Access the recording here:
https://attendee.gotowebinar.com/recording/4888934908144956932

TRACIE
HEALTHCARE EMERGENCY PREPAREDNESS
INFORMATION GATEWAY

Determining Hospital Supply Needs and Likely Usage during an Incident

ASPR
Administration for Strategic Preparedness and Response

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TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS INFORMATION GATEWAY

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ASPR
ADMINISTRATION FOR STRATEGIC PREPAREDNESS AND RESPONSE

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ASPR Key Priorities

1 **Prepare** for future public health emergencies and disasters

2 Manage the federal **response** to and recovery from public health emergencies and other disasters

3 Improve and leverage **partnerships** with health care and public health stakeholders

4 Ensure **workforce readiness** through development of innovative workplace practices

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ASPR's Technical Resources, Assistance Center, and Information Exchange

ASPR TRACIE was developed as a **healthcare** emergency preparedness information gateway to address the need for:

- Enhanced and rapid technical assistance (TA)
- A comprehensive, one-stop, national knowledge center for healthcare system preparedness
- Multiple ways to efficiently share and receive information between various entities, including peer-to-peer
- A way to leverage and better integrate support (force multiplier)
- Ways to prepare deployed and field staff via resources developed with our cadre of subject matter experts

ASPR TRACIE: Three Domains

TECHNICAL RESOURCES

- Self-service collection of audience-tailored materials
- Subject-specific, SME-reviewed “Topic Collections”
- Unpublished and SME peer-reviewed materials highlighting real-life tools and experiences

asprtracie.hhs.gov

ASSISTANCE CENTER

- Personalized support and responses to requests for information and technical assistance
- Accessible by toll-free number (1844-5-TRACIE), email (askasprtracie@hhs.gov), or web form (ASPRtracie.hhs.gov)

1-844-5-TRACIE

INFORMATION EXCHANGE

- Area for password-protected discussion among vetted users in near real-time
- Ability to support chats and the peer-to-peer exchange of user-developed templates, plans, and other materials

askasprtracie@hhs.gov

Topic Collections

Active Shooter and Explosives*

Blood and Blood Products

Burns*

Climate Change and Healthcare System Considerations

Communications

- Communication Systems
- Information Sharing
- Risk Communications/Emergency Public Information and Warning*
- Social Media in Emergency Response

Crisis Standards of Care*

Cybersecurity

Decontamination

- Hospital Patient Decontamination
- Pre-Hospital Patient Decontamination

Disasters and Healthcare Disparity

Electronic Health Records

Emergency Management

- Emergency Operations Plans/ Emergency Management Program*
- Exercise Program*
- Hazard Vulnerability/Risk Assessment*
- Healthcare-Related Disaster Legal/ Regulatory/ Federal Policy*
- Incident Management*
- Training and Workforce Development*

Ethics*

Family Reunification and Support

Fatality Management

Healthcare Coalitions

- Coalition Administrative Issues
- Coalition Models and Functions
- Coalition Response Operations (including Mutual Aid)

Healthcare Facility Evacuation / Sheltering

Hospital Surge Capacity and Immediate Bed Availability*

Location-Specific Collections

- Alternate Care Sites (including shelter medical care)*
- Ambulatory Care and Federally Qualified Health Centers (FQHC)*
- Dialysis Centers*
- Homecare and Hospice*
- Long-term Care Facilities*
- Pharmacy*
- Rural Disaster Health
- Virtual Medical Care*

Mass Distribution and Dispensing of Medical Countermeasures

Mass Gatherings/Special Events

Mental/Behavioral Health (non-responders)*

Patient Movement and Tracking

Pediatric/Children*

Populations with Access and Functional Needs*

Pre-Hospital (e.g., EMS)

Pre-Hospital Mass Casualty Triage and Trauma Care

Recovery and COOP

- Continuity of Operations (COOP)/ Business Continuity Planning *
- Recovery Planning *
- Responder Safety and Health*

Specific Hazards

- Bioterrorism and High Consequence Biological Threats
- Chemical Hazards
- Coronaviruses (e.g., SARS, MERS and COVID-19)
- Ebola/VHF
- Influenza Epidemic/ Pandemic
- Natural Disasters
- Radiological and Nuclear*
- The LGBTQI+ Community and Disaster Preparedness and Response (New)
- Utility Failures
- Veterinary Issues
- Volunteer Management
- Workplace Violence*
- Zika

