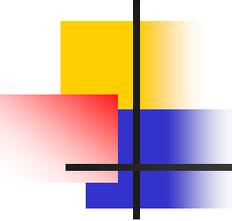


# ***Quarantine and Isolation***

## ***Introduction***

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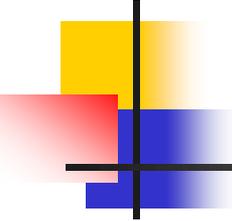
***Judie O'Donnell RN MPH***



## ***Definitions: Isolation***

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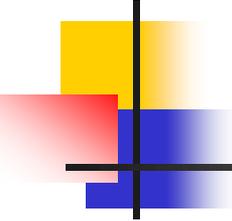
- ***Separation and restricted movement of ill persons with contagious disease***
  - ***Often in a hospital setting***
  - ***Primarily individual level, may be applied to populations***
  - ***Often voluntary, but may be mandatory***
  - ***Fundamental, commonly used public health practice***



## ***Definitions: Quarantine***

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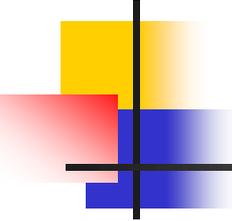
- ***Separation and restriction of movement of well persons presumed to have been exposed to the contagion***
  - ***often at home or residential facility***
  - ***may be voluntary or mandatory***



## ***Other Related Definitions***

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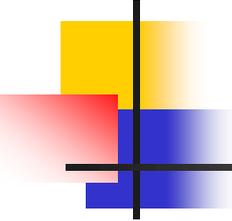
- ***Infectious disease: a disease caused by a microorganism and potentially infinitely transferable to new individuals.***
- ***May or may not be communicable.***  
***Example of non communicable is disease caused by toxins from food poisoning or infection caused by toxins in the environment, such as tetanus.***



## ***Other Related Definitions***

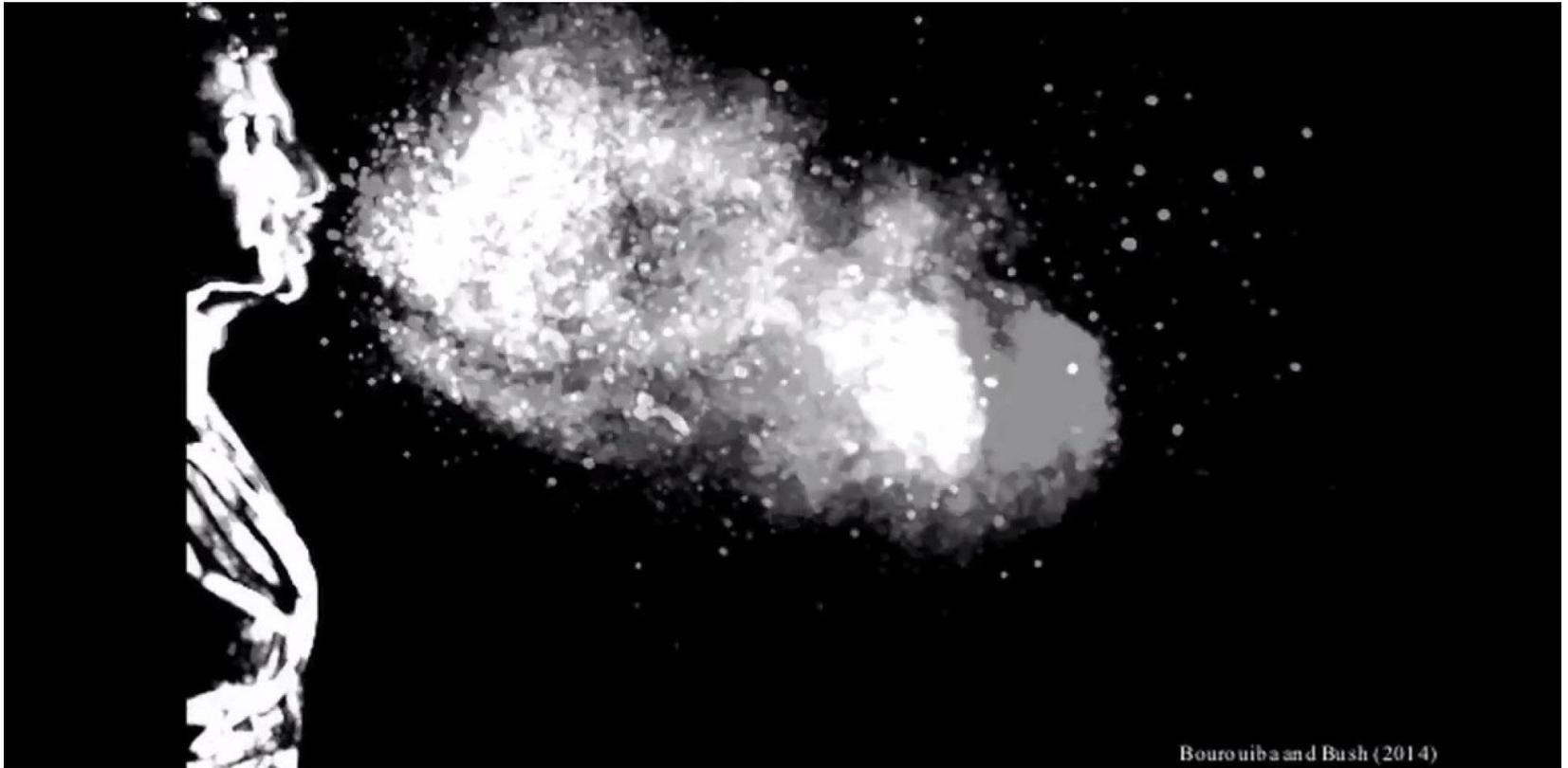
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- ***Communicable disease: an infectious disease that is contagious and which can be transmitted from one source to another by infectious bacteria or viral organisms.***
- ***Contagious disease: a very communicable disease capable of spreading rapidly from one person to another by contact or close proximity.***



