

Non-Pharmaceutical Interventions

Quick Implementation Guide



Introduction and Purpose

Non-Pharmaceutical Interventions (NPI) include a wide variety of layered, non-medical harm reduction strategies such as isolation and quarantine, enhanced hygiene, protective equipment, and social distancing which mitigate the hazards and risks associated with different threats. Some level of risk is inherent in every human activity. Boards of Health and community officials can use this guide to quickly consider and select the most appropriate, least harmful NPI as speed matters for ensuring effectiveness. NPI usually require individuals to change their behaviors, which makes education a key component of all NPI strategies and NPI work best when officials and leaders model the recommended NPI strategies such as avoiding crowds or wearing a mask. An important consideration for the implementation of NPI is the prioritization, where possible, of keeping schools, medical systems, food supplies, and essential services functioning.

NPI strategies are most effective when supported by a majority of the public using multiple, overlapping strategies in coordination with State and neighboring jurisdictions. To be effective, NPI must be supported by consistent and sustained public messaging to convince individuals that these actions are both necessary and effective in reducing harm. Sustained public education is best supported by regional information sharing or a Joint Information System (JIS) that ensures consistent, actionable messages to the public using multiple methods are available to all at risk. Coordinated public messaging should be started as soon as possible in all public health emergencies to maintain confidence in public health authorities and to establish them as trusted sources of information.

Local Boards of Health (BOH) and Chief Elected Officials (CEO) have extensive authorities that are most effective in emergencies when coordinated to protect the public health and safety. Board of Health authority under MGL Chapter 111 to require public health and safety behaviors to eliminate public nuisances and sources of disease is usually reserved for situations when voluntary compliance is not widespread enough to protect the public from harm. Depending on the nature of the hazard or threat, multiple agencies in addition to Boards of Health can require NPI compliance, including Chief Elected Officials, Law Enforcement, Department of Public Health (DPH), Department of Environmental Protection (DEP), and the courts.

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About this guide:

This guide, prepared by the Berkshire Regional Planning Commission on behalf of Western Region Homeland Security Advisory Council, is designed to walk Boards of Health and community officials through the process of determining the need for NPIs based on a variety of hazards and their transmission routes using a step-by-step process that aids implementation, communications, determining needed resources, ensuring health equity, monitoring data, and demobilization.

Three primary tools:

- **Public Health Emergency NPI Response Steps:** A step-by-step process from identification of a hazard, NPI activation, to demobilization.
- **Hazards, Threats and Transmission Routes:** Details most common transmission routes for categories of hazards.
- **Decision Matrix:** Details specific NPI strategies, with the estimated resource demands, economic and social costs, and key challenges and partners.

How to use:

Boards of Health and community officials can use this guide to quickly consider and select the most appropriate, least harmful NPI as speed matters for ensuring effectiveness.

- 1.) Work through NPI Response steps 1 through 10 on page 3 of this guide.
- 2.) During step 1, consult the Hazards, Threats and Transmission Routes table on page 4, as well as the Decision Matrix on page 5. Refer back to these tables throughout steps.
- 3.) During step 8, refer to the NPI Strategy Details on page 6.

