PolicyLab | **Policy Review** COVID-19 RESOURCE

In an effort to understand the public health infrastructure requirements and readiness for safely reopening our communities, we have compiled evidence from multiple public health and sector-specific literature on influenza and pandemic concepts, as well as COVID-specific evidence and expert proposals. This policy review serves as a list of prioritized concepts, constructs, and accompanying collated resources and references. In some places, inference and opinion of the authors is included.

This document represents a living summary amenable to update, feedback and revision. The resources included are neither final nor comprehensive—public health-trained research professionals at PolicyLab at Children's Hospital of Philadelphia made decisions about inclusion of materials. We welcome expert feedback and additions—please reach out to Meredith Matone (MatoneM@email.chop.edu) or Deanna Marshall (MarshallDB@email.chop.edu). We plan to continue adding resources.

CONTENTS

To guide this search, we focused exclusively on a framework of 1) occupational health, 2) surveillance, and 3) testing as core tenets of public health pandemic mitigation practice. We also cataloged workforce strategies to underpin these operations, including those proposed in the academic literature and by media outlets. The concepts in this document rely on traditional public health definitions for these three domains:

1) **Occupational Health** is the prevention of workplace risks and hazards and the promotion of worker safety. As many prepare to re-enter the workforce, workplace mitigation of COVID-19 is critical to protect the health and safety of the workforce and their social connections. The workplace represents a primary exposure and transmission environment.

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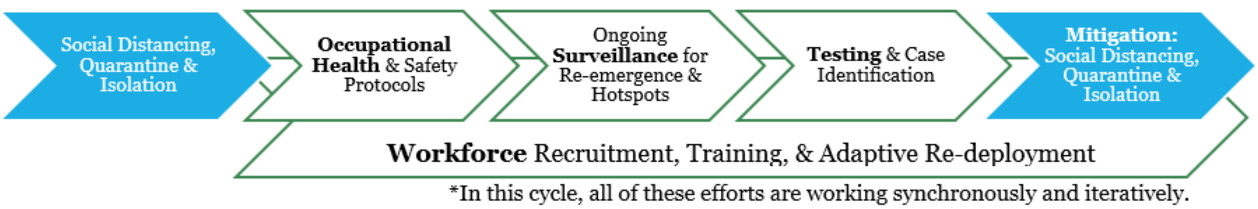
2) **Surveillance** is the ongoing systematic monitoring of community health data for the purposes of early disease detection, identification of hotspots of emergent and re-emergent outbreaks and monitoring of the impact of mitigation interventions. As COVID-19 wanes and we begin to reopen our communities, we will need to continuously monitor for early warning signs of re-emergence via surveillance measures.

3) **Testing** refers to the use of diagnostic tests to identify those with a particular disease. Once surveillance efforts identify emerging hotspots, the testing of individuals or groups within hot-spotted communities triggers public health responses including quarantine, isolation and social distancing. Importantly, individuals who have COVID-19 may test positive and be contagious while asymptomatic or presymptomatic, highlighting the role for community-based testing beyond symptomatic individuals within hot-spotted communities.

Cycle of COVID Public Health Operations in the Pre-Vaccination Period



OCCUPATIONAL HEALTH

Occupational Health is the prevention of workplace risks and hazards and the promotion of worker safety. As many prepare to re-enter the workforce, workplace mitigation of COVID-19 is critical to protect the health and safety of the workforce and their social connections. The workplace represents a primary exposure and transmission environment. While a variety of workforce re-entry strategies have been proposed, including approaches that may represent interventions to combat transmission (e.g., cyclic work-lockdown strategies), all workforce re-entry must be met with a consideration of workplace hygiene protocols.

With an emerging, but incomplete, understanding of the mechanics of viable SARS-CoV-2 transmission, recommendations for infection control in occupational and community settings are subject to imprecision. There is limited evidence to determine the impact of handwashing and surface sanitization on transmission of SARS-CoV-2 and respiratory illness. Rather, these recommendations are informed by evidence of the efficacy of these interventions on transmission reduction of other pathogens, including those causing gastrointestinal illnesses. Evidence would suggest that a combination of interventions may be needed to impact transmission. Workplace distancing protocols and ventilation are among the few occupational and community setting interventions with an evidence base for effectiveness.