ASPR Administration for Strategic Preparedness and Response

TRACIE Healthcare Emergency Preparedness Information Gateway

Select ASPR TRACIE Resources

- Supply Chain Related Resources and Pages
  - Controlled Substances & Emergency Response: Frequently Asked Questions
  - Drug Shortages and Scarce Resources
  - Medical Countermeasure Commercialization
- Crisis Standards of Care
  - Crisis Standards of Care Briefs
  - Crisis Standards of Care during COVID-19: Summary of State Actions
- ASPR TRACIE Years in Review
  - 2020, 2021, and 2022

Partnering with the Healthcare Supply Chain During Disasters

- Developed in collaboration with HIDA, Healthcare Ready, and numerous SMEs.
- Provides emergency planning and response considerations for manufacturers, distributors, providers, patients, and healthcare coalitions.
- Captures key changes during emergencies compared to steady-state supply chain operations.

Partnering with the Healthcare Supply Chain During Disasters (continued)

- Appendices include:
  - Supply Chain Integrity Self-Assessment – A Resource for Healthcare Coalitions
  - Scenarios to Consider for Facility and Coalition Supply Planning
  - Key Federal Programs and Agencies

https://files.asprtracie.hhs.gov/documents/aspr-tracie-partnering-with-the-healthcare-supply-chain-during-disasters.pdf

DASH Background & Purpose

- Created in response to technical assistance requests.
- Intended to address a gap in quantifying supplies needed by hospitals for their initial response to a disaster.
- Partially built on previously developed ASPR TRACIE tools for pharmacy and PPE.
- Collaborative effort of ASPR TRACIE, Healthcare Ready, the Region VII Disaster Health Response Ecosystem, and HIDA.

What is DASH?

- Online, interactive tool built on the Tableau platform.
- Designed to help mitigate hospital supply shortages and requests for emergency assistance by pre-identifying likely needed products and their quantities.
- Recommendations are based on user inputs about the hospital and the community it serves.
- Preparedness tool – not intended to be used during response to an incident.

https://asprtracie.hhs.gov/dash-tool

Four Modules

Hospital Pharmacy Module

Estimates supplies of medications a hospital should have in its pharmacy to meet seriously injured patient needs for 48 hours following an MCI.

USE THE MODULE

Personal Protective Equipment Module

Estimates minimum personal protective equipment (PPE) needed by hospital personnel managing patients suspected or known to be infected with a special pathogen.

USE THE MODULE

Burn Supply Module

Estimates supplies needed to care for critical burn patients with an average 40% burn surface area for the first 48 hours after a burn incident.

USE THE MODULE

Trauma Supply Module

Estimates supplies needed to care for seriously injured trauma patients for the first 48 hours after an MCI.

USE THE MODULE

TRACIE

HEALTHCARE EMERGENCY PREPAREDNESS
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Hennepin Healthcare & ASPR TRACIE

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Administration for Strategic Preparedness and Response

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DASH Tool Demo

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HEALTHCARE EMERGENCY PREPAREDNESS INFORMATION GATEWAY

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Nebraska Medicine

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Personal Experience with Disaster Events

- Omaha Metro Healthcare Coalition (OMHCC) Pharmacy Subgroup Member / Co-Chair
- Clinical Background: Emergency Medicine Pharmacist & Intermittent Pharmacist with ASPR HHS DMAT MW-1
- Leadership Background: Clinical Pharmacy Manager

Omaha Police Department. Website: Omaha Police Department | Facebook: Accessed 01/2023.

Cybersecurity Event

New York Times. Website: Why Is There Flooding in Nebraska, South Dakota, Iowa and Wisconsin? - The New York Times (nytimes.com): Accessed 01/2023.

Photo credit: Katie Reisbig.

DASH Tool: Pharmacy Module

Hospital Pharmacy Module (HPM)

The DASH Hospital Pharmacy Module (HPM) is intended to provide estimates of pharmaceuticals and intravenous fluids that may be required at a facility for the first 48 hours after a mass casualty incident occurs. The HPM should be completed to complement both the Burn and Trauma Modules. Based on hospital characteristics, the module will offer baseline inventories for categories (e.g., analgesia, antibiotic). The user will input inventory information for common drug formulations in stock within these categories and see immediately whether the hospital has adequate or inadequate stocks of medications in that category. Dosing is based on adult (i.e., higher) requirements, though pediatric formulations are included where available.

