

Non-pharmaceutical Interventions (NPI) for COVID - 19

Session Outline

Non-pharmaceutical Interventions (NPI)

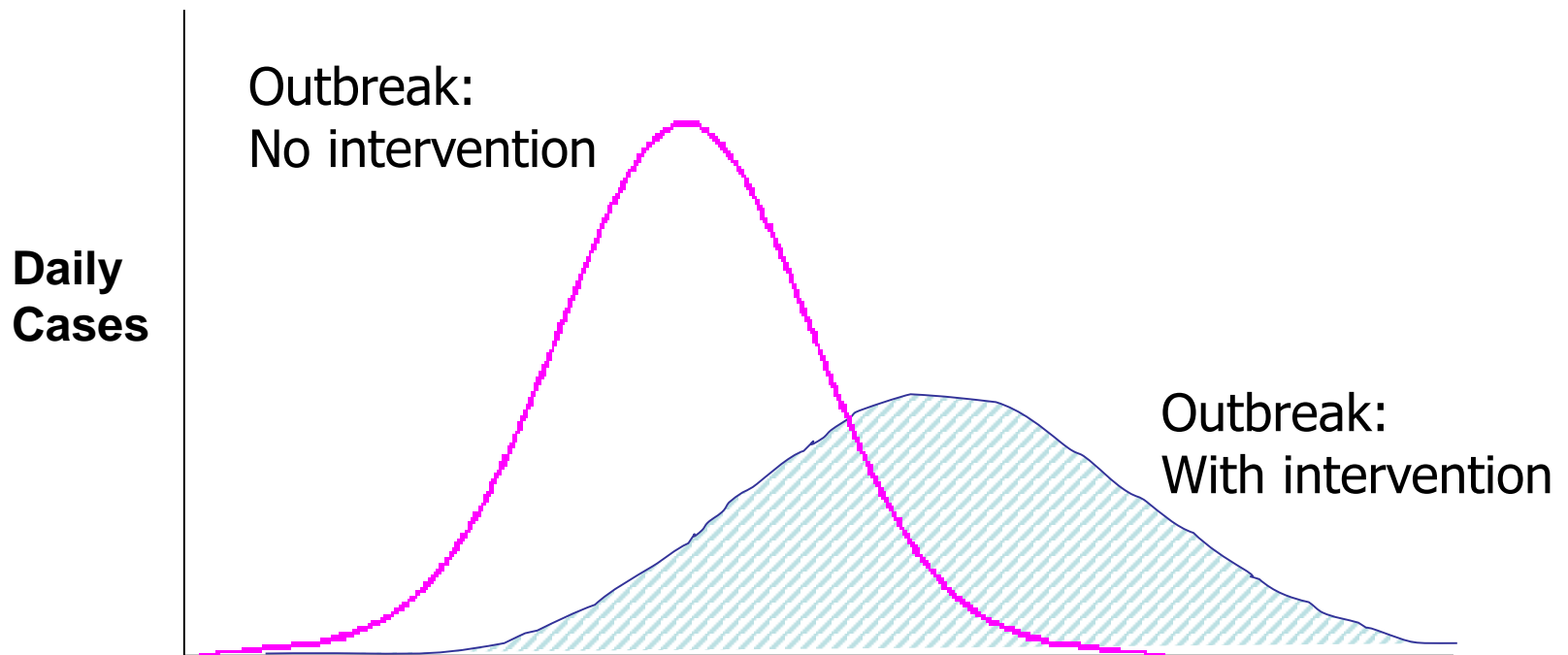
- Concept and application
- Components and levels of interventions
- NPI in the context of COVID - 19.
- Implementation of NPI
- Evaluation

Potential Tools in Our Toolbox

- Vaccine – best countermeasure **is not readily available**
- Antiviral drug could improve outcomes but **no clarity yet.**
- Antiviral prophylaxis **not available** hence no effect on reducing transmission
- **Non-pharmaceutical interventions** may reduce transmission and diminish overall health impact.