# *Spreading Germs*

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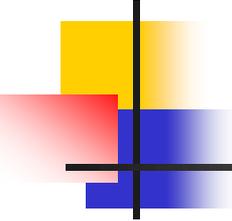


IT'S A SMALL  
WORLD AFTER ALL!...  
IT'S A SMALL  
WORLD AFTER ALL!...  
IT'S A SMALL  
WORLD AFTER ALL!...  
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WORLD AFTER ALL!...

MODERN  
GLOBAL  
MOBILITY



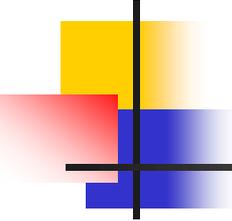
Joellella © 2003  
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## ***Quarantine: Federal Statutory Authority***

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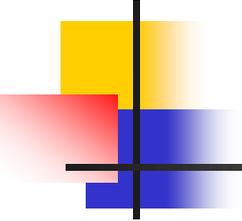
- ***CDC manages federal quarantine, with possible utilization of assets from other agencies.***
- ***CDC may intervene in intrastate incidents if requested by state or if local control efforts considered inadequate.***



## ***Foreign Statutory Authority***

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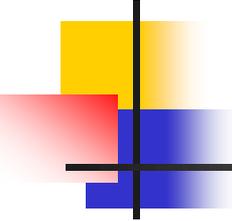
- ***Medical surveillance of arriving persons***
- ***Sanitary measures over inbound carriers, cargo***
- ***Quarantine of arriving persons (with diseases listed in the Executive Order signed by the President)***