The DASH HPM is not proscriptive nor definitive. It is intended as a starting point for facility planners to estimate the minimum quantities that may be needed based upon the role the hospital has in the community. The module is meant to be considered in conjunction with other planning tools, resources, information, and facility and community-wide preparedness efforts. It is not intended as a clinical tool and should be used for pre-incident planning and NOT during an incident.

For detailed information on the purpose of the DASH HPM Module, related planning considerations, and additional resources, click on the **"HPM Methodology (PDF)"** button. For detailed instructions, click on the **"HPM Instructions (PDF)"** button. Most users will find it helpful to have the HPM Instructions open in a separate browser window to follow along as they navigate through the module.

HPM Instructions (PDF) HPM Methodology (PDF)

Hospital Evaluated with the DASH Tool: Characteristics

- Academic Medical Center
- 809 licensed beds
  - Nebraska Medical Center: 718
  - Bellevue Medical Center: 91 (near Offutt Airforce Base)
- 24/7 Level 1 Regional Trauma Center for adults and children
  - Burn patients are stabilized & transferred.
- 91,000 ER visits annually
  - NMC: 48 beds
  - BMC: 21 beds

Consider the 5 Ws: Pharmacy Module

Who is best positioned to input the information?

- Assigned to an EM Nurse Supervisor, EM Physician Resident, and EM **Pharmacy Manager** for review

What level of detail is desired?

- Medication classes vs. individual medications

When should the DASH tool be completed?

- Pre-disaster
- Readiness assessment for disaster management

Where is the input data focused – full enterprise or site by site?

- Broad (enterprise) if ability to move medications within facilities quickly

Why should an organization/hospital consider reviewing this tool?

- Aids hospital in evaluating current disaster readiness, and identifies areas of opportunity

Hospital Characteristics

1. Academic Hospital

Hospital Trauma Level

1

Emergency Department Beds

48

Is your hospital the primary regional receiving center for burn or trauma patients?

Yes

Are natural disasters likely to isolate the hospital for days or longer?

No

Based on your inputs, the TSM is preparing your hospital for **100** seriously injured patients.

2. Community Hospital

Hospital Trauma Level

5 / Not Designated

Emergency Department Beds

21

Is your hospital the primary regional receiving center for burn or trauma patients?

No

Are natural disasters likely to isolate the hospital for days or longer?

No

Based on your inputs, the TSM is preparing your hospital for **20** seriously injured patients.

