



Coronavirus Disease 2019 (COVID-19)

Operational Considerations for the Identification of Healthcare Workers and Inpatients with Suspected COVID-19 in non-US Healthcare Settings

The Centers for Disease Control and Prevention (CDC) is working closely with international partners to respond to the coronavirus (COVID-19) pandemic. CDC provides technical assistance to help other countries increase their ability to prevent, detect, and respond to health threats, including COVID-19.

This document is provided by CDC and is intended for use in non-US healthcare settings.

1. Overview

This document provides guidance on the identification or screening of healthcare workers (HCWs)^[1] and inpatients with suspected COVID-19. Rational, requirements, and considerations will be discussed for three broad case identification strategies:

- **Passive strategies:** Reporting/alerts are initiated by the data source (e.g., healthcare worker or treating clinician) based on a known set of rules or regulations.
- **Enhanced passive strategies:** Reporting/alerts are initiated by the data source with an added mechanism to prompt data collection, review, and/or reporting.
- **Active strategies:** Reporting/alerts are initiated by the centralized health authority (e.g., Ministry of Health, facility infection preventionist, facility administration) using a known set of rules or regulations.

To support the activities for these strategies, this document provides an initial discussion on the importance of defining the signs/symptoms of persons with COVID-19, general best practices, and surveillance capacities.

2. Signs and Symptoms Consistent with COVID-19

Uncertainty remains in defining a generalizable set of characteristic signs and symptoms for COVID-19. At best, current evidence suggests substantial variability ranging from mild to severe and based on only partially described patient-level factors. The most commonly reported signs and symptoms in the current literature include:

- Fever
- Cough
- Shortness of breath

However, additional non-specific or atypical symptoms include:

- Sore throat
- Diarrhea
- Myalgia (muscle aches, body aches)
- Tiredness or fatigue

Further, elderly patients may present differently than younger populations.

Given these limitations, facilities should define a standardized set of signs and symptoms (e.g., fever and/or cough/shortness of breath) to screen HCWs and patients for suspected COVID-19. A high level of suspicion is critical to

ensure cases do not go unrecognized due to likely substantial proportion of patients and healthcare workers presenting with atypical or minimal symptoms.

3. General Best Practices

In addition to a specific strategy for the identification of suspected COVID-19 cases, there are general best practices that will improve both healthcare worker and inpatient COVID-19 screening. Some examples include:

Train and Educate Healthcare Workers

- Provide healthcare workers with job- or task-specific education and training on identifying and preventing transmission of infectious agents, including refresher training
- Ensure that healthcare workers are educated, trained, and have practiced the appropriate use of personal protective equipment (PPE) prior to caring for a patient
- Provide job-aids and up-to-date reference materials
- Encourage and support a high index of suspicion in healthcare workers regarding suspect COVID-19 cases

Monitor and Manage Ill and Exposed Healthcare Workers

- Facilities and organizations providing healthcare should implement sick leave policies for healthcare workers that are non-punitive, flexible, and consistent with public health guidance
- Movement and monitoring decisions for healthcare workers with exposure to COVID-19 should be made in consultation with public health authorities

Establish Reporting within and between Healthcare Facilities and to Public Health Authorities

- Implement mechanisms and policies that promote situational awareness for facility staff about confirmed or suspected COVID-19 patients and facility plans for response, including:
 - Infection control
 - Healthcare epidemiology
 - Facility leadership
 - Occupational health
 - Clinical laboratory
 - Frontline staff
- Communicate and collaborate with public health authorities
- Communicate information about confirmed or suspected COVID-19 patients to appropriate personnel before transferring to other departments in the facility and to other healthcare facilities

4. Surveillance Capacities

Facility-based surveillance for healthcare-associated infections (HAIs), including infections in healthcare workers and inpatients, is one of the WHO's eight core components of infection prevention and control. While surveillance is a critical component of providing safe healthcare, it is important to recognize that it requires expertise, good quality data, and an established infection prevention and control (IPC) program and thus, may require time to set up[2]. For this reason, during public health emergency response, healthcare facilities are encouraged to initially implement facility-based suspect COVID-19 patient case finding (surveillance) feasible with existing surveillance capacities.

Health facility surveillance capacity varies greatly even within health systems. A realistic appraisal of capacity can help identify the best strategy for a given context. A general description of surveillance capacities based on existing HAI surveillance activity is provided for guidance.

Surveillance Capacity	Standardized HAI case definitions / methods	Dedicated surveillance staff ³	Patient-level data available / accessible
High: Resources needed for detailed patient interviews and/or chart reviews are readily available	YES	YES	YES
Medium: Some experience with standardized data collection with limitation in staff and data availability	YES	PARTIAL	PARTIAL
Low to Very Low: Little to no experience with patient-level collection of standardized data, limited availability of staff and data for reassignment for case finding activities	PARTIAL	NO	NO

5. Identification of Healthcare workers with suspected COVID-19

Objective: Prevent exposure of at-risk patients and staff to symptomatic COVID-19 positive healthcare workers.

