COVID-19 Cohorted Voluntary Self Quarantine Guidelines

2020-03-20

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Application

This guideline applies to frontline healthcare workers (doctors, nurses, med techs, respiratory therapists, radiology techs, and others) who are in front-line emergency medicine roles, working and living in direct contact with COVID-19 patients, and are planning to self-quarantine for the safety of their loved ones.

Purpose

Ensure the health and wellbeing of our emergency care providers and of their families. To maintain an effective force and support a prolonged effort dealing with the COVID-19 pandemic.

Contents

1. Background

- COVID-19 was declared a global pandemic by the World Health Organization (WHO) on March 11th, 2020 [1]
- COVID-19 continues to exhibit exponential growth, the number of reported cases doubling every four days in the continental USA and every eight days globally [2,3]
- Current scenarios predict a 20-60% infection rate will result in all US hospital beds being overwhelmed by 200% to 700% within two to six months [4]
- COVID-19 is most contagious amongst family members and co-habitations within single residences as evidenced by family clusters [5]
- Risk of transmission within physicians/clinicians' families will negatively affect their ability (and willingness) to provide essential care
- Not having the right safety measures in place to reduce familial transmission is a MAJOR concern

for front-line Emergency Department clinicians and staff [6,7,8]

2. Summary Statements

These Cohorted Voluntary Self-Quarantine (CVSQ) guidelines should be seen as an investment in protecting clinical staff and their families. It will be critical to maintain an active workforce of skilled physicians/clinicians for the duration of the pandemic. The goal is to "flatten the curve" through social distancing and prevention/delay of exposure and spread of COVID-19 within our community. The

inherent qualities of COVID-19 necessitate that CVSQ be implemented proactively.

- The pandemic will require an extended effort by medical staff, on the order of six to eighteen months
- Commitment by medical staff to the pandemic will require long periods of time away from their families followed by voluntary self-quarantine of up to 14 days after their last clinical shift before they can safely re-integrate
- CVSQ allows for easier support of clinical staff by those wanting to donate resources
- CVSQ ensures that the professional clinical workforce are able to provide care at a high level for what will be a marathon-like response
- CVSQ allows for targeted psychosocial support to proactively address inevitable acute stress and post traumatic stress disorders (PTSD) that comes from working in an overwhelmed clinical environment
- Successful planning and implementation of CVSQ will benefit the local business community immediately and in the long term

As physicians/clinicians, we are almost always caring for more than just the patient. Usually, this involves addressing the concerns of a patient's entire family, especially in critical and end of life care. Those outside of this system rarely consider that the healthcare workforces' concerns extend beyond their patients and professional community. Healthcare providers are also responsible for the wellbeing of their families and of themselves. The health and well-being of our frontline clinicians is essential for the health and wellbeing of our community, especially in the time of epidemics & pandemics.

3. Guidelines

4. Understanding & Assumptions

- Individuals become contagious at least 2-3 days prior to symptomatic onset [9]
- There is significant investment and activity in preparing hospital operations for waves of critical respiratory failure patients *(3/17/2020 - Italy reporting 50-70 patients/day in one hospital [10,11])*

- ➢ Front-line Emergency Medicine physicians/clinicians and staff are at highest risk due to undifferentiated respiratory illness patients presenting and patients with non-respiratory complaints actually being vectors of COVID-19 *(3/24/2020 - Spanish medical staff make up ~14% of all infected [12])*
- ➢ Critical care staff are at high risk, as patients are preselected by severity and personal protective equipment (PPE) use is most stringent [13]

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5. Current Situation in the USA

- ➢ Epidemiologic growth curve of COVID-19 more closely resembles Italy than places like Singapore [14]
- ➢ Poor instrumental support for front-line ED physicians/clinicians/staff that would protect them (lack of adequate PPE)
- ➢ Lack of strategic planning for the safety of care providers families (lack of CVSQ housing options during this pandemic).
  - ➢ Social situations for physicians/clinicians/staff are diverse
  - ➢ Most physicians/clinicians are not in the position to either financially afford to obtain a separate residence to prevent exposure to their households
  - ➢ Family discord has been reported in the current COVID-19 physician/clinician population (get examples from Drs. Hammerstedt, Moody, and/or EM docs)

Unlike in many countries, clinicians in the US do not live on hospital grounds or in subsidized hospital/university housing. Many are trying to create plans for trying to minimize exposure risk to cohabitating family members without much evidence-base from which to find their decisions for minimizing exposure risk. Some clinicians are choosing to self-quarantine in hotels or other solitary situations that have the potential to have negative emotional and psychological consequences that will affect their ability to care for patients during this pandemic.