Hospital Characteristics

1. Trauma Supply Projections

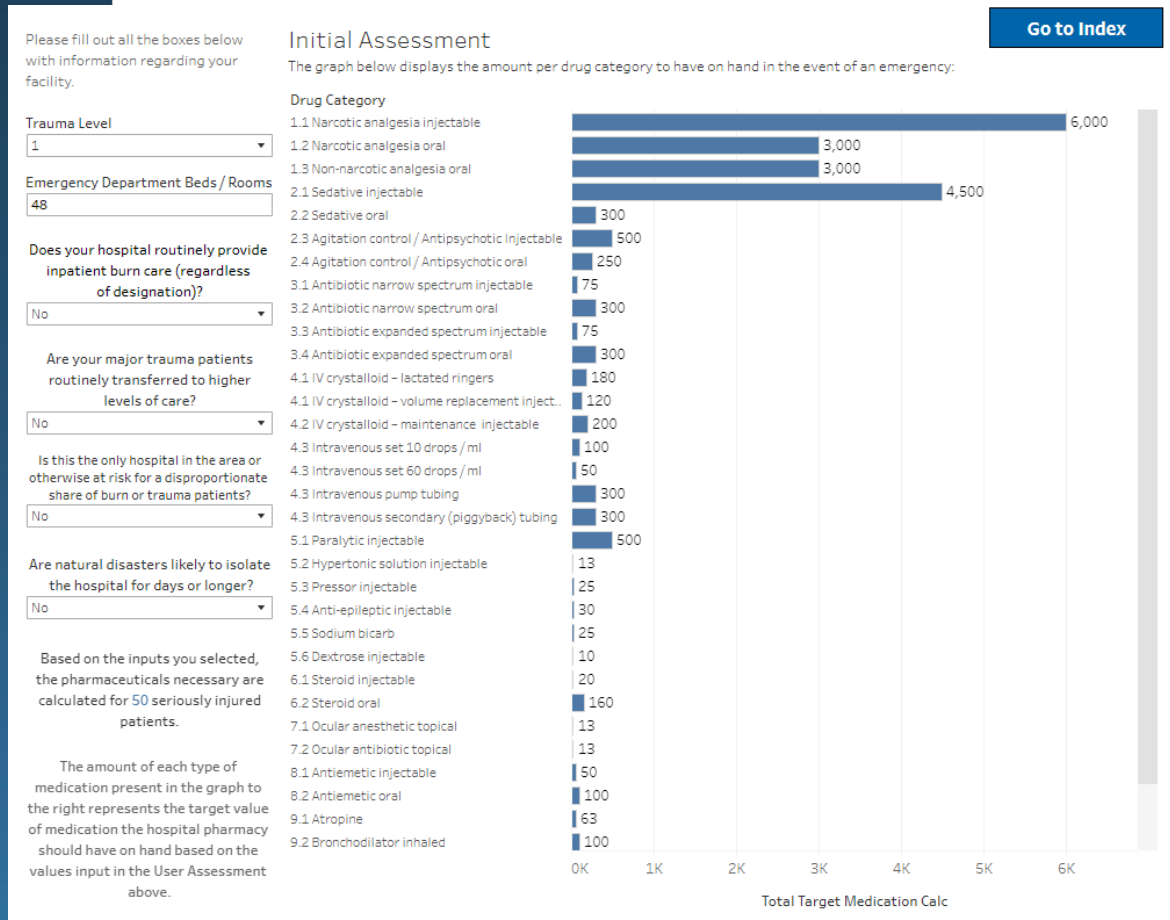
Airway / Respiratory Supplies

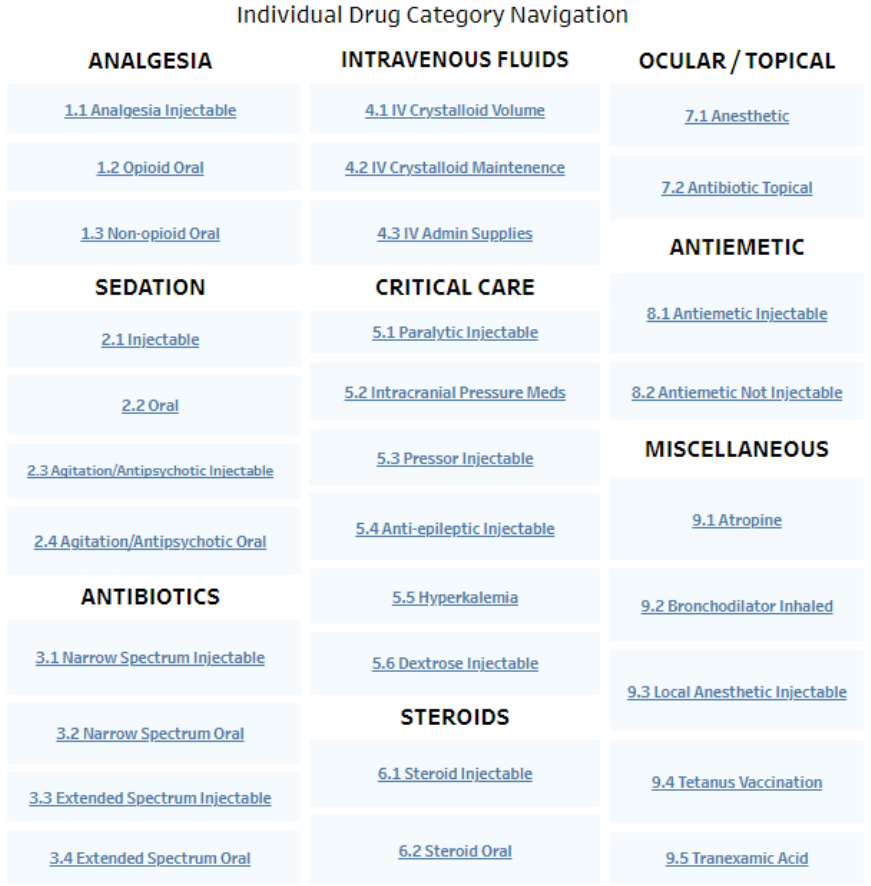
Item	Number/Patient	Total Seriously Injured Patients	Quantity of Item Needed
Bag Valve Mask adult	0.5	100	50
Bag Valve Mask child	0.2	100	20
Bag Valve Mask infant	0.05	100	5
Connecting Tubing O2	1	100	100
Connecting Tubing Suction	1	100	100
ET Securing device	0.5	100	50
ET securing device - pediatric	0.1	100	10
ET Tubes 3	0.05	100	5
ET Tubes 4	0.05	100	5
ET Tubes 5	0.1	100	10
ET Tubes 6	0.1	100	10
ET Tubes 7	0.2	100	20
ET Tubes 7.5 / 8	0.4	100	40
Gum elastic bougie	0.5	100	50
Gum elastic bougie - pediatric	0.1	100	10
Heat moisture exchanger with HEPA filter	0.5	100	50
Laryngeal Mask / iGel size 1	0.05	100	5
Laryngeal Mask / iGel size 2	0.05	100	5
Laryngeal Mask / iGel size 3	0.1	100	10
Laryngeal Mask / iGel size 4	0.1	100	10
Laryngeal Mask / iGel size 5	0.1	100	10
Laryngoscope blade Mac 2	0.1	100	10
Laryngoscope blade Mac 3	0.25	100	25
Laryngoscope blade Mac 4	0.5	100	50
Laryngoscope blade Miller 1	0.05	100	5
Laryngoscope blade Miller 2	0.1	100	10
Laryngoscope blade Miller 3	0.1	100	10
Laryngoscope blade Miller 4	0.2	100	20
Laryngoscope handle standard	0.25	100	25
Magill Forceps adult	0.05	100	5
Magill Forceps child	0.05	100	5
Monitor CO2 disposable probe / colorimetric	0.5	100	50
Nasopharyngeal airway 6	0.1	100	10
Nasopharyngeal airway 8	0.1	100	10
Neb sets - T type	0.25	100	25
Nebulizer Mask & Tubing adult	0.1	100	10
Nebulizer Mask & Tubing child	0.1	100	10
Needle chest decompression - Cook, SPEAR, other	0.3	100	30
OPA size 0	0.05	100	5