Passive strategy

All healthcare workers self-assess for fever and/or a defined set of newly present symptoms indicative of COVID-19. If fever or respiratory symptoms are present, healthcare workers:

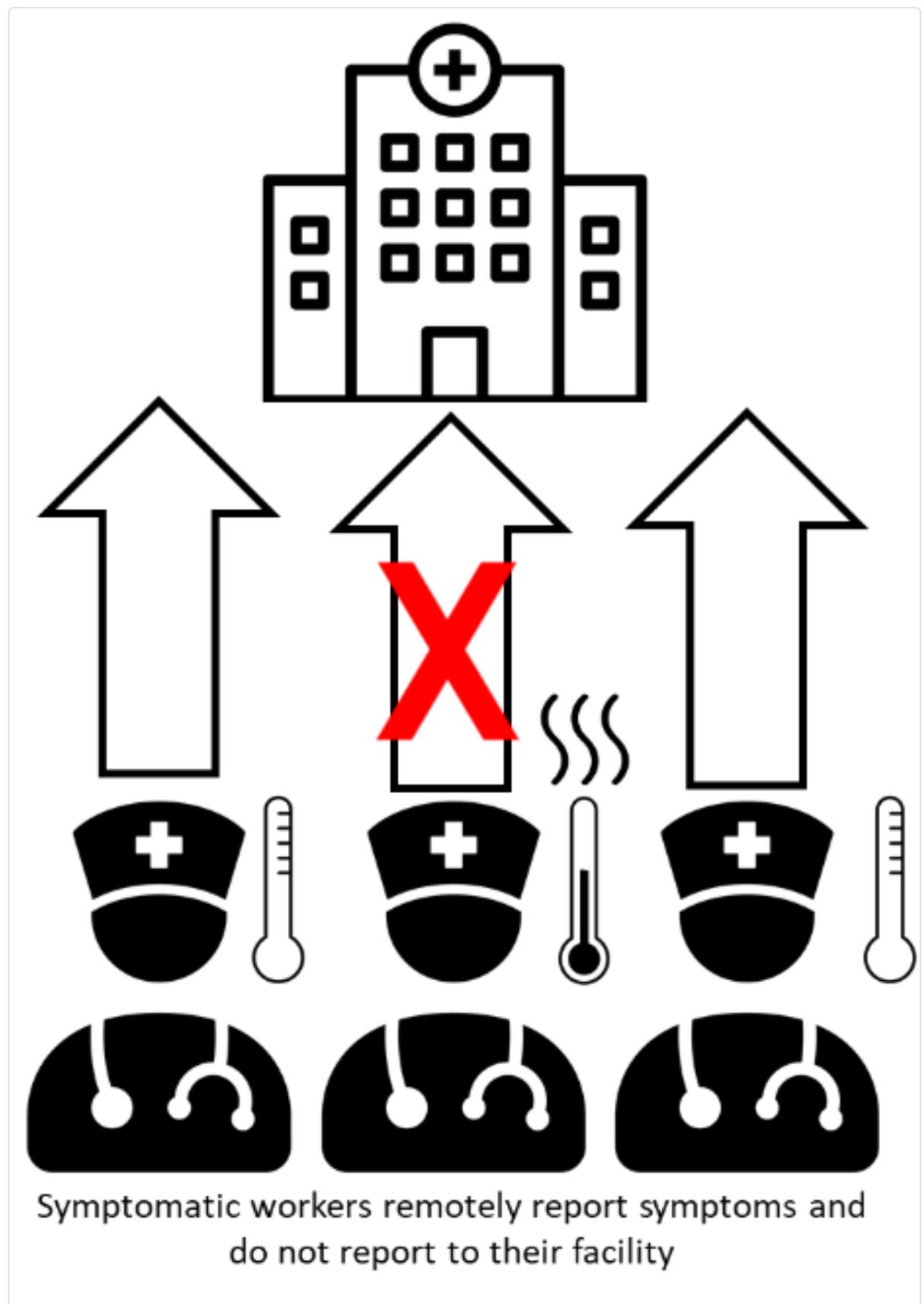
- Remotely report this information⁴
- Do not report to their health facility
- Are provided with immediate medical assessment and follow-up actions

Rationale:

Establishes mechanisms for the identification of healthcare workers at increased likelihood of infection with minimal resource requirements.

Requirements:

- List of symptoms and thermometer for self-assessment.
 - Staff and mechanism (e.g., telephone line) for remote reporting of fever and/or presence of symptoms consistent with COVID-19. Ideally this system is always available for quick medical assessment.⁵
 - Decision algorithms for response to healthcare worker reports and the results of secondary assessment



secondary assessment.

- Standardized medical assessment and movement and monitoring forms.

Figure: Passive identification of healthcare workers with suspected COVID-19

Considerations:

- Adherence is highly dependent on healthcare worker motivation and appropriate self-assessment of risk.
- Can result in reduction in work force, particularly among some critical staffing categories.
- Provision of paid sick leave/compensation for all healthcare workers not allowed to work is often critical for success, requiring substantial resources.