Non-pharmaceutical Interventions

1. Delay disease transmission and outbreak peak
2. Reduce peak burden on healthcare infrastructure
3. Diminish overall cases and health impacts



Isolation

- Separation and restricted movement of **ill persons**
- Would apply to even PUI
- Isolation in a **hospital –ideally in a Bio-containment facility**;
- if not available in an isolated room not sharing air-circulation with other rooms.
- Follow hospital infection prevention and control Recommendations

Quarantine

- refers to separation and restriction of movement or activities.
- Persons who, while not yet ill, have been exposed to an infectious agent and therefore may become infectious.
- Often at home
- Follow infection control practices for home care settings

Non-Pharmaceutical Interventions

Individual level

- Isolation
- Quarantine
- Infection control through simple public health measures
 - Hand washing
 - Respiratory etiquettes
 - Stay away
 - Use of PPE

Non-Pharmaceutical Interventions

Community level

- Quarantine of groups/sites
- Community wide quarantine-Cordon Sanitaire
- Measures to increase social distance
 - School closures
 - Business and market closure
 - Cancellation of events
 - Movement restrictions

Non-Pharmaceutical Interventions

National/ International level

- Non essential travel deferred
- Provide information to travelers
- Self recognition of illness and self reporting
- Entry screening (Passive)
- Exit Screening at Airports of affected countries
- Airport Quarantine
- Ban of flights/ ships originating from affected area

NPI for COVID - 19

- Individual level
 - **Isolation**
 - Hospital setting
 - **Quarantine**
 - Home, POE and hospital settings
 - **Simple public health measures for infection control** (Hand washing, Hygiene, Sanitation, Respiratory etiquettes)
 - Home, school, workplace, hospitals, markets
 - **Use of masks and gloves** (for care provider)
 - Home care, POE and hospital settings

NPI for COVID - 19 cont'd

- Community level
 - Quarantine of site (Hospital) in case of Nosocomial infection involving HCWs
 - Social distancing measures / community wide quarantine not advocated.
- National/ International level
 - Non essential travel to be deferred.
 - No need to restrict trade or Travel
 - No import of bush meat or products of similar nature.
 - Need to inform travelers on the risk