OPA size 1	0.05	100	5
OPA size 2	0.05	100	5
OPA size 3	0.1	100	10
OPA size 4	0.1	100	10
OPA size 6	0.1	100	10
Oxygen Mask Non-Rebreather adult	0.5	100	50
Oxygen Mask Non-Rebreather peds	0.2	100	20
Oxygen Mask Simple	0.2	100	20
Oxygen Nasal Cannula	0.75	100	75
Stylet	0.2	100	20
Stylet - small	0.1	100	10
Suction Canister	0.5	100	50
Suction Catheters 8F	0.2	100	20
Suction Catheters soft	0.2	100	20
Suction Catheters yankaur	0.4	100	40
Suction handheld manual	0.05	100	5
Twill tape 1/2" wide roll	0.05	100	5
Ventilator portable	0.1	100	10
Ventilator portable - circuts	Based on # of Ventilators	100	30
Video laryngoscope with multiple blades for adu..	0.05	100	5

DASH provides detailed supply numbers for individual hospital sites.
Suppliers leverage living stockpiles for response readiness.

Hospital Characteristics

1. Initial Assessment





2. Individual Drug Categories provides the deeper analysis of each medication class & is where inventory counts are entered.

Experience

- Time to complete pharmacy module: **8H**
  - Time includes obtaining medication counts.
  - Tool is easy to complete, but assimilating information needed for input to the tool is the challenging part.
  - Medication counts and strategy for input helps streamline the process.
    - Estimated medication counts vs. exact medication counts
  - Sophistication and accuracy of medication inventory management tools may increase or decrease time commitment.

Assumptions

- Inventory numbers utilized were for counts of medications in our pharmacy warehouse or central supply.
  - Inventory located on care units was not included for the purposes of this exercise.