Industrial Hygiene Practices for Biological Contaminants

The following workplace considerations are informed by and utilize direct text from OSHA and the Centers for Disease Control and Prevention (CDC) *Employer Pandemic Preparedness Protocols*:

- Prioritize **social distancing and proper room ventilation**
- Consider **masking or respirators**, as appropriate. If respirators are used, prioritize respirator fitting to reduce user exposure
- Maintain **easy access to infection control supplies**, such as soap, hand sanitizers, personal protective equipment (e.g., gloves or surgical masks), tissues and office cleaning supplies
- Equip each room with **trash receptacles**
- Employers should identify a **"pandemic coordinator"** and/or team with defined roles and responsibilities for preparedness and response planning
- Provide **ADA-accessible and limited English proficiency-accessible trainings** on hand washing hygiene, cough and sneeze etiquette, masking, social distancing techniques, and role-related hygiene and safety protocols
- Develop workplace policies and practices that distance employees from each other, customers and the general public. Policies and practices that allow employees to **work from home**, **stagger their work shifts and access sick leave** may be important.
- Implement **engineering controls** to provide additional protection, such as: drive-through service windows, clear plastic sneeze barriers, ventilation, and the proper selection, use and disposal of personal protective equipment

Industrial Hygiene Considerations for Child Care Centers

Child care is the primary sector-specific literature we reviewed for this summary document, given that it is a service essential to working families with young children re-entering the workforce and reflects a priority stakeholder group from the authors' perspective as pediatric health services researchers. Child care operations for essential personnel have remained open during state- and city-mandated COVID-19 lockdowns. Additionally, although children can contract and transmit COVID-19, data from the U.S. and China show they disproportionately experience mild or no symptoms. Children's role as carriers, however, is important in considering the health of the child care workforce, as well as that of parents and other caregivers.

- **Mitigation strategies are limited and hard to implement**:
    - Diapering procedures with proper hand-washing techniques
    - Refrain from allowing children's fingers, toys, etc. near workers' mouths
    - Staff training, education and communication
    - Restructuring and keeping groups of staff and children from mixing together to minimize social contacts
    - Modifying exclusion policies to include ill children and possibly, at the time of the pandemic, those with ill family members
    - Implementing staggered shifts (challenging when many centers are chronically understaffed)
    - Eliminating gatherings of staff in team meetings
    - Minimizing contact with parents
    - Families social distance from other families and children (no playdates with children outside of childcare facility)
- **Considerations:**
    - A high proportion of child care facilities are home-based rather than center-based. Older homes in under-resourced communities may pose structural challenges to

compliance with enhanced hygiene protocols (e.g., limited number of sinks/bathrooms).
  - Executing protocols for maintaining physical distancing, small groupings and avoidance of bodily fluids is challenging. Other evidence-informed approaches to transmission mitigation should be considered, including ventilation and paid sick leave to improve compliance with employee distancing during illness.
  - The workforce is regularly exposed to upper respiratory infections and, at baseline, have high levels of occupational stress. Child care workers are also typically paid low wages with few employer protections (e.g., paid medical leave, health insurance).
    - Taken together with limited transmission mitigation strategies, this presents a workforce acutely vulnerable to health and economic impacts of COVID-19.