Suggested language to add: CVSQ addresses these concerns by reducing the burden on the healthcare staff to reduce risk of exposure to families, loved ones, and colleagues by having a structured mechanism in place to implement quarantine. The proposed solution seeks to identify and coordinate quarantine locations for the healthcare community in Pima County and in other locations where this program is replicated and scaled using the collective impact model.

Potential solutions to improve workforce well-being and longevity in service during COVID-19 acute pandemic

- Stakeholder map those who would benefit from ensuring a longitudinal robust emergency response

    - Citizens/community members
    - Business leaders
    - Political leaders
- Create a more optimal plan (or at least options) for front-line clinicians to balance professional obligations and personal risk
    - Cohort comfortable housing
        - Promote morale while reducing risk to physician/clinician/staff families
            - Private and social areas
            - Supported with psychosocial support
            - Robust WIFI and teleconferencing
            - Exercise and yoga capabilities
            - Capabilities to come and go, assuming on self-quarantine standards (running, biking, and other activities >6ft from others)
            - Games and other activities in living quarters (eg. Foosball, darts, other games)
            - Capabilities to cook and have food delivered
            - Laundry facilities
- Other considerations
    - Would be wise to use multiple buildings (eg. Houses instead of dorms/hotel), as it's unknown if this model could lead to increased exposure...individual buildings would enable self-containment
    - Local business
    - AirBnB
    - University Dorms
    - Tiered accommodations (eg. Well/asymptomatic, symptomatic, ill-not requiring hospitalization)
        - Could have tiered support as well.
- Other facets of implementation to consider (and document in the operational plan):
    - Tracking and coordination of workforce members while in quarantine.
    - Policies associated with food delivery, visitation, etc. (These may differ depending on type of accommodation- dorm, hotel, or AirBnB)
    - Security and safety: It is likely that media may show up to these locations if they are widely released. Therefore, it is important to anticipate and address this through 'ground rules'.
    - Cleaning and sanitation of rooms before reoccupation
    - Infection prevention policies to protect hotel staff, reduce transmission (particularly in hotels)
    - Liability issues: (post outbreak) ensuring safe re-entry of accomodation site post outbreak

Accommodation options (all are in process of coming online):

➢ University dorm for larger number of staff accommodations
    - This is in motion and reportedly UA is working to hav the Arbol La VIDA Complex available by Wednesday 3/25.

        - 5 buildings
        - 700 capacity at double occupancy
            - (really 350, as we would house 1 healthcare worker per room)
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        - Concerns to address:
            - Are there kitchen facilities
            - Laundry facilities?
            - Will need to incorporate social cohesion interventions
                - potential self-isolation could have psychological harm, unless common spaces are ensured to address socialization
            - No kitchen
- Hotels currently unoccupied
    - UA planning to utilize the Aloft Hotel at Speedway and Cambell
        - ?# floors
        - ?# total beds
    - Chamber of Commerce and other contacts in the community associated with local and national hotel chains have expressed interest in setting up support housing
        - This could be crucial for ensuring we are providing CVSQ options for all healthcare workers in the region
- AirBnb
    - Have had high level contact with VP Global Policy & Communications (Chris Lehane); Global Head of Social Impact and Philanthropy (Kim Rubey)
        - Currently working on a similar Self-Quarantine effort in Italy, they will also be planning to expand the infrastructure for other locations
            - Will need to request capability to have local coordination capabilities
- Utilization of existing housing resources (that are currently furnished & unoccupied)
    - et up to house 3-10 clinical staff during stretches of clinical shifts (tours) and 14d post-clinical tour self-quarantine
    - Existing furnished vacation homes that are unoccupied
        - Donated use for 3+ months
            - Could be offered as a tax-deductible donation by owners to
            - University foundations
    - Use of vacation resorts currently not occupied due to travel ban
    - Would have to guarantee comprehensive deep cleaning status-post utilization
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Creating this cohort voluntary self-quarantine situation will provide an opportunity to study the impacts on transmission within physician/clinician/staff families, professional/personal wellbeing, and opportunities to improve pandemic preparation and response to optimize outcomes for patients, clinicians, and the community.

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6. Definitions

7. Key and Relevant Documents

8. Documentation Management and Control

Coordination and discourse with Univ. of Arizona Dept of Emergency Medicine leadership, National Emergency Medicine leaders, and local Tucson business leaders.
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To do:

- Infrastructure for this working group (coms, logistics, tracking, etc)
    - Eg. Google Drive, Slack Channel, Dropbox, Whatsapp
- Design survey initial survey instrument for ED clinicians and staff - acceptability and requirements for agreeability of cohorted voluntary self-quarantine
- Aggregation of potential housing resources that could be used as a scalable model (airbnb, dorms, hotels etc)
- Communication strategy for different audiences
- Evidence-based justification for the proposed/potential implementation plans (help from others who have access to this document and working group)
- Models for business impacts and potential significant upside for corporate partners
- Plan for following CVSQ cohort to evaluate health, social, and economic impact (multidisciplinary perspective, mixed methods)

Implementation Science Framework: Cohorted Voluntary Self-Quarantine (CVSQ) Program

Outline below summarizes (roughly) points for evaluation of CVSQ recruitment, implementation, and impact. Please edit – this is a first attempt to get organized. Goal is to structure detailed evaluation to inform creation of a scalable model.

