

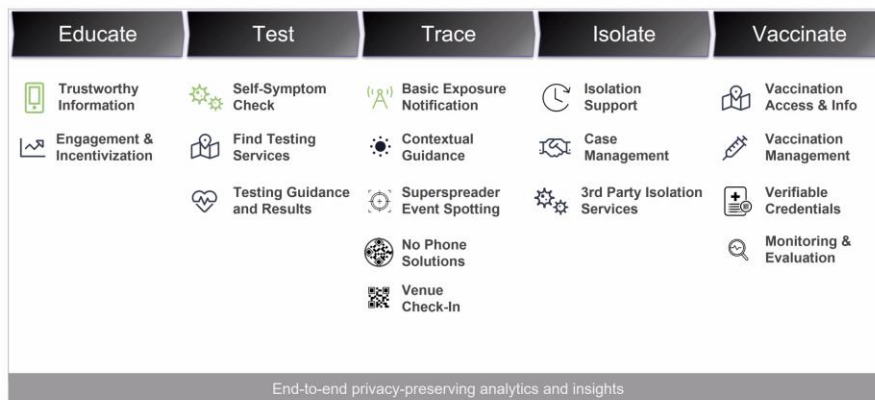


Trusted Pandemic Technologies

11/12 MIT Webinar

The goal of Pathcheck is to create a decentralized privacy preserving system? Furthermore, one that is integrated in the illustrated workflow below

EN apps will become Digital Pandemic Response



Challenges

Reminder of four open source documents on various challenges to be found in EN implementation

Main four challenges of testing:

Privacy

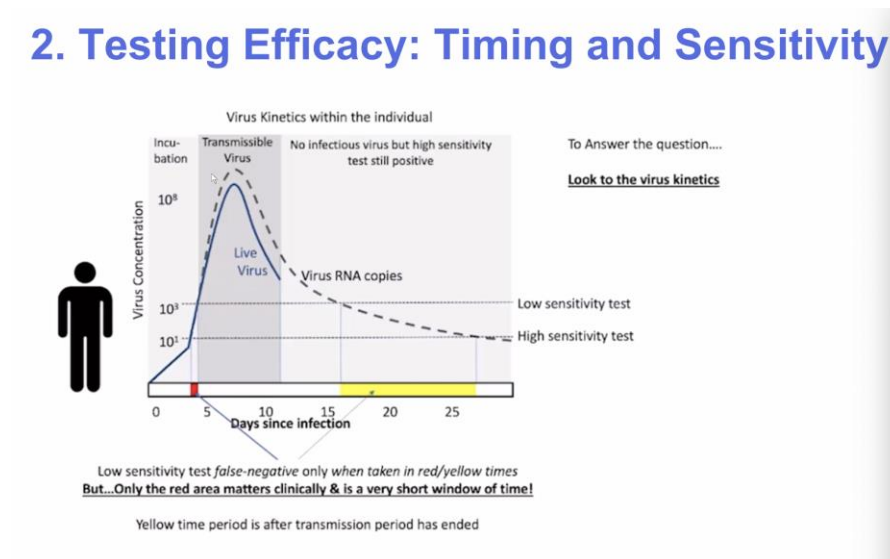
Testing Efficacy

How do you figure out if the same users are tested over time? Are we reaching the masses?

Infectiveness is found in the grey zone (after a few days of infection)

Conclusions : Low cost rapid test is good enough and positive enough during the worst part of infection

2. Testing Efficacy: Timing and Sensitivity



Admittedly, there are ethical questions on rapid testing

Main Conclusions:

Tests are being used in wrong time windows. Wrong types of tests being used(PCR vs Antigen), Users do not understand meaning of results

Comment

General concern on how to describe these findings to public officials

Workflow and Logistics

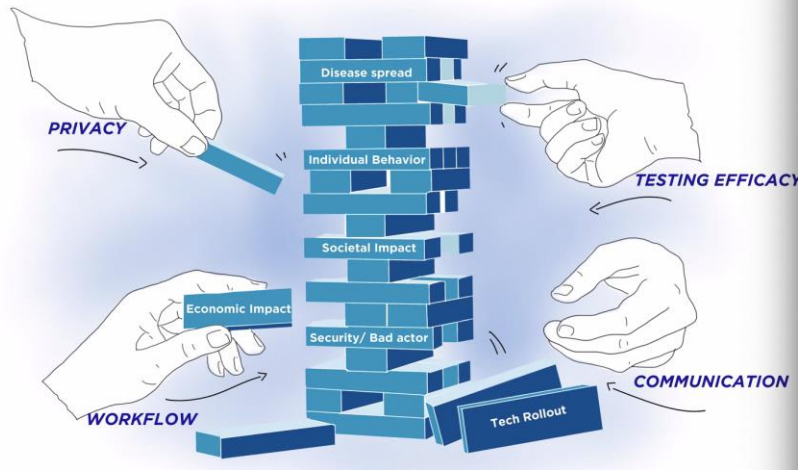
Misunderstanding/Miscommunication

Six Consequences

Disease Spread, Individual Behavior, Societal Impact, Economic, Security, Tech Rollout

Illustration shows how any of these problems causes the entire testing process to collapse in ability (like Jenga)

Fragile nature of testing : Challenges and consequences



Note on concept of behavior nudges (look at COVI webinar notes and previous week’s webinar for more information)

Illustration shows example prompts from user or commands to be recommended to follow