Enhanced passive strategy

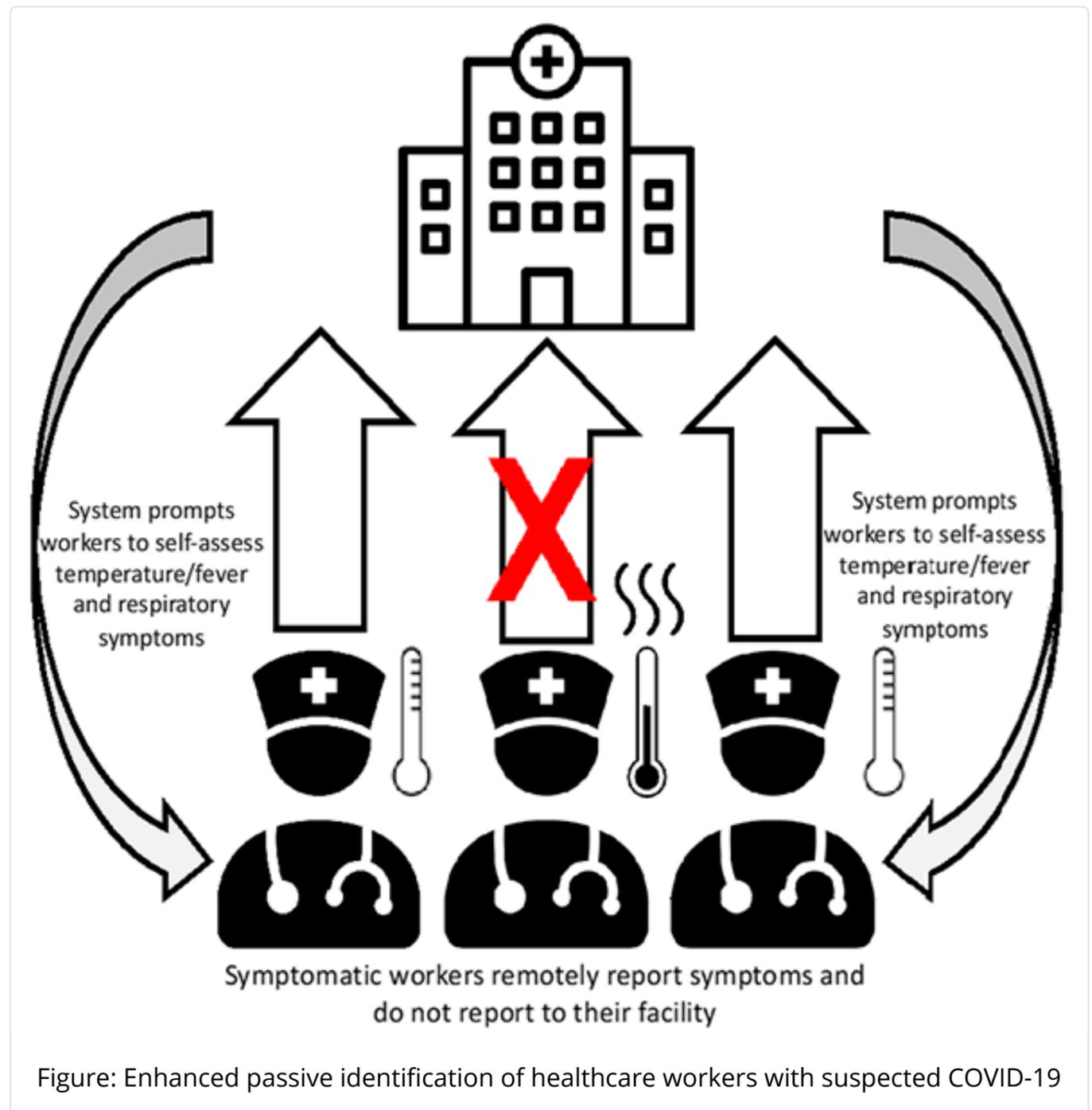
In addition to passive strategy, establish a plan to remind or prompt workers to self-assess for symptoms consistent with COVID-19. Common reminders include automated text messages or phone calls.

Rationale:

Evidence suggests that simple automatic reminders can increase adherence.

Requirements:

- All requirements of *Passive Strategy*
- Automated (e.g., mass texting service) or manual system (e.g., direct messaging or phone calls) to contact healthcare workers as prompt for self-assessment



Requirements (Automated System):

- Mass Text Messaging Services capable of sending SMS (short message service) messages to groups of people simultaneously. Mass Text Messaging Services are sometimes provided by independent internet-based service companies or, in some settings, are provided by cellular service providers.
- Database of contacts (i.e., healthcare workers under monitoring). In addition to contact number, database fields may include name, position, work unit/area, and monitoring end date.
- An effective and informative mass text message including frequency of messaging, timing of delivery, and any interactivity of interventions⁶.

Requirements (Manual System):

- Database of contacts (i.e., healthcare workers under monitoring). Because of the effort required in manual systems, this database should be carefully targeted to minimize workload and maximize benefit. Considerations for targeting might include:

- Healthcare workers with documented COVID-19 exposure
- Healthcare workers serving a population at high-risk of COVID-19 complication
- Staff available to contact monitored healthcare workers with reminders.
- Phone and phone credit to support messaging and or calls.

Considerations:

- Same as *Passive Strategy*
- Funding may be required to support bulk text messaging

Active strategies

In-person active strategy

All healthcare workers present for in-person evaluation of symptoms and fever prior to each shift. If symptoms consistent of COVID-19 are reported or observed, healthcare workers are provided with immediate follow-up actions.