Primer on OSHA Workplace Safety Concepts

Directly sourced from: https://www.osha.gov/Publications/influenza_pandemic.html

Risk Classification by Sector and Job Responsibilities

- *Very high exposure risk* occupations are those with high potential exposure to high concentrations of known or suspected sources of pandemic influenza during specific medical or laboratory procedures.
  - Health care employees (e.g., doctors, nurses, dentists) performing aerosol-generating procedures on known or suspected pandemic patients (e.g., cough induction procedures, bronchoscopies, some dental procedures or invasive specimen collection)
  - Health care or laboratory personnel collecting or handling specimens from known or suspected pandemic patients
- *High exposure risk* occupations are those with high potential for exposure to known or suspected sources of pandemic influenza virus.
  - Health care delivery and support staff exposed to known or suspected pandemic patients (e.g., doctors, nurses and other hospital staff that must enter patients' rooms)
  - Medical transport of known or suspected pandemic patients in enclosed vehicles (e.g., emergency medical technicians)
  - Professionals who perform autopsies on known or suspected pandemic patients (e.g., morgue and mortuary employees)
- *Medium exposure risk* occupations include jobs that require frequent, close contact (within 6 feet) exposures to known or suspected sources of pandemic influenza virus such as coworkers, the general public, outpatients, school children or other such individuals or groups.
  - Employees with high-frequency contact with the general population (e.g. schools, high population-density work environments and some high-volume retail)
- *Lower exposure risk* (caution) occupations are those that do not require contact with people known to be infected with the pandemic virus, nor frequent close contact (within 6 feet) with the public. Even at lower risk levels, however, employers should be cautious and develop preparedness plans to minimize employee infections.
  - Employees who have minimal occupational contact with the general public and other coworkers (e.g., office employees)

Hierarchy of Controls

Directly sourced from: https://www.osha.gov/Publications/influenza_pandemic.html

Occupational safety and health professionals use a framework called the "hierarchy of controls" to select ways of dealing with workplace hazards. The hierarchy of controls prioritizes intervention strategies based on the premise that the best way to control a hazard is to systematically remove it from the workplace, rather than relying on employees to reduce their exposure.

In the setting of a pandemic, this hierarchy should be used in concert with current public health recommendations. The types of measures that may be used to protect yourself, your employees, and your customers (listed from most effective to least effective) are: **engineering controls, administrative controls, work practices and personal protective equipment (PPE)**. Most employers will use a combination of control methods. There are advantages and disadvantages to each type of control measure when considering the ease of implementation, effectiveness and cost.

- *Engineering controls* involve making changes to the work environment to reduce work-related hazards. These types of controls are preferred over all others because they make permanent changes that reduce exposure to hazards and do not rely on employee or customer behavior. By reducing a hazard in the workplace, engineering controls can be the most cost-effective solutions for employers to implement.
- *Administrative controls* include controlling employees' exposure by scheduling their work tasks in ways that minimize their exposure levels.
- *Personal Protective Equipment (PPE)* may also be indicated during certain exposure situations and is ideally used in conjunction with engineering and administrative controls.

SURVEILLANCE

Surveillance is the ongoing systematic monitoring of community health data for the purposes of early disease detection, identification of hotspots of emergent and re-emergent outbreaks, and monitoring of the impact of mitigation interventions. Below is an overview and interpretation of the evidence on four surveillance approaches.

Emerging data on the distribution of symptomatic and asymptomatic SARS-CoV-2 infections suggests that among certain populations, the proportion of asymptomatic individuals may be high. Recent data on universal testing protocols performed among pregnant women admitted for delivery (n=215) and sailors (n=4465) identified 13.5% and 68% asymptomatic positive cases, respectively. Both women carrying a pregnancy through to delivery and active duty sailors represent populations more likely to be young and healthy, limiting the generalizability of the estimates of asymptomatic cases to this demographic. Data on the asymptomatic rate among older adults and those with underlying and unmanaged health conditions is needed. The large discordance in rates of asymptomatic cases in these two samples may be driven, in part, by testing insensitivities and/or differences in testing protocols. Alternatively, or in tandem, it may indicate the possibility of true heterogeneity in symptomatic presentation across certain populations. Despite the nascent nature of this data, the evidence of asymptomatic infection, coupled with data on pre-symptomatic transmission of COVID-19, have implications for surveillance. Surveillance methods rely on symptom presentation. While early symptoms of COVID-19, particularly fever, are aligned with influenza and therefore make traditional influenza-like illness (ILI) surveillance approaches a useful evidentiary resource, the differences in asymptomatic transmission between COVID-19 and influenza warrant consideration.