Public Health Emergency NPI Response Steps

Step 1	Assess the Threat or Hazard	Determine if NPI are needed	
	Identify the threat or hazard and populations most at risk. Is it Biological, Chemical, Radiological, Physical, Electronic, Civil Unrest, Identify the prevalence or incidence – how widespread is the threat Identify the transmission routes Communicate with State and Federal authorities regarding the Threat Identify the most effective and least restrictive NPI Weigh financial and social costs and benefits of NPI Refer to Decision Matrices A, B, & C to select multiple NPI		
Step 2	Notify Response Partners	Engage as many Partners as possible to ensure NPI coordination	
	BOH CEO	EMD/REPC LE/Fire	Hospitals DPH/MEMA/HMCC
Step 3	Review Plans, Policies, Procedures	Determine Legal Authorities	
	Triggers and Early Actions	Legal Authorities	
Step 4	Determine Command and Control	Assign Roles and Responsibilities	
	Incident Command or Unified Command or MACC or Incident Coordinating Group PIO - JIS, Safety, Operations + Security, Planning + Info Sharing, Logistics + Resources, Finance + Costs and Grants		
Step 5	Begin Public Information	Coordinate messaging using a Joint Information System	
	Begin Public Information early to educate Responders and the Public Be as accurate as possible, based on the available data Be compassionate Ensure messages are consistent, coordinated, and timely Give people something positive to do; immediate actions steps to take to focus them on the response Establish your agency as a trusted source of useful, accurate information		
Step 6	Identify Resources	What is available and what is needed	
	Ensure enough resources for the NPI strategies selected Appoint someone in Logistics to manage/obtain resources		
Step 7	Consider Health Equity	Ensure equal opportunity of access	
	Health Equity/Access and Functional Needs Support Services (FNSS) Ensure that all sectors and groups are considered, have access, and are treated equitably Consider other cultures and other languages as needed		
Step 8	Implement NPI Strategies	Select the least restrictive effective NPI	
	Education Good health practices; Hygiene Personal Protective Precautions Personal Protective Equipment (PPE) Social Distancing; Small Groups Enhanced Surveillance/Monitoring Enhanced Sanitation Environmental Health	Engineering Controls Infrastructure Hardening Investigation and Tracing Isolation and Quarantine Work Policy Changes Seizures and Embargos Travel Restrictions and Closures Decontamination	
Step 9	Monitor Data and Response	Adjust NPI strategies to make them more effective	
	Monitor NPI effectiveness and costs. Adjust NPI as needed. Avoid frequent changes which can make messaging confusing “One-size fits all” is probably not a sustainable NPI strategy. Consider regional differences and clear ways to measure these differences so areas can monitor their own success.		
Step 10	Plan for Demobilization & Recovery	‘New Normal’ planning should be part of Demobilization Plans	
	Begin planning for Recovery when the response is about midway Demobilization Plans will change as the response progresses Don’t forget to thank Responders, Partners and Volunteers		

Hazards/Threats and Transmission Routes

Hazard →								
Transmission Routes ↓	1. Biological	2. Chemical	3. Radiological	4. Injuries/ Riots	5. Explosion	6. Natural Disasters	7. Infrastructure Collapse	8. Cyber
Airborne/ HVAC	often	often	often			possible		
Droplets	often	some- times						
Body Fluids	often							
Water	often	often	often			often	often	
Food	often	often	often			often	often	
Skin/Touch	often	some- times	often	often				
Fomites	often							
Waste	often	often	often			possible		
Insect Vec- tors	often					possible		
Animal Vec- tors	often					possible		
Plant Vectors	often							
Projectiles/ Spills	possible	often	often	often	often	often	often	
Electronic					some- times		often	often

Often: transmission route occurs in the majority of instances. **Sometimes** means it occurs, but is not expected

*In this table, transmission routes are methods of transmission of the hazards and threats. For example, insect vectors are often a transmission route of biological hazards, and cyber hazards are often moved through an electronic transmission route.

**Note that biologicals may be present as a result of many other hazards, including riots and explosions.

Decision Matrix (from least restrictive to most restrictive)