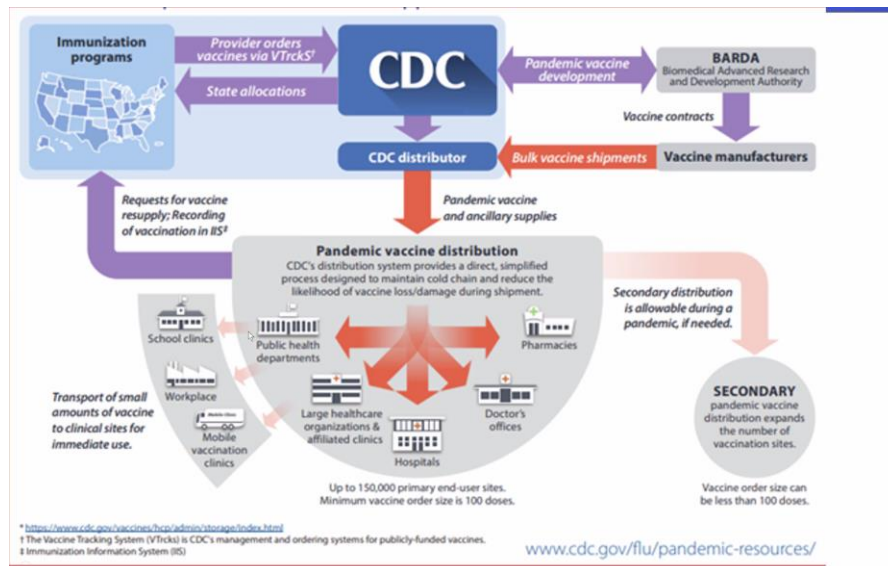
The 4 Steps for the User	The Challenge	The Motivation	Motivation Strategies
1. Awareness "Getting tested is important"	Fear Fatigue "Do I need to get tested now after doing XYZ?"	Situational Awareness "Did I do something that requires me to get tested?"	Nudges Badges, notifications, in-app stories
2. Get Tested "Making it happen"	Remove Hassle "Where do I go, how long will it take, what if I'm +?"	Remove Ambiguity Give guidance, Activity-Feeling Matrix	Ease of Use Eliminate steps, transparency in process
3. After Result "What do I do now?"	Anxiety Privacy, Shame, Family-Work logistics	Remove Stigma Community responsibility and peer support	Make It Necessary Badges, entry-passes
4. Comply/Exit "I'm can't isolate anymore"	Empathy Risky behavior, peer support / pressure	Bigger Picture Personal values, societal norms	Make It Easy Badges, fines, make staying home easy

Interaction with campuses and private organizations

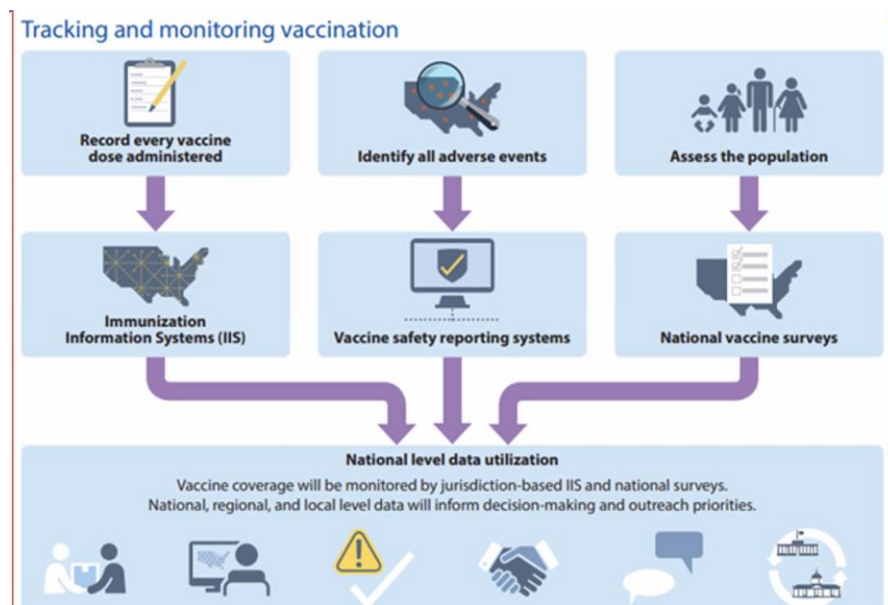
Vaccines and Apps

Smartphone based solutions can increase speed to vaccinate everyone; improve vaccine efficacy/safety and ensure inclusiveness so underprivileged are not last ones to get vaccinated or be subjected to unsafe/ineffective vaccines

Notes how vaccine distribution is a baton passing system . Illustration shown below:



Many challenges occur in first stage - when supply is less. Need to find priority populations. Just saying health care workers is ineffective because they're very wide spread.



So illustration above shows a very top down solution. In what ways can EN be used in this process.

Summary of Vaccine Challenges

Vaccine Challenges

Logistics

- Manufacturing/ Shipping/ Storage (cold chain)
- Distribution
- Prioritization: who should get vaccines first
- Monitoring and evaluation
- Cost (for system, for providers, for users)

Health Outcome Issues

- Efficacy (First gen. vaccines likely imperfect)
- Duration of Immunity Lasting ,
- Side Effects/ Adverse reactions
- Aggregate Health Monitoring and evaluation

User centric issues

- Behavior Nudges (Info, Awareness, Risk, ..)
- Reminder for second booster dose
- Trust in the system
- Data Privacy

Communication

- Political interference
- Hierarchical info sharing
- Incorrect Messaging to population, Education, Vaccine impact
- Miscommunication/trust
- Misinformation on social media

Ex. Incorrect Messaging

Storage

Q&A

Concern about rural vs urban notification

Half of the population in a certain state is resistant to get results from testing. People are either very tech savvy or “tech resistant”. Very few are undecided.

Call centers are more effective for certain states

No confirmation from any states on increased integration of EN apps with testing. Some investigation being done how tools can be augmented in the future.