With the following surveillance approaches, lowering the thresholds for classification of aberrant activity may overcome the challenge of asymptomatic transmission and mitigate the risk of testing delays amidst rampant asymptomatic transmission within a community. In periods when influenza is not circulating in tandem with SARS-CoV-2, ILI surveillance methods are likely viable with a reasonable degree of sensitivity.

Moreover, recent studies confirm individuals can be co-infected with SARS-CoV-2 and other respiratory pathogens such as influenza or rhinovirus, indicating that testing for non-SARS-CoV-2 pathogens to rule out SARS-CoV-2 may not be medically necessary. These findings suggest that syndromic surveillance for respiratory symptoms may present hotspots of co-infection risk. This is important in consideration of the fall/winter seasonal influenza period. Recent transmission projection research affirms the need for robust population surveillance. Kissler and Lipsitch 2020 suggest that current social distancing measures may shift the peak of SARS-CoV-2 cases into fall 2020.

Health Information Exchange (HIE)/Electronic health record (EHR) Data

- HIE/EHR data are viable strategy for syndromic surveillance.
- EHRs are a high-coverage data source—97% of hospitals surveyed by the American Hospital Association in 2017 reported using an EHR platform (AHA). Additionally, CDC reported 80% of office-based physicians were using EHR platforms by 2017. These rates have undoubtedly increased. HIE data are used by health systems, state and local health departments and the U.S. Department of Health and Human Services (HHS) for population monitoring (among other health care delivery, contracting and administrative purposes).
- Massachusetts uses an open source software, ESPhealth, for influenza-like illness (ILI) passive surveillance through EHR development. See evaluation in Yih 2014 Public Health Reports.
- **Considerations**:
    - Accessibility (including timeliness) of data. State and local government access to HIE data is not ubiquitous. Rural areas, in particular, are less likely to have HIE coverage.
        - EHR and claims data from large health insurance plans may be a reasonable way to access regional population-level data in the absence of HIE. However, there remains a need to aggregate data across platforms to achieve statewide surveillance. States and local governments may have variable infrastructure and data use contracting agreements to permit access to real-time population-based surveillance data.
    - Sensitivity of identification algorithms influences effectiveness of this approach (possible use of continuity of care documents (CCD) per Birkhead 2014 Annual Review of Public Health and D'Amore 2012 American Journal of Public Health).
    - Data quality and reliability is a concern for HIE data. See evaluation in Horth 2019 BMC Public Health.
    - There is a potential added value of supplementing HIE data with all-cause death data. Deaths occurring outside of hospitals in home settings or community-based or long-term care facilities may be less likely to be classified and reported as COVID-19 related. Monitoring mortality patterns may prove useful as a supplemental approach.

HIE/EHR data may be enhanced by Telephone Triage (TT) data

- TT encounters precede health care encounters (and are therefore, timelier) and may capture illness that does not result in a health care encounter (circulating mild illness contributing to transmission). See evaluation in Espino 2003 AMIA.

- Veterans Affairs uses this combination approach for ILI. See evaluation in Lucero-Obusan 2017 Public Health Reports.
- **Considerations**:
  - Availability of TT data in areas without large health care system presence
  - Vulnerable to patient call behaviors
  - Likely best used as a supplemental strategy

Thermometer Data

Temporal thermometer data for syndromic surveillance has emerging evidence.