# ***Quarantine: Intrastate Statutory Authority***

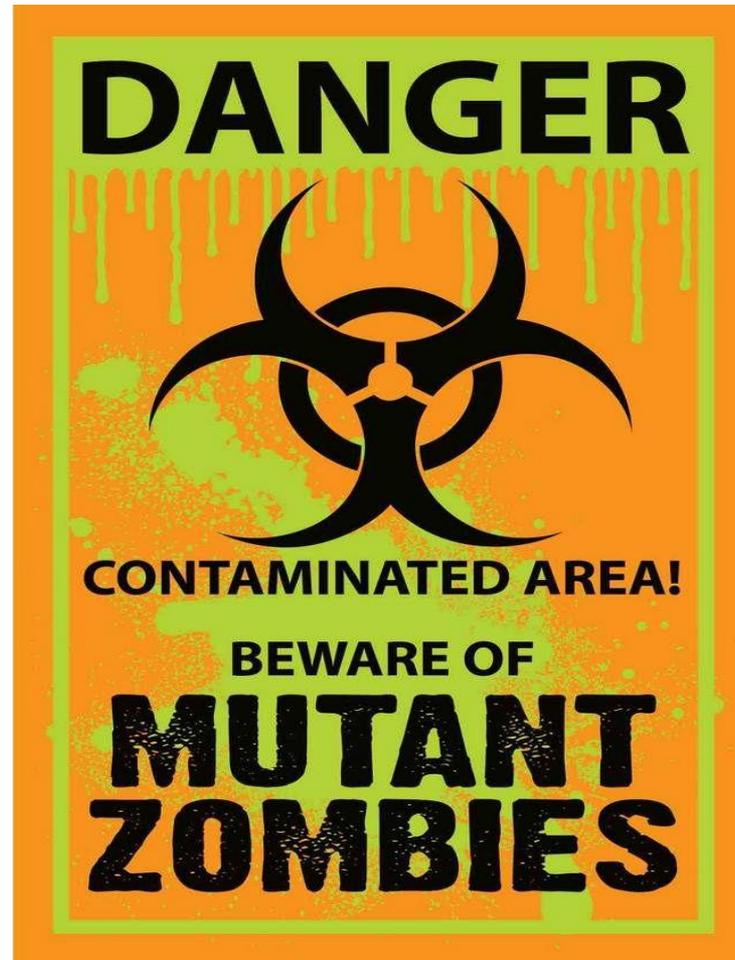
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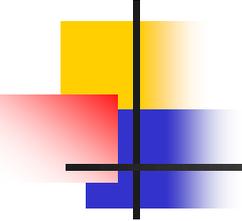
- ***Intrastate quarantine power***
  - ***Local or state public health officials have authority for quarantine when an infectious disease outbreak confined within state border***
  - ***Considered a police power-- an inherent authority to protect health and welfare of citizens***
  - ***Reserved to states (10<sup>th</sup> Amendment)***



# Quarantine Considerations

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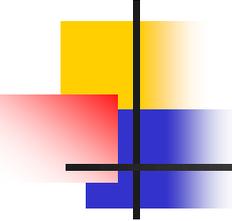




# ***Key Questions before Decision to Quarantine***

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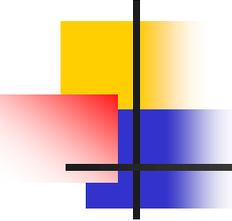
- ***Is there public health and medical justification?***
  - ***Infectious agent, communicability, risk of fatality***
- ***Are implementation and maintenance of quarantine feasible?***
  - ***Define who is to be quarantined and for how long, and availability of resources***
- ***Do potential benefits of quarantine outweigh adverse consequences?***
  - ***Determine health risks for those quarantined, consequences of quarantine disobedience, and effect on commerce***



## ***Modern Quarantine***

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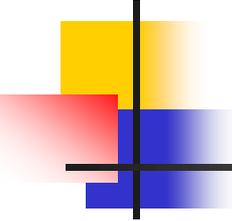
- ***Lasts only as long as necessary to protect the public by (1) providing public health care (such as immunization or drug treatment) and (2) ensuring that quarantined persons do not infect others if they have been exposed to a contagious disease.***



## ***Modern Quarantine***

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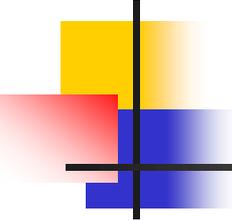
- ***Is more likely to involve limited numbers of exposed persons in small areas than to involve large numbers of persons in whole neighborhoods or cities.***
- ***The duration and scope of quarantine measures would vary, depending on their purpose and what is known about the incubation period of the disease-causing agent.***



