

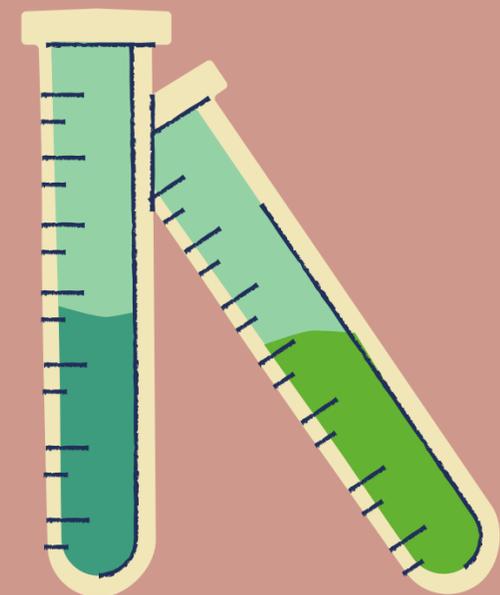


*Pacific NorthWest  
Economic Region*

Pacific NorthWest Economic Region's

# COVID-19 Recovery Call

**Rapid COVID Testing in Canada & the U.S.**  
Wednesday, September 23, 2020



# AGENDA

1. Welcome and Introductions
2. Rapid COVID Testing Best Practices
  - a. Rapid COVID testing technology in the U.S.
    - i. Dr. Paul Yager, University of Washington, Co-Founder at UbiDx
    - ii. Kate Sharadin, CEO at UbiDx
  - b. How can rapid COVID testing technology improve consumer confidence in institutions, including Canadian airports
    - i. Beth Henschel, Manager of Airport Operations at Vancouver Airport Authority
    - ii. Andy Margolis, Director of Airport Operations at Vancouver Airport Authority
3. Open discussion on selected questions
4. Topic for the Next Call - October 28, 2020
  - a. Returning to school - analysis of education best practices
  - b. Employer best practices for supporting parents with online learners
  - c. Vaccine distribution plans



# UbiDX

## Ubiquitous Diagnostics

Putting affordable, rapid, reliable clinical testing in the hands of everyone, everywhere, anytime

Kate Sharadin, CEO - UbiDX

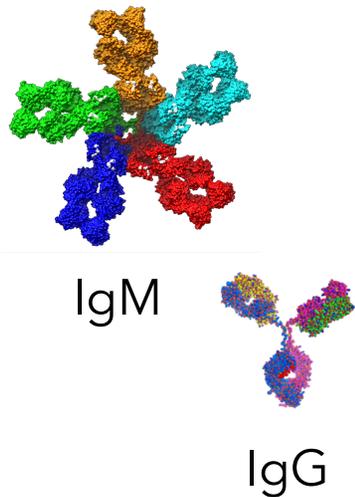
Paul Yager, Ph.D., CSO - UbiDX  
Professor, Department of Bioengineering  
University of Washington  
Seattle, WA

UbiDX



# Have you been infected or are you infected now? The difference in testing

## Antibody Tests



Antibodies are molecules made by the patient in response to a pathogen

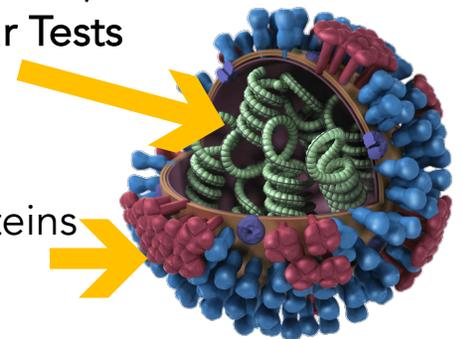
Look for the presence of chemical fingerprints of suspected disease

Body's response to pathogen

Bits of the pathogen

RNA (or DNA)  
Molecular Tests

Viral proteins  
Antigen  
(Rapid)  
Tests



Virus parts can be found in your body before, during (and after?) an infection

## What's available now? Nothing for the home

- RNA testing (called a molecular test or NAAT—historically PCR) for the presence of virus in an active infection

- NP swab, nasal swab and saliva
- Very sensitive
- Centralized labs only to date
- Highly trained operators needed

- Antibody testing for person's immune response (IgM or IgG)

- Detection of active infection or a previous infection
- Immunity testing

- Antigen (“rapid tests”), closer to POC, less-trained personnel

- Less sensitive *by far* than molecular tests, but much faster
- Still need trained operators

# Problems/Misconceptions

- RNA testing (molecular test or NAAT)
  - Expensive supplies, personnel and lab overhead
  - Testing can take hours (except some devices, like Abbott ID Now)
  - Supply still not meeting enormous demand
  - Turnaround times still several days
  - May be *too* sensitive--picking up viral RNA long after people are no longer infectious
- Antibody testing
  - Lab turnaround times still slow
  - Not clear that antibodies prove immunity
  - Some people have IgG very early in infection—there are things we still don't know about this
- Antigen (“rapid tests”)
  - Sensitivity so low that you may miss all but the most infectious people
  - Still requires trained operators
  - Supplies still rolling out