- A feasibility study of automated thermometer surveillance conducted in a large emergency department (ED) concluded temporal thermometer data was able to detect aberrant fever and this mode of surveillance performed better than flu-like symptom reports. While not as precise as lab-confirmed influenza metrics or sentinel ILI reporting, the approach requires significantly less administrative and physician burden. See evaluation in Bordonaro 2016 BMC Public Health Reports.
- A surveillance study in England of ambulance record thermometer data concluded high correlation with sentinel surveillance and faster detection given the high rate of discharges from ambulance encounters that do not result in a health care encounter. See evaluation in Reich 2018 bioRxiv preprint.
- Smart thermometers (commercial products manufactured by companies including Kinsa) enabled from smartphone applications produce estimates of ILI activity highly correlated with national estimates (best correlation with 25-49 year olds) with potential for faster detection than traditional sentinel surveillance. See evaluation in Miller 2018 Clinical Infectious Disease.
  - WiFi connectivity within the home environment is a potential limitation for smart thermometer deployment to under-resourced communities. Survey data show only 56% of households making under $30,000 a year have home broadband connectivity.
- **Considerations**:
  - Multiple deployment approaches—health care encounters, community health worker community-based sampling, sector/facility approaches (schools, large employers), self/home-based
  - Feasibility of widespread deployment is high given low threshold for temporal thermometer instrument training
  - Protocol for data aggregation, review and oversight must be developed

Internet-based Participatory Surveillance

Internet-based surveillance approaches also known as participatory syndromic surveillance may be a viable strategy.

- Flu Near You is a platform used in the U.S. and Canada. See review in Chunara 2015 Scientific Reports. Makers of Flu Near You recently launched a COVID Near You platform.
- Influenzanet, used in several European countries, recently had a 10-year review of sensitivity showing positive results. See review in Van Noort 2015 Epidemics.
- **Considerations**:
  - Penetrance of participation does not need to be complete for these surveillance systems to work (similar to community sampling). Influweb in Italy was beneficial

even with 1-5% population participation. If monitored in real-time, it is possible to detect virus one week earlier than EHR surveillance systems.
    - Web-based approaches have a low threshold for widespread deployment and low resource costs for maintenance. Automated reminder systems have been found to be effective in participant engagement.
    - Employers can deploy web-based syndromic surveillance. Child care centers have performed proof of concept of this mechanism, showing earlier detection of county health reports of outbreak. See evaluation in Schellpfeffer 2017 Health Security.
    - Protocol for data aggregation, review and oversight must be developed

Community-based Early Detection

Community-based early detection may be a viable complementary strategy for harder to reach or limited English proficiency populations *or* a primary at-scale approach if HIE or alternative approaches are deemed not viable within particular communities (e.g., rural areas with low health care access)

- Community-based surveillance engages and trains community health workers to collect health information (symptom presentation) and report to public health authorities. See definition in World Health Organization (WHO) Technical Contributors 2018 Eurosurveillance. See review from 2017 in International Federation of Red Cross and Red Crescent Societies.
    - Approach can be operationalized either as (1) reporting symptoms to designated community leaders or (2) identifying symptoms through door-to-door home visits.
- Surveillance via monitoring of entire at-risk communities is a method used to combat the Ebola crisis in Liberia. Monitoring includes frequent symptom assessment. See analysis in Wong 2016 PLoS Currents Outbreaks. See Ebola response strategy in Bar-Yam 2014 New England Complex Systems Institute.
    - Protocolize screening of specific communities or high-risk patient populations.
        - Of note, for hidden populations (e.g., users of illicit drugs, homeless), there are multiple available sampling strategies for public health surveillance. See review in Magnani 2005 AIDS.
    - Compliance within communities does not need to reach 100%. For example, 40% compliance drove case curves down in Liberia's Ebola strategy. See analysis in Wong 2016 PLoS Currents Outbreaks.
- **Considerations**:
    - Protocol for data aggregation, review and oversight must be developed. If implemented as a secondary approach, must be integrated into state or county surveillance system.
    - Must be robustly integrated into a formal state or county surveillance system
    - Choose community health workers who reflect community members in an inclusive way
    - Use data collection tools that are simple
    - Overall as an approach will err on more sensitive than specific
    - Can be operationalized within existing community infrastructures (e.g., block captains, religious leaders serving as or alongside community health workers) and can present a low-moderate resource strategy. There is less-defined academic literature on operationalizing this as a primary strategy in large cities.