## ***Modern Quarantine***

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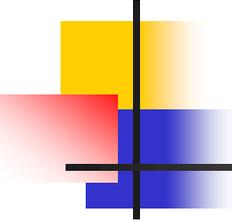
- ***Modern quarantine is used in combination with other public health tools, such as:***
  - ***Enhanced disease surveillance and symptom monitoring.***
  - ***Rapid diagnosis and treatment for those who fall ill.***
  - ***Preventive treatment for quarantined individuals, including vaccination or prophylactic treatment, depending on the disease.***



## ***Reality of Quarantine***

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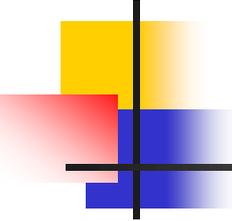
- ***Theoretically, quarantine alone can stop an outbreak, but the level of quarantine that would be necessary may be impossible to achieve and enforce with large numbers of people.***
- ***Relying solely on either a vaccination or quarantine strategy alone is probably unrealistic. Combining the two may be the most reasonable and achievable strategy, given limited vaccine and personnel resources.***



## *Reality of Quarantine*

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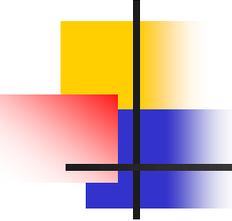
- *Quarantine does not have to be absolute to be effective. Research suggests that in some cases partial quarantine can be just as effective in slowing the rate of the spread of a disease, especially when combined with vaccination.*



## ***Level 1 Quarantine***

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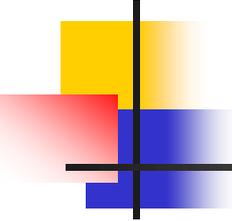
- 1. At a minimum, an outbreak of a highly contagious agent would result in travel alerts, press releases and other information being released so that the general public is aware of the situation and can make their own decision about how to manage their risk.***
- 2. Interagency partner notifications***
- 3. Self-restriction of movements***



## ***Level 2 Quarantine***

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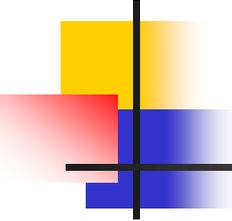
- 1. Activities implemented in Level 1***
- 2. Travel advisories to avoid the affected communities if possible. There would be a recommendation against elective travel from the affected community, but it would not be a forced restriction.***
- 3. Suspension of large public gatherings and the temporary closure of unessential public places.***



## ***Level 3 Quarantine***

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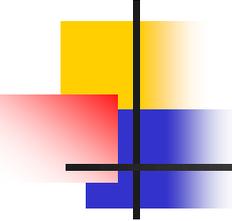
- ***Response would include all previous measures, but would actively restrict all travel to avoid the further spread of infection (e.g. closure of airports, bus stations, train stations, etc.).***



## ***Level 4 Quarantine***

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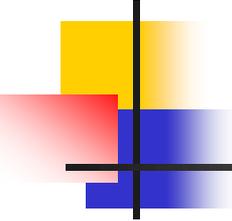
- ***The institution of the highest level of quarantine would mean the complete cut-off of an area from the outside (i.e. institution of “Cordon Sanitaire”), with mass vaccination and treatment taking place within the area.***



## ***Considerations During a Response***

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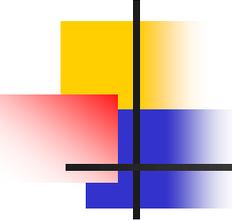
- ***Precise incubation periods do not exist for any given disease.***
- ***Infected individuals will be free of clinical signs and symptoms of the illness during part or all of the incubation period and are able to transmit the disease to others in the community.***



## ***Considerations During a Response***

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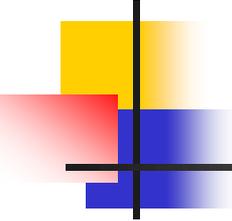
- ***Communication will be essential. When people understand the reasoning behind the control measures, they will be more likely to voluntarily comply, making enforcement much easier.***
  