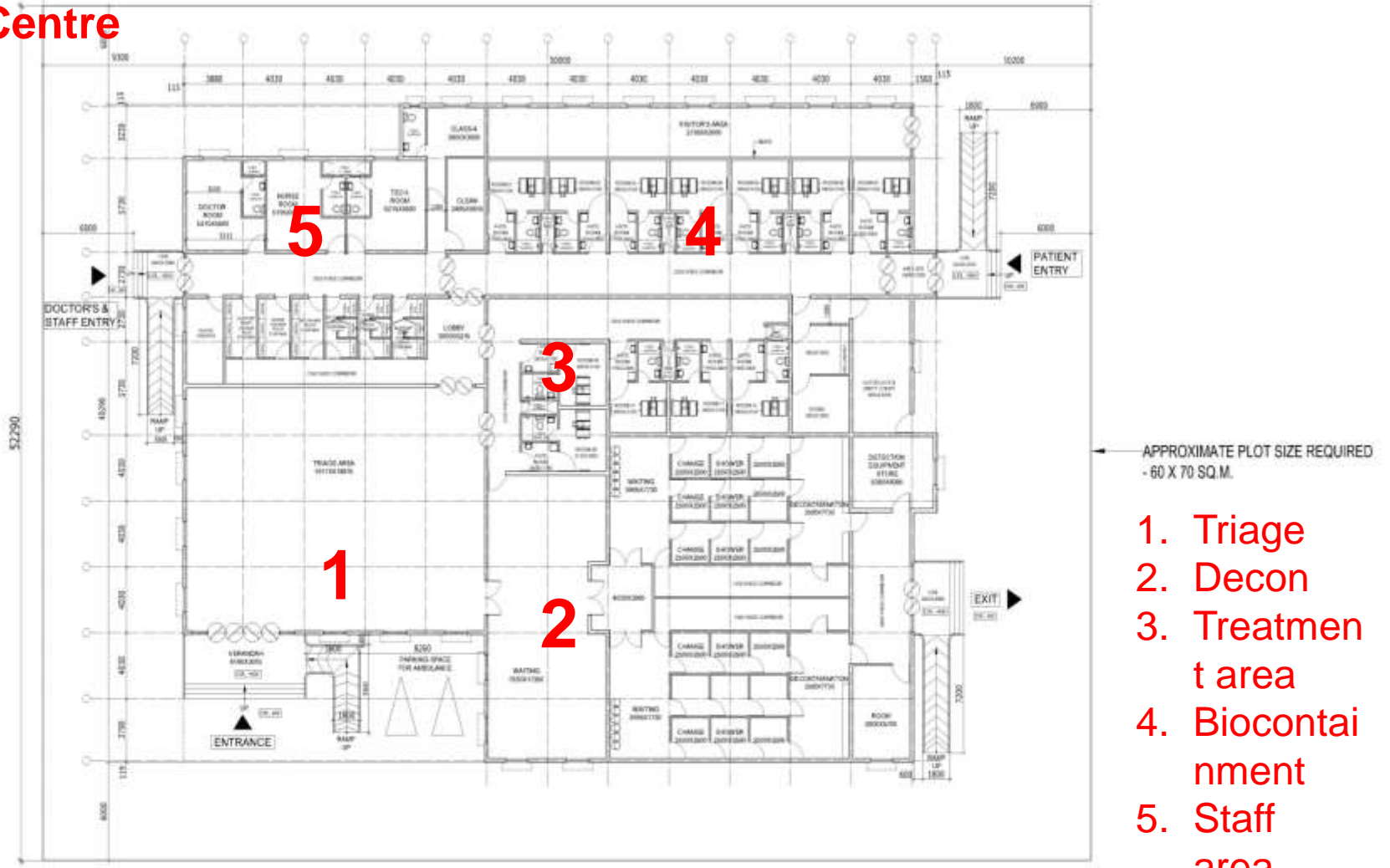
Bio Safety and Clinical Requirements

- Ideally **requires Bio - Containment Treatment Facilities.**
- These patients **often requires intensive care** that is not possible in many of our district level hospitals.
- Identified facilities also require **high level of critical care management.**
- It also need to have a **laboratory to support investigations** required to manage critical patients.
- Adequate **Infection Prevention Control Practices.**

Ideal Bio Containment Patient Care Unit

- **Negative air flow system** with greater than 12 air exchanges per hour
- **High-Efficiency Particulate Air (HEPA) filtration** system of exit air.
- **Secured access**, double door air lock main entrance
- **Separate staff entrances and exits**
- Staff **decontamination shower**
- Pass through **autoclave** to disinfect materials leaving the unit
- **Dunk tank to decontaminate lab specimens** leaving the unit
- **Video phone for patient communication**
- Dedicated laboratory to process the clinical samples.

Layout- Secondary Level CBRN Medical Management Centre



APPROXIMATE PLOT SIZE REQUIRED - 60 X 70 SQ.M.

- 1. Triage
- 2. Decon
- 3. Treatment area
- 4. Biocontainment
- 5. Staff area

NOTE:-

- 1. BUILDING FOOT PRINT - 50 X 40 SQ.M. (APPROX.)
- 2. APPROXIMATE PLOT SIZE REQUIRED - 60 X 70 SQ.M.

TOTAL BUILTUP AREA = 2000 SQ.M. (APPROX.)

GROUND FLOOR PLAN

CONCEPTUAL LAYOUT FOR SECONDARY LEVEL CBRN CENTRE

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Suggested modalities for Isolation Facilities

Isolation facilities for managing COVID - 19

- **Single room with attached washroom**, away from main patient care areas.
- The room needs to be kept closed.
- **No visitor should be allowed** except through tele/ video conference.
- **Preferably maintain the room at negative pressure**
- Health care workers attending on him should wear **full complement of PPE**.

Pressure Monitors



Air Filtration Systems



Portable units



Non Pharmaceutical interventions

Infection control :Home care settings for Quarantine / Isolation

- Requirements

- The ill person should have his or her own bed preferably in a separate room.
- Adequate air-ventilation
- Basic amenities
- Toilet facilities that preferably only the ill person use.
- Identified primary caregiver for medications and care.
- Care giver should be briefed adequately on infection control practices.

Non-Pharmaceutical Interventions

Health Monitoring

- Regular **health monitoring** of HCW in hospital settings/ Care givers in home care settings
- Self **health monitoring advisory** to other at-risk persons.
- **Reporting to nearest health facility**
- **Details of accessible identified health facility.**

Non-Pharmaceutical Interventions

Risk Communication

- Communicate the risk in clear consistent messages
- Convince public why the NPI measures are important and how they will protect the public.
- Wide spread dissemination through media
- One source for official information
- Prevention of incorrect information
- Allays psychological fear

Non-Pharmaceutical Interventions

Implementation requires:

- Clear **understanding of roles and responsibilities** at all levels
- **Coordinated planning** by many partners
 - Public health authorities, health-care providers, emergency response teams, law enforcement, transportation, civil aviation, shipping authorities
- **Trust and participation** of the general public
 - Effective risk communication, support and coordination with community groups

Non-Pharmaceutical Interventions

Evidence Base

- Limited scientific evidence about NP interventions currently exists.
- Historical and contemporary observations, anecdotal evidence
- Some evidence through mathematical models
- More Research is required

Summary

- NPI likely to be useful in delaying and reducing disease transmission, and may decrease health impact
- NPI should be used in coordination with other interventions, and early implementation is crucial
- All measures should be implemented within context of local situation.
- Limited scientific evidence. Need for further research

Thank you