Remote active strategy

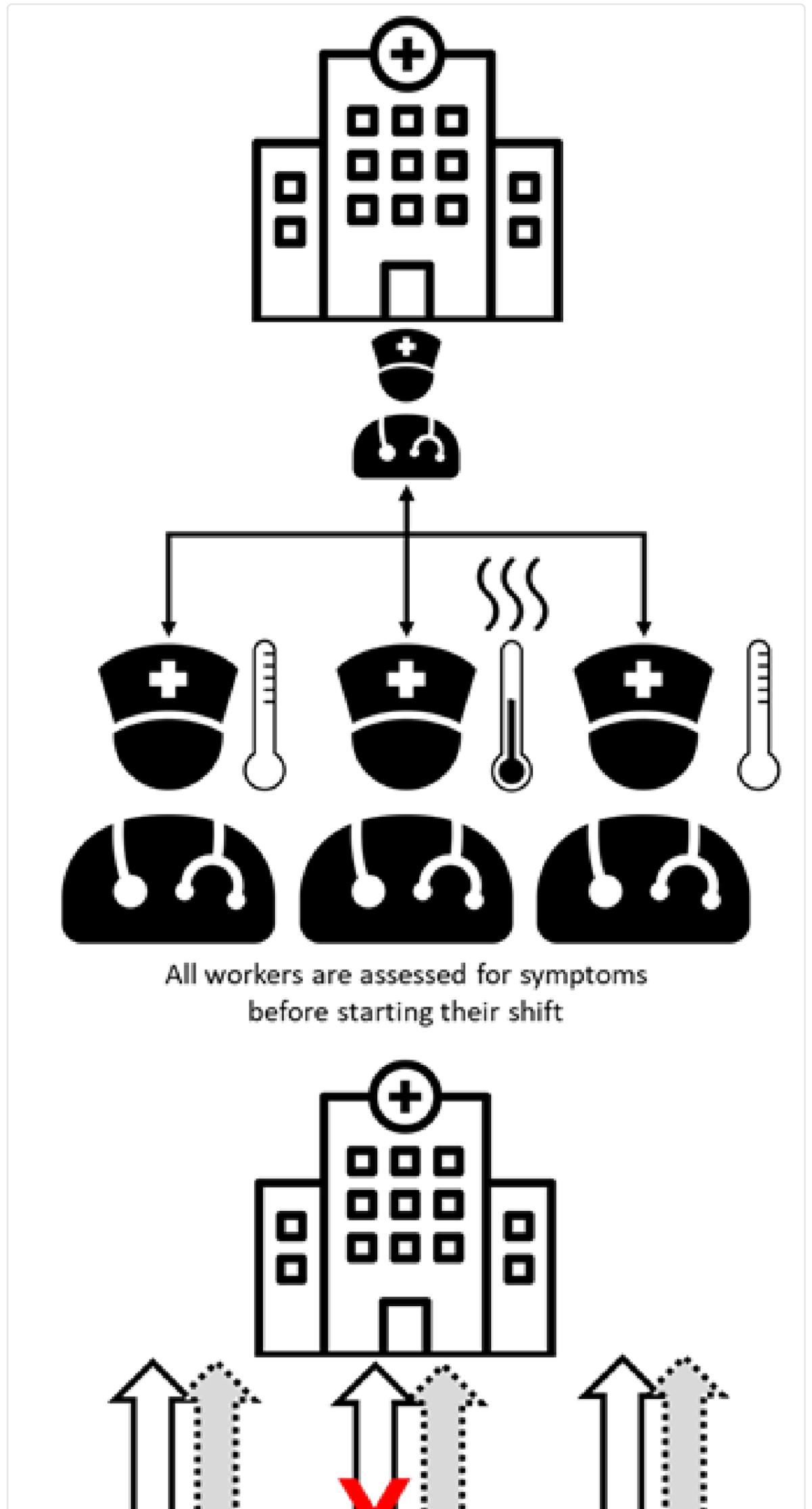
All healthcare workers report (e.g., by call or text) the absence or presence of symptoms consistent with COVID-19 remotely each day. Staff that fail to report or report symptoms are followed up.

Rationale:

While there is limited evidence for the benefit of active healthcare worker monitoring, active strategies will theoretically result in increased healthcare worker adherence to self-evaluation of symptoms, thus enhancing patient protection.

Requirements (In-person active strategy):

- All requirements of *Passive Strategy*
- Dedicated staff to evaluate healthcare workers before their shift (active) or respond and monitor healthcare worker reports
- Physical area for staff evaluations that will allow recommended social distancing (i.e., at least one-meter) and includes adequate hand hygiene stations (soap and running water or alcohol-based hand rub)
- No touch thermometers
- Implementation plan that includes a method to ensure that staff present at



method to ensure that staff present at a given place for pre-shift evaluation

- Accountability system to ensure all healthcare workers have been evaluated (e.g., work slip sign off)

Requirements (Remote Active Strategy):

- All requirements of Passive Strategy
- Accountability system to ensure all healthcare workers report in remotely prior to their work shift

Considerations:

- Same as Passive Strategy.
- Active monitoring of healthcare workers can be highly resource intensive. There is limited evidence of increased effectiveness in prevention of nosocomial transmission beyond passive strategies.
- Acceptance by staff can be limited by perceptions of mistrust in ability to monitor and appropriately report symptoms.
- Active monitoring can decrease the likelihood that healthcare workers self-monitor signs and symptoms. Ideally, healthcare workers are checking their own temperature and symptoms and will not present if not indicated. Any action that weakens self-monitoring should be implemented with caution.
- To decrease workload, and if accountability can be maintained, the following can be delegated to unit/immediate supervisors (e.g., head/charge nurses, department heads):
 - responsibility for receiving symptom/temperature reports
 - monitoring staff compliance for the *remote active strategy*