# COVID Testing Landscape

## Use cases across three key technologies

Use Case	Intended Use	Antibody test	Antigen test	Molecular test
Triage/screening	Determine if a symptomatic or asymptomatic person <b>probably</b> has a current SARS-COV-2 virus infection (warrants isolation pending confirmatory test)	X	✓	✓
Confirmation	Person is currently infected with SARS-CoV-2 virus after triage testing	X	✓	✓
Diagnosis	Diagnose that a symptomatic individual has a SARS-CoV-2 infection	X	✓	✓
Differential Diagnosis	Determine which illness a person presenting with influenza-like symptoms really has (e.g., Flu A, Flu B, RSV, SARS-CoV-2)	X	X	✓
Population Surveillance	Monitor a local or sentinel population for estimation of incidence or prevalence	✓	✓	✓
Environmental Surveillance	Monitor for the presence of SARS-CoV-2 virus on surfaces, in the air, in commercial vehicles, in cruise ships, or other sites of interest	X	X	✓

# Federal activities in the US

## US Food & Drug Administration Emergency Use Authorization (EUA)

Permits the FDA Commissioner to authorize the use of an unapproved medical product or an unapproved use of an approved medical product during a declared, national emergency

- Has provided authorization of SARS-CoV-2 assays for molecular lab testing (PCR)
- Has provided authorization of many antigen and antibody tests for the point of care
- Provides protocol for testing such assays in order to obtain EUA
- Has authorized reference labs to produce their own assays specifically for SARS-CoV-2

## Federal government's role in distribution of widespread testing

*(Coordinated efforts have been weak and states developing their own strategies)*

- Work with developers of innovative testing – provide grants through NIH/BARDA
- Supports public health labs obtain supplies for testing

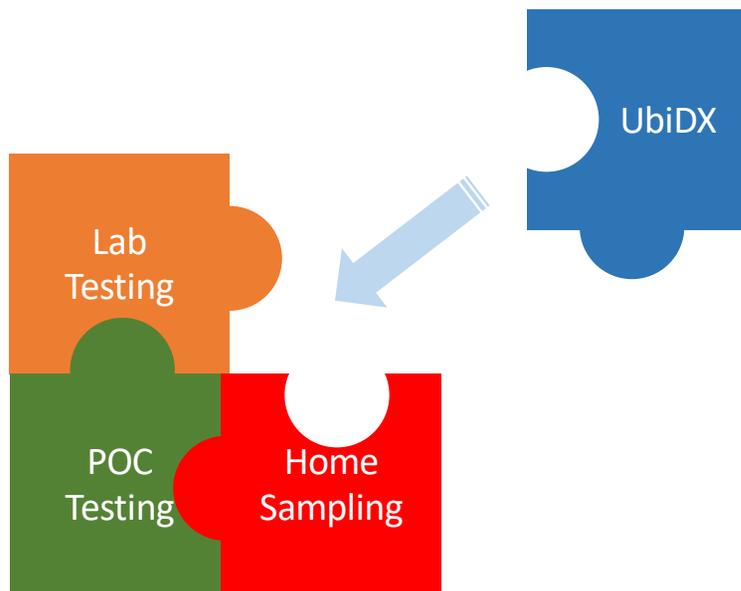
## How state and local government can support rapid testing

Innovation will deliver the results needed for a new normal including access to rapid testing

- **Work with developers to address concerns around future needs/capacity**
  - Work closely with companies innovating rapid testing to define testing strategies
- **Work with developers to address capacity and scale issues for COVID-19 testing**
  - Innovative companies need to address the issue of scaling to millions of test per year
- **Work across industries with testing developers to foster relationships and distribution**
  - Provide incentives to partnerships that can address testing strategies and performance

# The missing piece; *molecular* self testing at home

Using rapid, highly sensitive, simple, affordable molecular tests

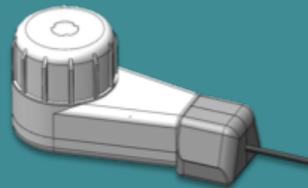


## • UbiDX Enables:

- User-initiated testing at home (OTC purchase)
- Healthcare-initiated testing (prescribed or in healthcare setting)
- Granting access to venues (work, transportation, border crossing, healthcare, sports, culture, political rally, party, education)
- Epidemiology (contact tracing, etc.)

# A Patient-Centric Home Health Hub

Bridges a home lab with virtual care, connects data to stakeholders



Rapid, single use  
No extra hardware  
The function of a reference lab  
At the home, at the patient  
Connected to the healthcare system



Virtual Care  
Providers



Payors



Public Health

# How rapid COVID testing technology can improve consumer confidence in institutions, including Canadian airports

- Beth Henschel, Manager of Airport Operations at Vancouver Airport Authority



# Open Discussion on the Following Questions:

- How does COVID testing work in your state, province, or territory?
- If these tests are being offered for free or at reduced cost, how are they being paid for?
- What testing best practices would you like to share?



Please keep your remarks brief.

Specific information on testing, case counts, and recovery rates can be found on the Center for Regional Disaster Resilience Website at [www.regionalresilience.org/covid-19](http://www.regionalresilience.org/covid-19)

# TOPICS FOR NEXT MONTH'S CALL

What do you need to know more about regarding COVID-19 to make better-informed decisions as we move forward?



● A

Employer best practices for supporting parents with online student learners

● B

Returning to school - analysis of education best practices

● C

Vaccine distribution plans

● D

Other

Please email your suggestions to Betz at [Betz.Mayer@pnwer.org](mailto:Betz.Mayer@pnwer.org)



*Pacific NorthWest  
Economic Region*

**The next COVID-19  
Response Call will be  
Wednesday, October 28  
@ 11 am PDT**

Please visit [pnwer.org/covid19-recovery-call](https://pnwer.org/covid19-recovery-call) for more information. Email questions and comments to [betz.mayer@pnwer.org](mailto:betz.mayer@pnwer.org)