- ***Information will help to prevent public panic.***



## ***Considerations During a Response***

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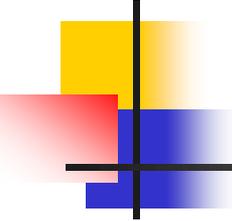
- ***The majority of the population will not have seen this public health measure in practice before, and planners will need to address current standards of civil liberties if they expect to counteract resistance. Educating the public about these issues needs to take place before the panic of an outbreak is in place.***



## ***Considerations During a Response***

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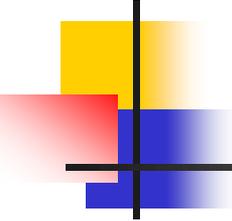
- ***Authorities must also consider how various quarantine levels would impact the movement of critical personnel and supplies into and out of the area, and how to maintain essential services while at a certain level.***



## ***Considerations During a Response***

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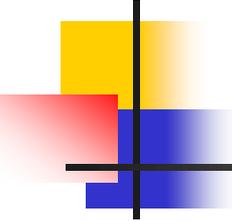
- ***If the outbreak can not be controlled quickly with more limited vaccination strategies, and if the vaccine is available, the utilization of mass vaccination of the entire community may shorten the time for quarantine restrictions and decrease the level of restrictions.***



## ***Unanswered Questions***

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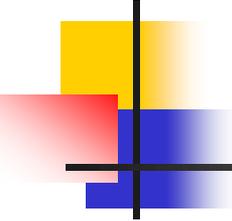
- ***How well can authorities implement quarantine or isolation measures? Current day experience is really with individuals not communities.***
- ***How quickly should quarantine measures that would restrict travel be implemented in order to prevent the spread of disease outside of an infected area?***



## ***Unanswered Questions***

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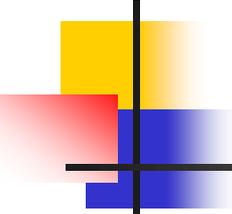
- ***Should communities that have less capabilities to respond (i.e. limited vaccine or public health/medical resources) implement travel restrictions to/from an area with cases sooner and with greater enforcement than areas that are more prepared to detect and contain an importation?***



## ***Unanswered Questions***

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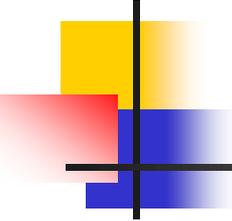
- ***How do we deal with the economic impact on individuals and communities of travel restrictions that may be in place for longer periods of time?***



## ***Planning for Effective Quarantine Measures***

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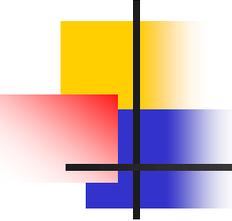
- ***The laws at all levels must be reviewed before the event. Is there sufficient local authority to implement the level of quarantine that may be necessary?***
- ***An outbreak is not the time to learn the law.***
- ***An outbreak is not the time for legal challenges to occur.***



## ***Planning for Effective Quarantine Measures***

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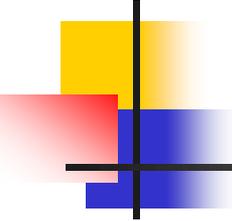
- ***There will be a need for educational campaigns targeting health care providers and the public as their primary audiences.***
- ***Messages need to be in multiple media formats with simple, short and concise informational sentences.***