TESTING

Testing refers to the use of diagnostic tests to identify those with a particular disease. Once surveillance efforts identify emerging hotspots, the testing of individuals or groups within hot-spotted communities triggers public health responses including quarantine, isolation and social distancing.

Considerations:

- All testing approaches require the availability of more testing than status quo as of April 10, 2020 (though less than universal testing).
- The testing approaches reviewed in this document work in tandem with surveillance protocols that identify the possible presence of resurgence within communities. Testing protocols within hot-spotted communities would aim to (1) confirm the presence of COVID-19 in the community, (2) identify COVID-19 status among high-risk populations and prioritized essential workforce members, and (3) reduce transmission using community-level mitigation interventions (the literature would suggest: social distancing, quarantine and isolation, travel restrictions).
    - Regarding community-level mitigation: The viability of a testing-contact tracing approach is likely highest among smaller communities early in an outbreak. Community-level mitigation may be required among population-dense communities and those with suspected higher numbers of cases. While the appeal of reliance on contact tracing as a method to avoid community-level mitigation is strong and multifaceted across health, economic, and education considerations, the current constraints of testing capacity, sensitivity, and infrastructure significantly limit the likely success of this approach. False negatives, sample collection errors, and ill-timed tests (e.g., in the incubation period) can result in significant misses in transmission mitigation. The feasibility of repeated individual-level testing to overcome this issue is slim.
- This section does not consider an approach of sole testing of symptomatic individuals in health care settings (status quo as of April 10, 2020) as the inability to test pre-symptomatic and asymptomatic individuals may lead to higher transmission in communities with confirmed active cases. In this scenario, contact tracing of confirmed cases is likely an ineffective use of resources as long infectious periods and presymptomatic infectious periods will render this approach always steps behind transmission. Recent proposals of digital survey-based participatory contact tracing methodologies may address some of these concerns (for example, NextTrace).
- This section does not consider an approach of universal or widespread population cross-sectional testing as there is a low feasibility of deployment of such an approach (as of April 10, 2020) in preparation for a fall/winter likely resurgence of COVID-19. While all population testing approaches are inherently logistically complex, the complexity of universal testing is related to the scale and resource intensity of the operation.
    - Importantly, some high-risk groups likely need to be prioritized for testing *a priori*, independent of surveillance, including medically high-risk communities (e.g., nursing homes, hospital and health care settings) and specific high-exposure industries (e.g., mass transit, airlines). Population-dense communities, particularly in large urban centers, where risk of transmission is very high may require cross-sectional (sampled) population-based testing approaches.
- The purpose of the testing approaches reviewed in this document are not to identify every case but rather to use testing as a strategy for transmission mitigation and case

confirmation among priority medically or occupationally high-risk populations. Under these testing paradigms, there would be presumptive mild cases that do not receive confirmatory tests (assuming moderate and severe cases requiring hospitalization would be identified in health care settings).

- The implementation of community testing approaches reviewed in this document will require a restructuring and deployment of a public health workforce.
  - State-level or within-state regional development and oversight of county/community testing protocols will be required.
  - This work is ideally led or supported by professionals with robust public health training. The use of CDC fellowships, public health postdoctoral fellowships, or other specialized trainee programs to support state testing operations may be feasible.
  - On the ground, the deployment of a public health workforce (e.g., community health workers) to perform screening and contact tracing operations are needed.
- The viability of community testing approaches is tied to the sensitivity of the tests and the timeliness of test analysis and reporting procedures.

Community-Based Active Case Identification & Monitoring

Community-Based Active Case Finding is a screening approach that is subsequent to community surveillance and triggers (1) testing to confirm emergence of a community outbreak and (2) isolation and quarantine protocols for individuals. To be used in communities hot-spotted with surveillance measures.

