My Primary Care Enrollment Model (group type): **XXX**
My Group Number: **Group Ag.**
My LHIN: **LHIN Ag.**
My Rurality Index of Ontario Score: **0 - Major Urban (0 to 9)**

How well are we doing?



What resources are our patients using?

	Change from Sep 13 to Mar 14 (practice)	My Practice	My XXX	Ontario
Less/ Non-Urgent ED Visits (rate per 1,000)* Pg. 19	-6.3	160.0	172.4	148.4

Who am I caring for?

Pg. 28

1587	41.4
# patients Pg 29	Age (mean) Pg 29

47.3 %	8.7 %
% male	% rurality

To find out more information about any particular indicator, please click on the page number links located under each indicator

*Adjusted for age, sex and morbidity.

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V21

Primary Care Practice Report — **Health Quality Ontario**

Overall Performance in Quality Indicators

Data as of March 31, 2016

	Where can I improve?	Average performance	What am I doing well?
Cancer Screening	• CRC screening	• Pap smear	• Mammogram
Diabetes Management	• HbA1C • LDL	• Retinal test • ACE inhibitors/ARB	• Statin
Health Services Utilization	• Total ED visits • Urgent ED visits • ACSC COPD	• Less urgent ED visits • ACSC adm. total • ACSC adm. asthma • ACSC CHF • ACSC diabetes	• Hospital readmissions within 30 days • Hospital readmissions within 1 year • Visits to own physician

View your patient information and demographics

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KEY TAKEAWAYS

Be clear about goals

- What are they?
- Whose are they?

Fail early; fail well (seek negative results as early as possible)

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