## ***Planning for Effective Quarantine Measures***

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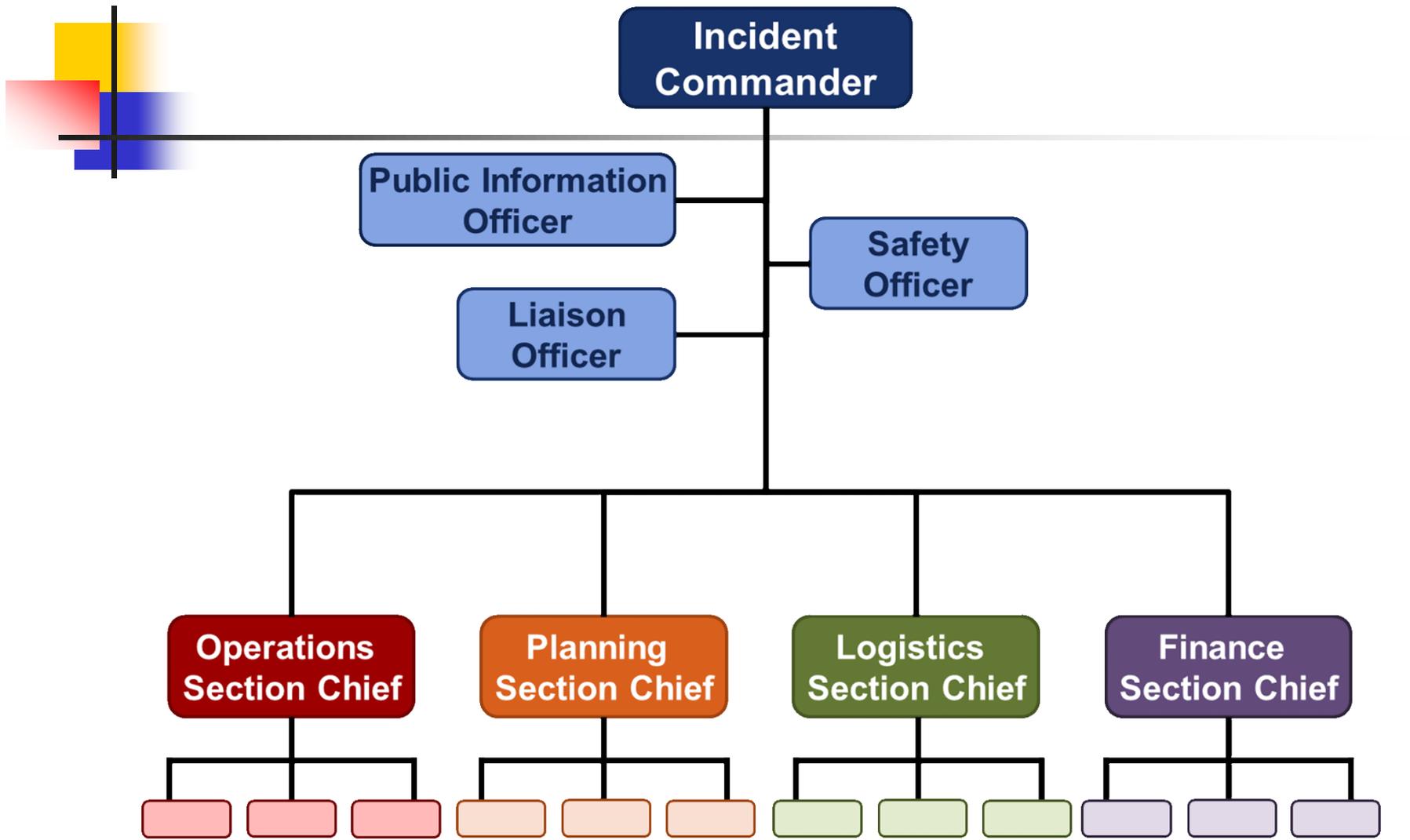
- ***Planners should also prepare plans to rapidly activate (and vaccinate) their enforcement personnel and those who would provide essential services during a quarantine of an area.***

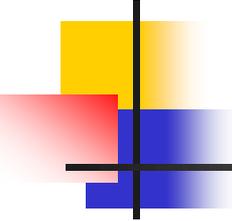


## *Planning for Effective Quarantine Measures*

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- *Quarantine or isolation of even a limited area could involve many roads and be in place for an extensive time period.*
- *While federal support for the longer duration may arrive in a few days, an effective locally implemented response will need to be in place within hours.*

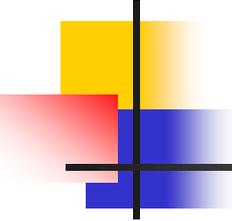




## *In General...*

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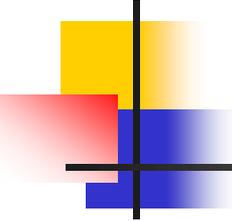
- *Establish an incident command structure that can be used for pandemic response.*
- *Establish a legal preparedness plan.*
- *Establish relationships with partners, such as law enforcement, first responders, healthcare facilities, and the legal community.*