- Approach primarily developed and executed in LMIC for Tuberculosis, later adopted for Ebola. See evaluations in Karki 2017 Asia-Pacific Journal of Health, Corbett 2010 Lancet, Namukose 2018 Advances in Public Health.
- Combined with surveillance: Identify symptomatic communities first via surveillance (approaches reviewed in prior section), and then refer for execution of screening protocols (PCR or serology). *Note: this document does not review specific PCR or serology testing methodology protocols or products*.
  - Positive screens trigger isolation and social network quarantine protocols, which can be supported in the community with health care or public health workforce. Additionally, community-level travel restrictions are an important contributor to the effectiveness of this approach once active cases have been identified. See review in Wong 2016 PLoS Currents Outbreaks.
- Best practice defines and targets specific groups to screen to lower the screen:case ratio (eg, elderly, individuals with underlying and unmanaged chronic conditions) and prioritizes risk within communities for a limited testing approach.
  - Methodology used for TB identification. Evaluated in Chen 2019 Infectious Diseases of Poverty.
- Sampling approaches: (1) multi-stage cluster sampling based on likely prevalence and population size, or (2) single-stage cluster random sampling based on high prevalence (with screening of all individuals/dwellings in community). See evaluation in Karki 2017 and Chen 2019.
  - Community health workers improve case tracing. Community health workers serve as translators, cultural mediators and facilitators who accompany cases and contacts through treatment and follow-up. See evaluation in Miller 2018 Journal of Global Health and Ospina 2012 BMC Public Health.
  - Community health workers have been found to be more effective in conducting disease-related activities than health facility workers in certain circumstances See evaluation in Miller 2018.

Case Identification via Block or Group Testing (also known as pooled sample testing)

- Strategy for community workforce re-entry or facility/confined group testing
  - Method used for other infectious diseases since the 1940s
  - Nebraska has initiated and India is planning to initiate this method (as of April 10, 2020)
- Combined with surveillance: Run groups or blocks of tests at once to start clearing people to exit shelter in place in communities hot-spotted with surveillance measures. Can be used strategically to identify cases in priority populations (group by age, comorbidities, residence or workforce cohorts).
  - Running tests in a block saves time and testing resources. All tests are processed at once rather than individually.
  - If entire block is negative, all can quickly re-enter community/workplace.
  - If a member of a block is positive, run tests for each individual.
  - Not efficient when many positives are expected. Useful in early detection as a clearing approach.
- Group size should be determined by population size and prevalence.
  - With an estimated false negative of 10%, RT-PCR testing can detect 1 positive case per block of 32 (Yelin et al, 2020).
  - Mentus et al. calculate a number of different scenarios.
  - Gossner & Gollier suggest optimal size is the inverse of the prevalence in population (2% prevalence = test groups of 50 with probability of release at 36%) (each test = 18 people back in the workforce).
  - Pre-screen and run asymptomatic cases together for efficiency to save tests and time to re-entry.