Non-Pharmaceutical Intervention Strategy	Hazard #	Town Resource Demands	Economic Costs	Social Costs	Key Challenges	Key Partners
A.Education/Public Info Signage	All	Medium	Low	Low	Social change is hard. Lack of regional media, regional JIS, and regional or Area Command	DPH/CDC, BOH, hospitals, HMCC, EMD/MEMA, schools, social services; community groups/faith-based organizations
B.Good Health Practices: food, exercise, sleep, clean water	1-7	Low	Low	Low	Healthy Habits are not seen as fun or easy.	Providers, BOH, Public
C.Personal Protection Behaviors: handwashing, showers, PPE, distancing	1-7	Low	Low	Medium	Changing individual behaviors is hard; need CERC	Public, Providers, BOH, trusted community leaders, elected officials
D.Personal Protective Equipment (PPE); face masks/coverings; gloves, goggles, gowns, suits, tape	1-7	Medium	High	Medium	Shortages, public training and support	BOH, HMCC/DPH, MEMA/EMD, hospitals
E.Social Distancing, Bubbles, Pods, small groups	1	Low	Low	Medium	Hard to maintain/monitor	Business, Schools, Public
F.Surveillance and Rapid Reporting	1-5	Low	Medium	Low	Trained Staff, Provider inconsistent reporting	DPH, BOH, Hospitals, EMS, Labs
G.Sanitation: waste management, cleaning, disinfection	1-7	Medium	Medium	Medium	Trained Staff, PPE, equipment, surge	Business, Churches, Facilities, DPW, BOH, LTC, Institutions, Schools
H.Environmental Health: safe food, water, air, housing	1-7	High	Medium	Medium	Trained staff; equipment; contact methods	BOH, DPH, DEP, Hospitals, EMD, DPW
I.Engineering controls: HEPA filters, no touch, ultraviolet light, fresh air, vents, barriers	All	Medium	High	Low	Lead time needed. Funding needed. Experienced installers.	Businesses, Facilities, Towns, Institutions, Homes, Schools, LTC, Churches
J.Hardening Home, Business, Government Infrastructure	All	Low to Very High	Very High	Medium	Need for good messaging, doable strategies, resources	Public, Businesses, Services Facilities, Institutions
K.Investigation/Contact Tracing	1	High	Medium	Medium	Surge, staff, burnout	DPH, BOH, PHN, Hospitals
L.Isolate sick and quarantine exposed with monitoring & enforcement. (BOH/DPH to provide details)	1	Very High	Very High	Very High	High Support Needs: food/medicine deliveries, entertainment, childcare, social/work disruptions	EMD, MEMA, CEO, BOH, DPH, Hospitals, Providers, Police, Social Services, Schools, LTC,
M.Work Policy Changes: Cohorts, flex time, remote work, sick leave, mandatory vacations, PPE hazard pay, reciprocity	All	Low to Medium	Medium	High	Shortages, social/ business disruption, childcare, enforcement, supporting infrastructure needed.	CEO, BOH, DPH, Hospitals, Police, Public, Schools, Businesses, Facilities, Agencies, Chambers of Commerce
N.Seizures/Embargos/ Condemnations	All	Medium to High	Very High	High	Shortages, business disruptions, housing loss	Business, BOH, Police, Public, Institutions
O.Travel restrictions, closures, bans, shelter-in-place orders	1-7	High	Medium to Extreme	Very High	Shortages, social disruptions, enforcement,	CEO, EMD, DPW, BOH, Police, Fire, Institutions
P.Decontamination	1-7	High	Medium	High	Trained Staff, PPE, surge	Fire, Hospitals, BOH, EMD

Low resources, costs, social impacts, disruptions with only minor disruptions in one or two areas of normal life
Medium noticeable resource demands, costs, social impacts, and disruptions to 2 or more areas of normal life
High/Very High impacts results in significant disruptions, costs, and impacts in multiple/most areas of life.
Extreme results in major disruptions, costs, and impacts in all areas of life.

NPI Strategy Details

Personal Protection Precautions

PPE: masks, goggles/shields, gloves, and other protective equipment
Personal Hygiene: wash hands, cover coughs, shower, clean clothes, don't touch face
Social Distancing: remote meetings/chats, outside gatherings, restrict access, non-contact greetings
Personal Health Practices: good food, water, exercise, sleep, vaccinations, mental health
Disinfection: contact time, how often, safer products
Small Groups/Bubbles: like-minded people who agree to follow the same precautions
Vulnerable: protect those most at risk: elderly, health conditions, young, etc.
Stay Informed: trusted sources of information; avoid rumors and panic
Stay Home/Stay Away: follow travel advisories

Engineering Controls and Home/Business Hardening

Barriers/Separation Anti-microbial coatings such as silver, copper, etc. No touch doors, faucets, hand sanitizer, etc.	No air dryers; Install Toilet Lids Portable air purifiers with HEPA filters. Limits on internet access; computer protections
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HVAC: open/seal windows, use HEPA filters, fresh air, clean ducts, ultraviolet, silver, heat, humidity
 Seal gaps/leaks/penetrations in house to prevent air, water, fire, insects, animals
 Secure home/business from hazards (floods, poor air quality, fire, diseases, mosquitos, ticks, strangers)

Improving security for entrances, windows, garages, and other access points to a building.
 Ensuring uninterrupted power, heat, AC, lights, internet, water, and other essential utilities and services.
 Having backup plans and personnel to ensure continuity of operations.
 Improve building material to protect against wind, fire and other hazards.