Objective: To provide dedicated housing for healthcare workers (HCWs) in Tucson throughout the COVID-19 pandemic surge to offer physical and psychosocial support to HCWs and protection for their families and communities.

Recruitment:

- Eligibility: frontline healthcare workers across job categories (MD, PA, NP, RN, RT, MAs, techs & triage/reception)
    - Acute care & ED HCWs only?
    - Primary care (FQHCs), urgent care HCWs too?
- Geographic scope: Tucson initially, potentially scaled up as support grows
- Methods: Email to HCWs at Tucson facilities using listservs, possibly flyers, HCW liaisons at sites (folks on board prior to launch of program who can serve as champions)
- Marketing: concise infographic, flyer w/program logo, emphasize sponsors (UA if dorms, participating hotel names/logos, AirBnB)
- Consent: upon enrolling, consent to participation in follow up surveys, focus groups or semi-structured interviews, and serial serologic testing for self and family
- Waiver: upon enrolling, sign waiver to protect program housing sponsors from medical liability
- Evaluation of Recruitment:
    - Tracking Data: # enrolled / #HCWs in recruiting catchment pool
    - Survey of Enrollees: how learned about CVSQ program, motivation for enrolling

Implementation:

- All available housing enumerated and tracked by logistics coordinator
- Locations designated as tiered: asymptomatic (no diagnosis), asymptomatic (diagnosis, recovering), mildly symptomatic, ill not hospitalized
- HCW participants grouped by:
    - tier (clinical status)
    - shift schedule (e.g., night, day)
    - job category (intentionally heterogenous?)
    - other criteria?
- Location services: high-speed internet, beds, bathrooms, remote daily tracking/check-in by project staff on symptoms/needs, thermometers, regular cleaning by professional/certified EHS company, food delivery (groceries & prepared foods), PPE and other supportive care resources for those who are ill
- Evaluation (Implementation process measures)
  Level of analysis: Housing Unit/Pod
    - Location type (dorm, AirBnB, hotel)
    - Physical characteristics (# beds, # bedrooms, central kitchen, common areas, recreation)
    - Location clinical tier designation (asymptomatic, mildly symptomatic, ill with symptoms)
        - Hotels/dorms could have multiple characteristics/designations depending on size and ability to cohort effectively
- Level of analysis: Individual
    - General demographic info on individual and family
    - Job type, shift schedule
    - In unit with individuals of same/different job types?
    - Days in CVSQ program
    - Change in location Y/N (# days in each location type)
    - Methods for staying in touch with family & friends remotely
    - Activities with others in CVSQ program (meals, exercise, recreation together?)

Impact:

- Clinical Outcomes
    - Respiratory infections while in CVSQ program (SARS-CoV-2 or otherwise)
    - Confirmed SARS-CoV-2 (at individual and housing unit/pod level)
    - Seroconversion of family members during CVSQ

- Mental Health
    - PTSD: Validated scale (e.g., IES-R?)
    - Anxiety: Validated scale (e.g., GAD-7)
    - Depression: Validated scale (e.g.,PHQ-9)
    - Sleep (Trisha Haynes?)
    - Perceptions of risk related to pandemic (make up or pull from emerging COVID lit)
    - Perceived ability to do job (some validated scales for level of control in jobs like Ganster Scale, but would want something more clinically specific or create our own)

- Social Outcomes
    - Family strain/cohesion
    - Team bonding with other members of CVSQ program
    - Job satisfaction
    - Measures of social isolation?

- Other (could contribute to economic CE analysis)
    - Number of days not worked due to illness or post-illness quarantine
    - Transportation costs saved (assuming CVSQ location closer to work than home)
    - Reduced # of contacts with non-HCW

Potential Analyses (Implementation Science): Analyses designed to both assess program and inform scalability

- Descriptive: quantitative and qualitatively describe the program experience
- Cross-sectional: test hypotheses about which implementation characteristics (e.g., housing type, heterogeneity of housemates or room-cluster associates) predict outcomes
- Quasi-experimental: measure outcomes before and after enrollment in the CVSQ program
- Prospective cohort: possibly enroll an "non-exposed" group (HCWs who do not participate in the CVSQ program) but willing to participate in study
- Cost-Effectiveness analysis

Questions or requests for clarification and new ideas (please add/contribute):

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