Manual count of medications was not completed.

- Inventory numbers in Electronic Health Record (EHR) or our Automated Dispensing Cabinet system were accurate.

Select Inventory Levels – Academic Medical Center

Hospital Inventory

Please input the number of available pharmaceuticals below:

Lactated Ringers 1000ml
1,563

Sodium Chloride 0.9% 1000ml
9,960

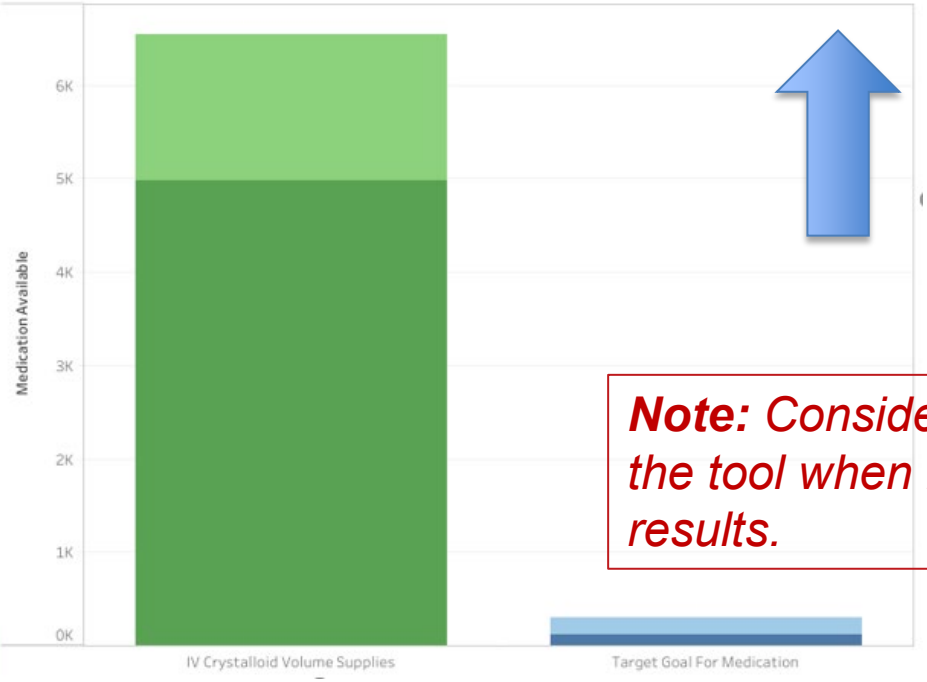
Calculation Assumptions

4.1 IV Crystalloid - Volume Replacement Injectable

Drug	Dose Equivalency Value	IV crytalloid - volume replacement Inventory (liters)
Lactated Ringers 1000ml	1	1,563.0
Sodium Chloride 0.9% 1000ml	1	4,980.0
Grand Total		6,543.0

Grand Total To Meet Requisite Needs: 300 liters

Difference Between Present Inventory and Goal: 6,243.0 liters



Note: *Consider the units within the tool when interpreting results.*

Hospital Inventory

Please input the number of available pharmaceuticals below:

(Pharmaceuticals marked with * are controlled substances)