Administrative Controls

Training and Equipment Enhanced Sick Leave Policies Mandatory vacations; shortened work week; hiatus, layoffs Personnel Substitutions for those most at risk Small Groups/Bubbles, Small shifts/Cohorts Bagged lunches; covered drinks Telecommute; limited work travel	Reciprocity (hazard pay, comp time, extra vacation, more training, more support) Define essential workers to include sanitation staff, food employees, and other frontline workers. Disinfection, PPE, sanitizer and handwashing stations, paper towels
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Risk Communications/Public Information - must answer these questions

Am I at risk? – Hazard and Incident Details
 How can I stay safe? – Action Steps and NPI Details
 How can I help? – Ways to support the Response
 Where can I get more information? – Trusted sources, updated frequently
 What are the rules? - Clear, consistent, explained Orders and Restrictions.

Education/Situational Awareness Messaging

Risks and hazards; who is at risk; what should you do Protect those most at risk (elderly, health conditions, young) Stay informed (trusted sources of information) Evacuate/Shelter in Place Avoid certain bodies of water, animals, plants, locations Shower/don't shower Eat/don't eat; Drink/don't drink	Handwashing/Sanitizer Stations (all the time) Masks for everyone all the time Cough etiquette all the time Saying home when sick all the time Social Distancing/Separations Quarantine inbound and exposed Isolate ill from family as well as public
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Education Methods

Social media (Webpage, Instagram, Twitter, Facebook) Movie /YouTube Shorts Internal business communication with employees Employee handbooks/orientation trainings Directories: important contact information Forums/Meetings Cable TV Local radio	Press/Media Releases Public Service Announcements Famous or respected local leaders Signs Blogs, list serves Outgoing 911 Faith-based groups Social Service and Non-Government Organizations
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Definitions:

Administrative Controls include changes in work rules, policies, training, sick leave, vacations, comp time, etc.

Bubbles: A group that agrees to follow the same protocols to reduce risks of exposure, infection, or injury.

Cohorts: Relatively small groups that stay/work together to reduce widespread exposure, infection, or injury.

Decontamination: remove or de-activate hazards from clothing, body, objects, surfaces. Often involves quickly removing clothing and other coverings and washing in semi-public settings.

Elimination is used to eradicate the hazard

Emergency public information and warning is the ability to develop, coordinate, and disseminate information, alerts, warnings, and notifications to the public and incident management personnel.

Engineering Controls include technology and changes in infrastructure, buildings, layouts to reduce hazards.

FNSS – Functional Needs Support Services for individuals with access and function needs who may require additional assistance in emergencies. Includes those with age, medical conditions, disabilities, low English skills, cultural barriers, lack of transport, lack of resources and personal support services that make them more at risk.

Hardening infrastructure, homes, facilities includes sealing penetrations, upgrading HVAC, increasing security systems, diverting water and mud slides, replacing flammable materials, working detectors, etc.

Health Equity includes considerations for bias and systems that disadvantage individuals or groups.

Information sharing is the ability to conduct multijurisdictional and multidisciplinary exchange of health-related information and situational awareness data among federal, state, local, tribal, and territorial levels of government and the private sector. This capability includes the routine sharing of information as well as issuing of public health alerts to all levels of government and the private sector in preparation for and in response to events or incidents of public health significance.

Isolation of the sick times can vary greatly from a few days after onset of symptoms to a few weeks, depending on the disease and the levels of infection.

Nonpharmaceutical Interventions are non-medical actions that people, and communities can take to help slow the spread of illness or injury or reduce the adverse impacts of public health emergencies such as isolation and quarantine, social distancing, travel restrictions, decontamination, hygiene, personal protective behaviors.

Personal Protection Behaviors are daily precautions taken to prevent harm such as washing your hands often.

Quarantine of the ill is traditionally 14 days, but the time it takes infections to emerge vary greatly depending upon the disease.

Mitigation is used to reduce the incidence of hazards or its effects. It does not eliminate the hazard.

Social Costs include personal disruptions, eroded social norms, loss of confidence and well-being, increased drug and family abuse.

Suppression is used to lower or reduce the amount of a hazard

Surveillance and epidemiological investigation for public health is the ability to create, maintain, support, and strengthen routine surveillance and detection systems and epidemiological investigation processes. It also includes the ability to expand these systems and processes in response to incidents of public health significance.

Reciprocity include steps taken to recognize extra ordinary efforts, stress, and risks associated with an event by providing extra training, equipment, pay, bonuses, comp time, vacation time, public recognition, awards,