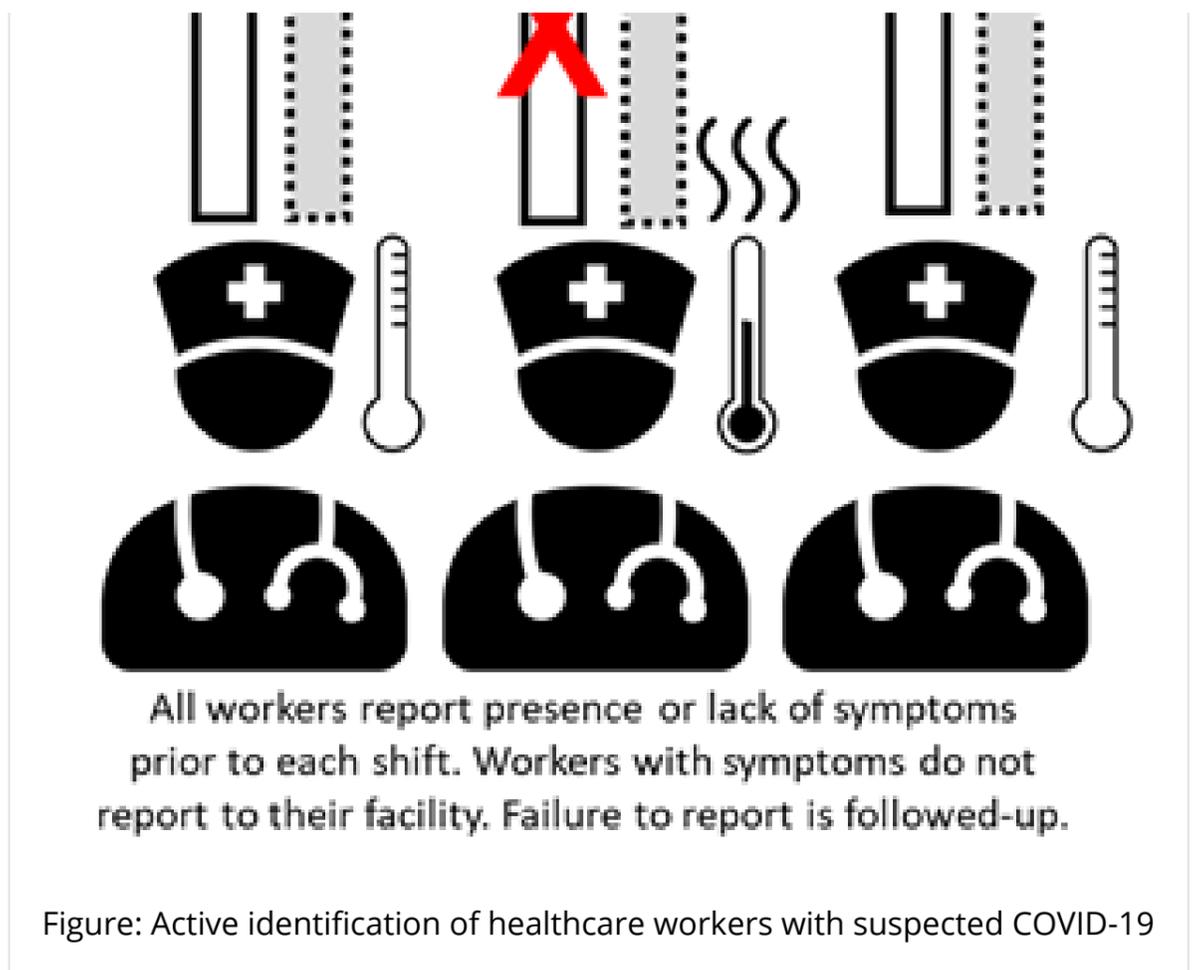


Figure: Active identification of healthcare workers with suspected COVID-19

6. Identification of Inpatients with suspected COVID-19

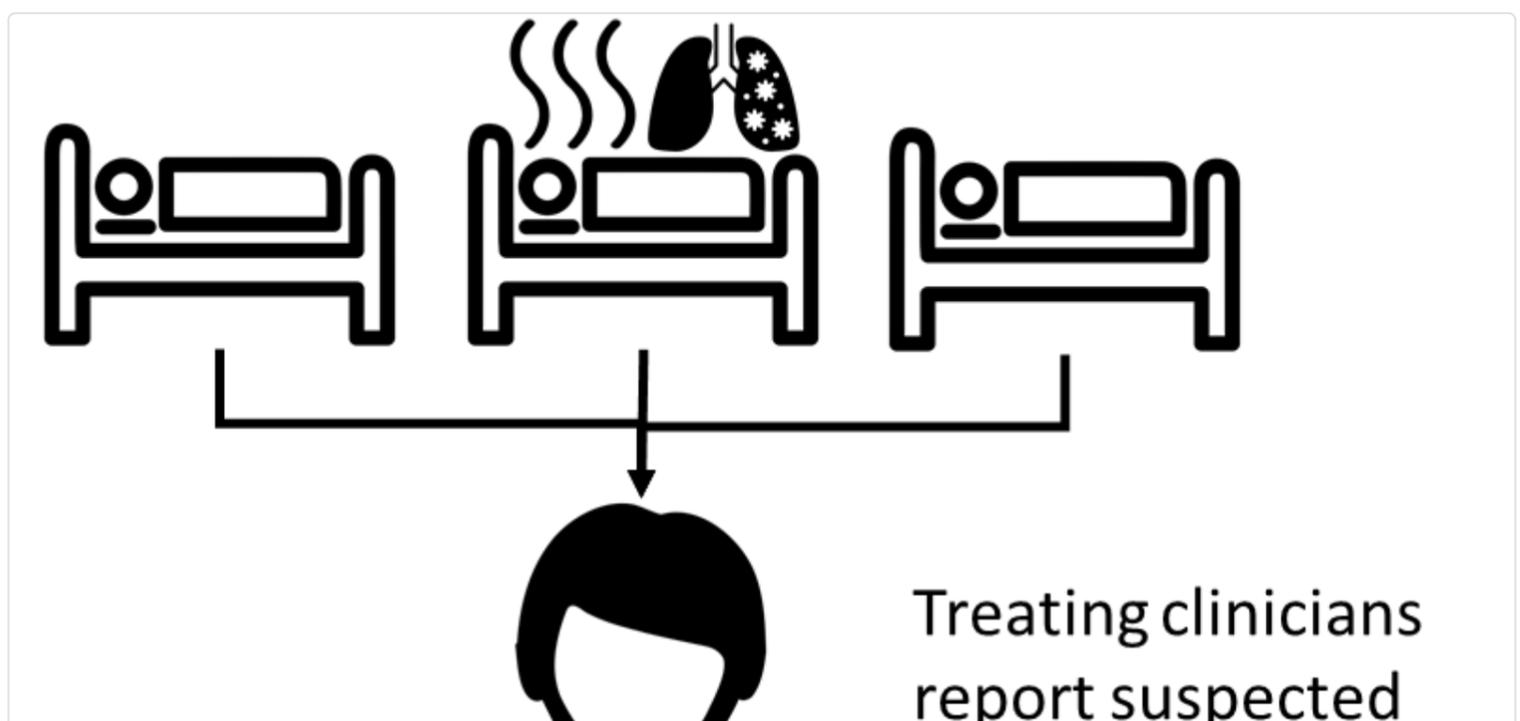
The development of acute respiratory infection and healthcare-associated pneumonia are common complications of hospitalization. However, it is important that clinicians maintain a high level of suspicion for COVID-19 when there is a compatible presentation. Because healthcare facilities often represent a gathering of individuals at higher risk of infection and adverse outcome, the potential of outbreak and harm to patients requires special effort to ensure any inpatient COVID-19 cases are identified.

A goal of identifying inpatients with suspected COVID-19 is to guide infection prevention and control (IPC) strategies to prevent or limit transmission in healthcare setting. See interim WHO guidance [here](#) ⁷.

Passive Strategy:

Clinicians are kept informed⁸ on:

- Current COVID-19 case definitions
- Latest description of COVID-19 clinical presentation



- Relevant local epidemiology, including at risk groups and association with travel or area of residence
- Facility COVID-19 admission triage, and cohorting practices

Clinicians are also made aware of what to do if they suspect COVID-19 in a hospitalized patient, including isolation precautions, PPE use, reporting/informing IPC focal point at the facility and public health authorities, and how to obtain testing, if available