## *In General...*

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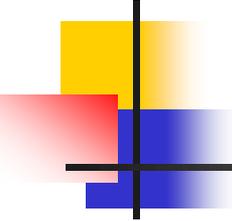
- *Plan to monitor and assess factors that will determine the types and levels of response, available local resources, and level of public acceptance and participation.*
- *Develop communication strategies for the public, government decision makers, healthcare and emergency response providers, and the law enforcement community.*



## ***Challenges-BoH/Nursing***

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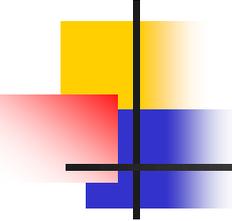
- ***Requires adequate staffing and requires a system to track information and to verify monitoring and appropriate actions based on findings.***
- ***Trained staff to provide in-person and/or telephone evaluations.***
- ***Contingency plans for managing noncompliant persons. Contingency plans for rapid isolation of persons who develop symptoms.***
- ***Hotline to notify authorities about symptoms or needs.***



## ***Challenges-Employment***

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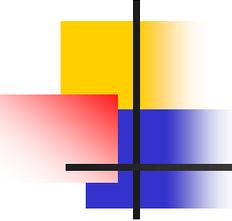
- ***Clinical monitoring at work reduces the staff required for active monitoring at the quarantine site.***
- ***Need for close and consistent pre-shift monitoring at the work site to prevent inadvertent exposures.***
- ***May require means of transporting persons to and from work site to minimize interactions; persons in working quarantine should wear appropriate PPE during transport.***
- ***Must maintain close cooperation and communication between work-site and local health authorities.***



## ***Challenges-BoH/Elected Officials***

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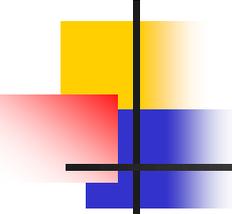
- ***May be difficult to solicit cooperation, particularly if popular buildings are closed or popular events are cancelled.***
- ***Requires excellent communication mechanisms to notify affected persons of details and rationale.***
- ***May need to provide replacement for affected activities (e.g., school, essential services).***
- ***Generally relies on passive monitoring.***



## ***Challenges-BoH/Elected Officials***

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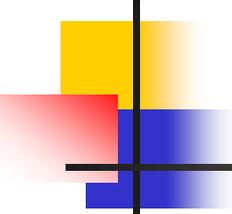
- ***May need to address mental health and financial support issues.***
- ***When an entire community is involved, requires cooperation with neighboring jurisdictions that may not be using a similar intervention, particularly in situations where persons live in one city and work in another and only one locale is affected by the intervention.***



## ***Challenges-DPH/Elected Officials***

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- ***Requires excellent communication mechanisms to inform affected persons and to maintain public confidence in the appropriateness of the chosen course of action.***
- ***Staff and supplies to maintain access to and availability of essential services and goods, including food, water, medicine, medical care, utilities.***
- ***Plan to divert flow of critical infrastructure supplies and materials that normally transit through quarantined area.***



# Resources

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- **World Health Organization:** <http://www.who.int>
- **National Institute of Health:** <http://www.nih.gov/>
- **National Institute of Allergy and Infectious Diseases National Institutes of Health:** <http://www.niaid.nih.gov>
- **JAMA – The Journal of the American Medical Association:** <https://jamanetwork.com/>
- **CDC-Quarantine and Isolation:** <https://www.cdc.gov/quarantine/index.html>
- **National Conference of State Legislatures- Quarantine and Isolation Statutes:** <http://www.ncsl.org/research/health/state-quarantine-and-isolation-statutes.aspx>
- **Health and Human Services-HHS.gov:** <https://www.hhs.gov/answers/public-health-and-safety/what-is-the-difference-between-isolation-and-quarantine/index.html>