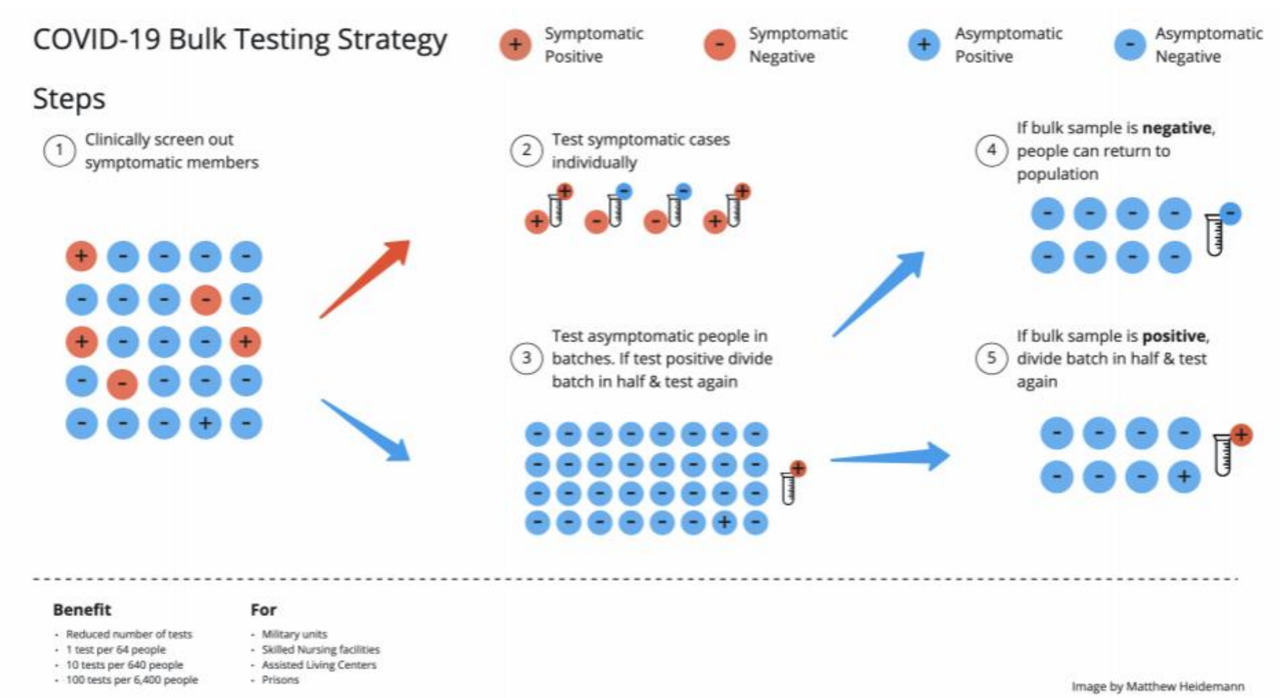


Image: Excerpted from Mentus et al., 2020, COVID-19 Bulk Testing Strategy

INCREASING MEDICAL AND PUBLIC HEALTH WORKFORCE

Medical Workforce

- *Military medical volunteers*
  - Currently, 17,000+ Army medical personnel volunteered to help with COVID pandemic
  - Already trained in emergency medical response, but will be needed as medical care workforce needs increase
  - Consider fast-tracking current or former Army medics to physician assistant, nurse, or other health care certification or an abbreviated medical school course to join the medical workforce
- *Recruiting retired nurses & physicians*
  - Already trained, loosening licensing rules
  - **Consideration:** may be at higher risk for COVID-19 complications, medical risks
- *Retraining specialists, nurse practitioners, physicians' assistants, dentists*
  - Rapid training of other specialties to serve COVID-19 front lines

Public Health Operations Workforce

- *Re-deploy current advanced practice public health trainees (CDC fellows, post-doctoral fellows)*
  - Assist the development and oversight of state and local surveillance and testing protocols
- *Increase the pool of community health workers*
  - Recruit and train community members and/or re-deploy early career public health professionals
  - Engagement in surveillance protocols, case identification procedures, quarantine and isolation, and medical management of illness
  - May be most beneficial in immigrant and refugee communities, limited English proficient or otherwise marginalized communities
  - Workforce includes lay community members and paraprofessionals. Evidence suggests the value of CHW in pandemic preparedness and response. See review in Boyce 2019 Frontiers in Public Health.
- *Rapid training of Health Care Ready Reserve (Cosgrove & Driscoll, 2020 Politico Opinion)*
  - Use Army Reserve & medic training curricula and sites to rapidly train health care workers over the summer
  - Paid part-time reserve corps of medical workers
  - Train 1 million Americans, estimated $50 billion investment
  - Could administer tests, contact tracing, vital logistical tests
  - Train on monthly or quarterly weekends to stay current during times of calm
  - During reserve periods would be qualified for health care roles due to this new training
- *First year medical school national service program (Bauchner 2020 JAMA)*
  - 20,000 incoming medical students
  - Start July 1, 2020, with month of online training
  - Deployed to state and local public health departments to test, trace, track, and quarantine
  - Federal government should fund as national service effort (salary & health coverage)

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