Fentanyl 100mcg / 2ml ampule*
4,546

Fentanyl 250mcg / 5ml ampule*
1,101

Fentanyl 500mcg / 10ml vial*
50

Fentanyl 2500mcg / 50 ml vial*
153

Injectable Ketorolac 30mg*
2,056

Morphine 10mg/mL vial or syringe 1mL*
230

Hydromorphone 1mg/ml syringe 1ml*
574

Hydromorphone 10 mg/ml 5ml vial*
171

Morphine 2mg/ml syringe 1ml*
2,743

Morphine 4mg/ml syringe 1ml*
1,185

Morphine 15 mg/ml 20 ml vial 20ml*
0

Morphine 50mg/mL 20mL vial*
0

Morphine 50mg/mL 50mL vial*
0

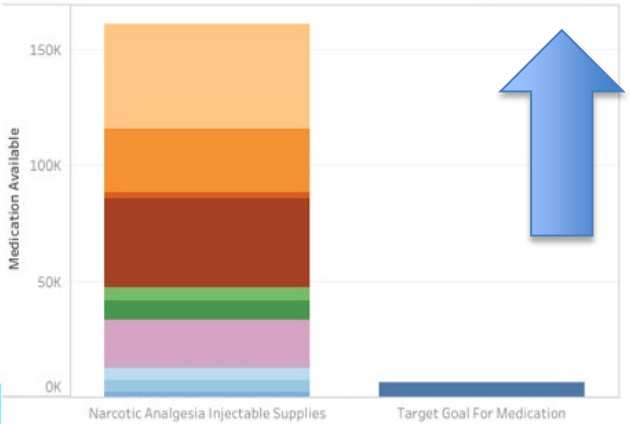
Calculation Assumptions

1.1 Analgesia Injectable

Drug	Dose Equivalency Value	Narcotic Analgesia Injectable Inventory (m..
Fentanyl 100mcg / 2mL ampule	10	45,460
Fentanyl 250mcg / 5mL ampule	25	27,525
Fentanyl 500mcg / 10mL vial	50	2,500
Fentanyl 2500mcg / 50 mL vial	250	38,250
Hydromorphone 1mg/ml syringe 1mL	10	5,740
Hydromorphone 10 mg/mL 5mL vial	50	8,550
Injectable Ketorolac 30mg	10	20,560
Morphine 2mg/mL syringe 1mL	2	5,486
Morphine 4mg/mL syringe 1mL	4	4,740
Morphine 10mg/mL vial or syringe 1mL	10	2,300
Morphine 15 mg/mL 20mL vial	300	0
Morphine 50mg/mL 20mL vial	1000	0
Morphine 50mg/mL 50mL vial	2500	0
Grand Total		161,111

Grand Total To Meet Requisite Needs: 6,000 mg

Difference Between Present Inventory and Goal: 155,111 mg



Outcome Evaluation

- Disaster Lens vs. Standard Operating Procedure
  - Standard Operating Procedure: Single use vial used for single patient.
  - Disaster Operating Procedure: Limited quantities of medication and surge volumes may require using single vial for multiple patients.

    Quantities reported are in doses vs. vials.
  - Example: Hospital does not stock 6000 *vials* of injectable analgesia, but we might have 6000 *doses*.

Learnings

- Enterprise evaluated is well-prepared for Mass Casualty Incident (MCI) per the DASH Pharmacy Module results.
- Medication data can be a challenge for non-pharmacy colleagues to obtain and input into the tool.
- Standard Operating Procedure vs. Disaster Operating Procedure

Feedback is IMPORTANT

Please share your learnings to support ongoing process improvement.

Examples of questions/feedback generated:

- Seeking clarity on input for liquids
- Build calculations to function independent of vial size
- Source of the common package sizes determined
- When should we use packages and assume individual use case vs. combined use case?
- High level of specificity in some spaces
- Grammatical feedback

Recommendations

- Meet with multidisciplinary colleagues to determine best strategy to complete preparedness assessments.
- All healthcare stakeholders should have disaster plans in place to ensure ability to meet critical needs during patient surges.
- Exercise may reveal some reporting or internal process optimization to support input into the tool.
- Provide feedback.
- Share learnings.

What Should Users Do With Their Results?

- Compare recommendations to actual hospital inventory to identify potential supply shortfalls.
- Discuss results with emergency preparedness and supply chain partners to:
  - Enhance awareness of what supplies are available in the community.
  - Identify gaps that may be filled through local/regional caches/stockpiles.
  - Establish triggers for requesting outside resources and the process to do so.
  - Understand product availability, potential substitutions/alternatives, resupply lead times, and other supply chain considerations.
- Adjust based on hospital's hazard vulnerability analysis and knowledge of available healthcare assets.

DASH Tool User Experience Feedback

- Which modules are used most frequently?
- How long does it take to complete a module?
- Are the recommendations in line with what hospitals have in stock?
- Is the level of effort to complete the DASH Tool worth it?
- How is the DASH Tool being used for hospital or regional planning?

Share feedback via QR code!

Additional DASH Resources

- DASH Website
- DASH Introductory Video
- August 15 Introduction to the DASH Tool Webinar Recording
- FAQs
- Demonstration of the DASH Tool

Contact ASPR TRACIE

asprtracie.hhs.gov

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askasprtracie@hhs.gov