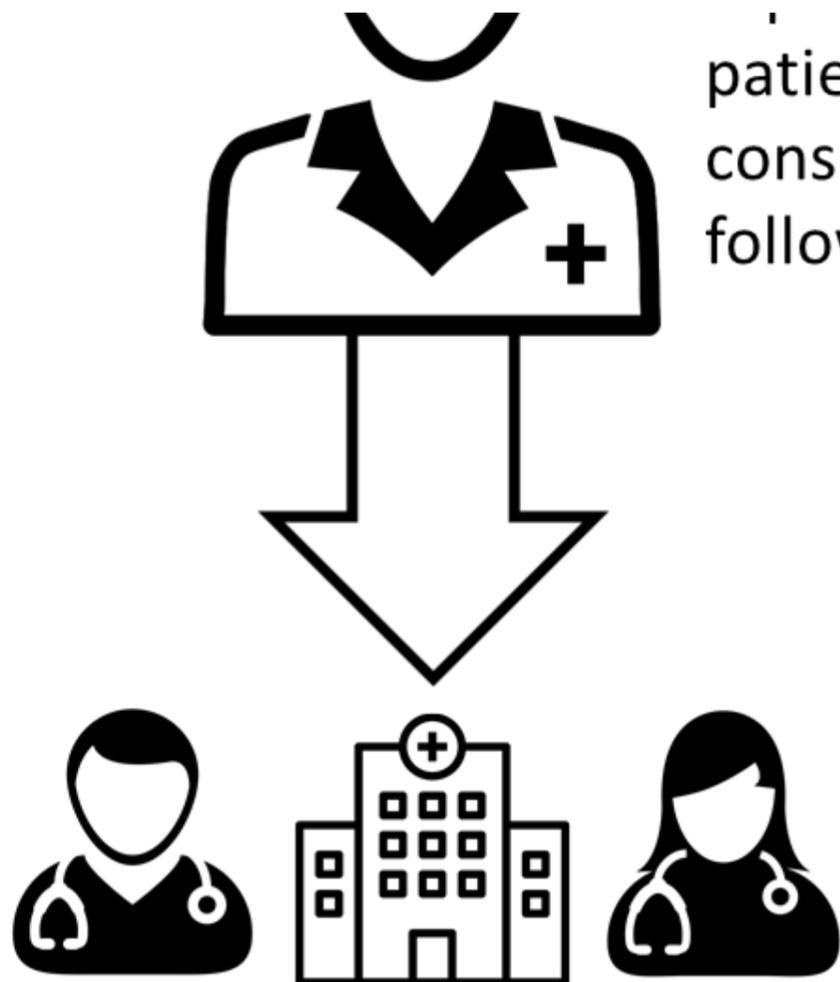


Figure: Passive strategy for identification of inpatients with suspected COVID-19

Recommended Surveillance Capacity Level:

Applicable at all HAI surveillance capacity levels (i.e., Very Low to High)

Rationale:

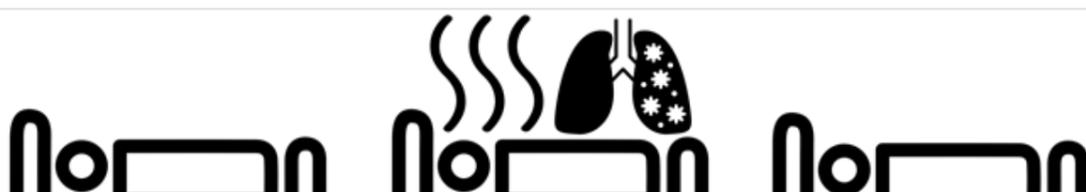
Minimal disruption of existing clinical practice and no requirement for standardized data collection or form completion. Strategy seeks to encourage recognition and reporting by *astute clinicians*.

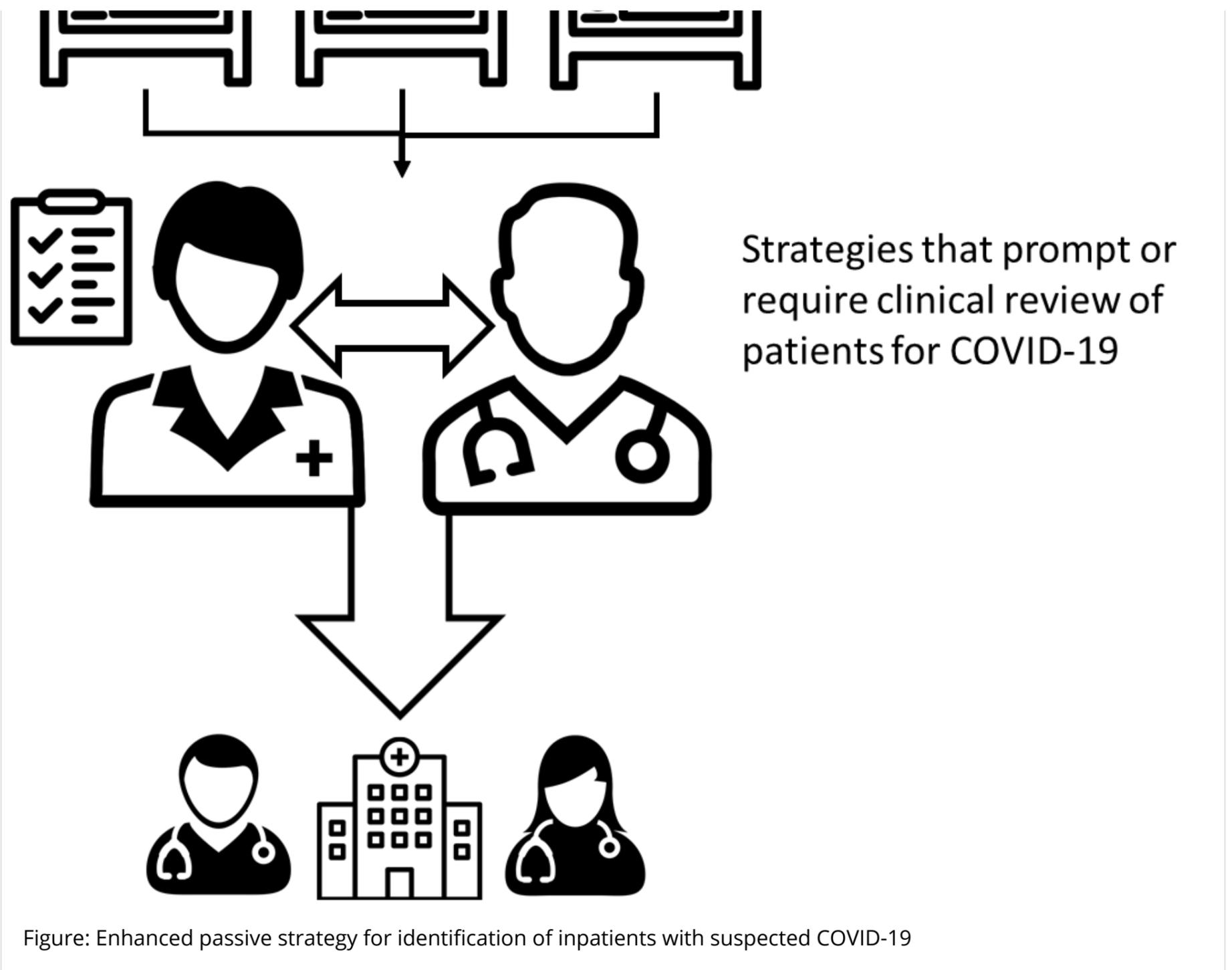
Requirements:

- Regular and up-to-date educational materials/job aids provided to and accessible by clinicians
- COVID-19 case definitions⁹
- Standard operating procedure (SOP) for response to identified suspect case patients (e.g., isolation, cohorting, PPE). See WHO interim guidance ([here](#) ) for recommendations
- Acceptable reporting/communication channels to hospital administration and public health authorities

Considerations:

- Strategy is dependent on participation and skill of available clinicians and an understanding of local epidemiology and clinical presentation of COVID-19, which may differ in different populations.
- Limited to no access for diagnostic testing will complicate this effort with the most conservative strategy being to treat all suspect cases as confirmed cases (empirical case determination) – potentially wasting resources, and if cases are cohorted, mixing positive and negative patients for extended periods.
 - The degree of resource waste and case patient mixing will depend on the accuracy of empirical case determination.
 - Supporting empirical case determination through clinician education and job aids (as described) can help improve accuracy of clinical diagnosis of COVID-19.





Enhanced Passive Strategy:

Enhancement of the passive strategy can be achieved through establishing systems that prompt or require clinicians to regularly review all patients as to their likelihood of harboring COVID-19. Example enhanced passive strategies might include:

- Incorporating consideration of COVID-19 into sign out reporting
- Requiring units to provide a daily clinician-generated list of suspected cases, including if there are zero cases
- Specific daily request to clinicians to report and discuss encountered patients with symptoms/history consistent with COVID-19

Recommended Surveillance Capacity Level:

Applicable in most HAI surveillance capacity levels (very low to high)

Rationale:

Dialog and accountability for case finding and reporting can improve empirical case determination, ensure patient evaluations are not missed, and help avoid clinician complacency over the long term

Requirements:

- All requirements of *Passive Strategy*
- Strategy to prompt and/or ensure clinician review – Requirements will depend on selected strategy

Considerations:

- Effective strategies will be context specific – requiring thought and effort in design and implementation

- May represent changes in current practice limiting acceptability

Active Strategy:

Active case identification involves targeted data collection and review of patient information by groups specifically responsible for the identification of suspected COVID-19 cases. Examples of groups responsible for case identification and active case identification may include:

- Ministries of Health
- Sub-national/local public health authorities
- Facility infection prevention and control teams

Recommended Surveillance Capacity Level:

High existing surveillance capacity or medium capacity with the provision of additional resources

Rationale:

Smaller more centralized team responsible for case identification can increase overall quality through dedicated training, improved engagement, limiting of competing priorities, and standardization of methods



Requirements:

- Team with the information access, resources, and experience necessary for systematic review of patient information in order to appropriately apply standardized suspect case definitions
- Group(s) with availability and responsibility for data collection, analysis/presentation, and information sharing
- Group(s) with availability and responsibility for review of case-finding information with the authority and willingness to take appropriate action

Considerations:

- Highly resource intensive
- Teams with the requisite skills can be difficult to build during outbreak response periods
- Separates case finding activities from patient care activities, which can decrease acceptability and impact sustainability
- Value of active inpatient case finding, especially the context of limited diagnostic testing, should be carefully considered

7. Case Definitions

REFER TO WHO [HERE](#) FOR CURRENT COVID-19 SURVEILLANCE AND CASE DEFINITIONS

Suspected Case Definitions

A. Symptoms + Travel History	B. Symptoms + Epidemiologic Link	C. Severe Symptoms
<p>A patient with ALL of the following:</p> <ul style="list-style-type: none"> • acute respiratory illness • no other etiology that fully explains the clinical presentation • a history of travel to or residence in a country, area or territory that has reported local transmission of COVID-19 disease during the 14 days prior to symptom onset 	<p>A patient with ALL of the following:</p> <ul style="list-style-type: none"> • any acute respiratory illness • contact of a confirmed or probable case of COVID-19 disease during the 14 days prior to the onset of symptoms 	<p>A patient with ALL of the following:</p> <ul style="list-style-type: none"> • severe acute respiratory infection • requires hospitalization • no other etiology that fully explains the clinical presentation

See: [https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-\(2019-ncov\)](https://www.who.int/publications-detail/global-surveillance-for-human-infection-with-novel-coronavirus-(2019-ncov)) for details.

Confirmed Case Definition

Currently, a confirmed case is a person with laboratory confirmation of infection with the COVID-19 virus, irrespective of clinical signs and symptoms.

Considerations

- If testing is unavailable or severely limited, confirmed case counts will not reflect the true burden of disease. In this situation, caution should be used in using case counts for decision making.
- Suspected Case Definition C. (Severe Symptoms) is applicable for inpatient case finding but may identify a substantial proportion of false positives. Especially when diagnostic testing is limited, the value of assessing travel history and epidemiological links/contact may be of value.

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