



Trusted Pandemic Technologies

10/29 COVID-19 Testing Challenges and Opportunities

Decision Lab Speaker - Brooke Struck

Behavioral Approach on Pandemic Response

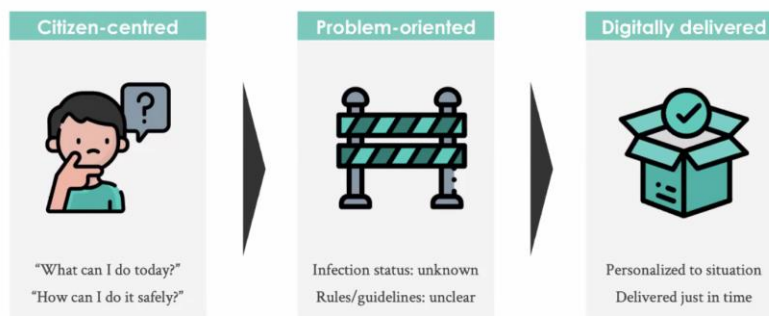
Research Division at the Decision Lab - Socially conscious applied research firm using behavioral science to create positive outcomes for individuals and communities

Behavioral approach is citizen centered (“What can I do today”, “How can I do it safely”), problem oriented and digitally delivered.

Brooke mentions that in Canada the messages sent are evolving very rapidly. Notes need to personalize message of one’s status and what rules/guidelines to be given. Notes are given at time to be followed (ways to improve behavior).

Note illustration below:

How does a behavioural approach reframe the problem?



They want to simplify complex choice environment . Still working on it.

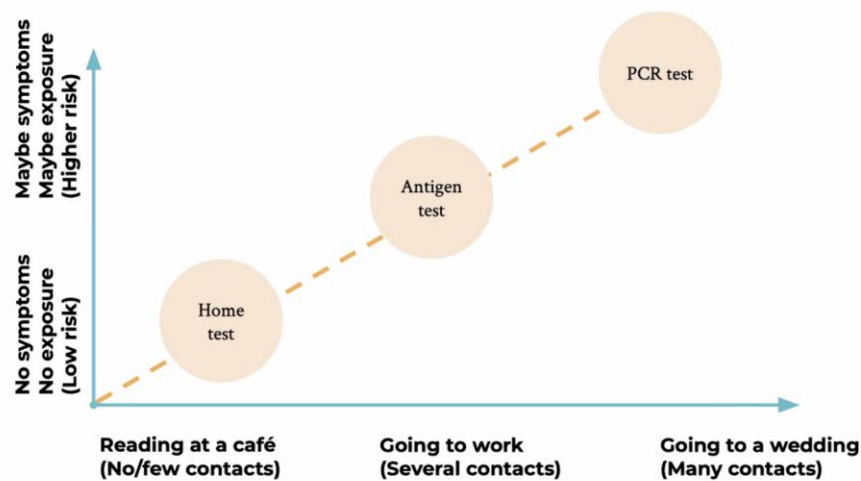
For situations discussed that are risky, send message that user would be saving lives for doing this. Emphasis on user empowerment (positive messages) rather than negative messages that lead to pandemic fatigue.

Note diagram before



With new testing, information and technology, new potential decisions can be given. Note illustration below. Mentions the need of simplification to promote good behavior from citizens.

Simplifying a complex choice environment



Provides example of someone ultimately getting notified to adopt different behaviors. Illustration shows how only using manual contact tracing leads to info being introduced too slowly.



A binary tracing app can make information come faster to user but still there is a potential that user still spreads the virus. Note illustration below where user doesn't go to a sensitive area but still to went a crowded area before being notified



Note an example of an app that provides RISK assessment . COVI app is used (Canada's EN app). Promotes behavior to be more careful even if test results of Stranger not given yet. Activity based notifications can be very valuable.



Questions

What tools they used to interpret actions and ensure security?

Used AI to survey inputs and fraudulent inputs. Test results need to be validated via special keys from PHA. Their needs to controls both automated and manual to ensure app is not compromised for users.

Testing - PathCheck

Apps only play a role in Trace but can it play a role in Test and Isolate. 3 phases: I) UX for tests, ii) Health verification, iii) analytics dashboard

Testing can be used for identifying cases, ascertain treatment methods, etc but there are many challenges

From the example of White House Rose Garden Incident, misunderstanding of efficacy of rapid tests and timing delay

Four papers coming out:

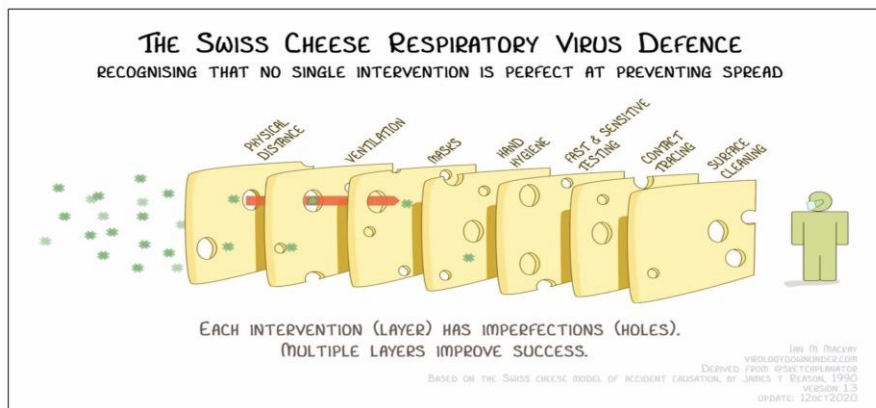
Testing Landscape and Challenges

- Paper A: **Clinical Landscape** of COVID-19 testing
 - Scenario of current testing methodologies and their effects
- Paper B: **Digital and Data Management Landscape** of COVID-19 testing
 - Policy, Procedure and data collection, Dashboard tools
- Paper C: **Challenges and Unintended Consequences** of COVID-19 testing
 - Privacy, Efficacy, Mismanagement and Miscommunication
- Paper D: **Solutions**
 - Policy and development, UX, Privacy Algorithms and biochemical

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Notes a desire to create a Swiss cheese approach in which while each intervention has imperfections, multiple layers improve success. Apply this as part of EN workflow

Assessments of Risks and Incident Preventions



Notes how native testing methodologies have their own weaknesses, but a Swiss cheese approach covers those weaknesses. Also notes new testing methodologies like COVID-19 Dogs or saliva tests

What if Test go Rogue?

Four main challenges on testing : Privacy, Testing efficacy, workflow and miscommunication.

While EN takes privacy seriously, testing throws privacy out of window.

10/29 COVID-19 Testing Challenges and Opportunities

1. Privacy
 - User being subjected to excessive data collection to get tested, anonymity impossible
 - Poor data management, storage
2. Testing Efficacy
 - Clinical efficacy, accuracy of tests etc ,
 - Record linkage (same user over time), user linkage (user ID to test results)
3. Workflow and Logistics
 - Policy, cost, delay in testing/reporting, not enough tests,
 - Optimal test not suggested, behavioral nudges
4. Misunderstanding/Miscommunication
 - Tests results, timing factor, accuracy confidence, follow up not well explained
 - Hierarchical info sharing

Six consequences occur because of these challenges:

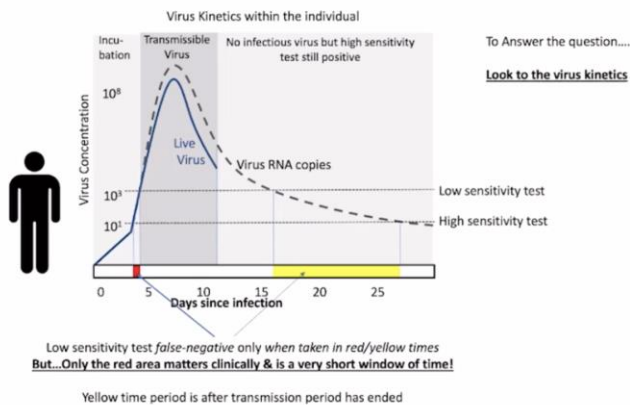
- Disease Spread
 - Spread not reduced, health system overwhelmed (with worried well)
- Individual Behavior
 - Mistrust, panic, conspiracy, risky behavior, following “wrong” guidelines
- Societal impact
 - Discrimination, inclusivity, trust
- Economic
 - High cost of testing, too long to reopen
- Security/ bad actors
 - Fraud, identity theft, data breach
- Tech rollout
 - Cost, complexity, OS-dependence, data-availability of analytics

All of this makes Tech rollout extremely expensive. These things have made the situation out of control in many scenarios.

As a result, the hope is that EN can help with testing to reduce these problem.

Slide below from Harvard professor shows that PCR tests only valid for one day. What matters is DAY 5-10 after infection. EN apps haven’t acknowledged this. Concern that once tested, people feel that they’re superhuman.

2. Testing Efficacy: Timing and Sensitivity



This suggests activity feeling guide in the COVI app can be useful to solve this problem.

Conversation will transform from pure EN to how it integrates with testing.

Email to contact for info on research papers:

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Questions

What are thoughts on OTPs being delivered at the time someone's test results are e-mailed from the testing lab or vendor, to speed up notifying contact more quickly than waiting for the health dept. to call.

Notes webinar and presentation notes on UAB's hashing of mobile numbers. Approach lead to four hour turn arounds. Does require changes in verification process.

In general, if there is a tight integration with testing app and EN app, then there could potentially be a reduce turn over rate.

Concerns about privacy for testing

CDC currently building the plane as they fly it because this situation is unprecedented. Haven't heard anything specifically from federal agencies on this concern. Problem widespread even in places like MIT

Some areas' EN apps are not allows to show results in app but pushes them to browser. Believes shortening the loop means to take a step back to let people get notified.