

Risk Factors

Running on Empty: Navigating Medication and Supply Shortages in Healthcare

Stephenie Fenton-Wilhelm, JD, CPHRM | Chief Risk Officer
UNC Health

Anne Flitcroft, BSN, RN | Vice President, Risk Management
Physicians Insurance

Legal Disclosure: Presented information is for general purposes

This presentation is for informational and educational purposes only and does not constitute legal, medical, or professional advice. The information provided herein is based on current best practices and general risk management principles in the healthcare setting but may not reflect the specific laws, regulations, or standards applicable to your organization or jurisdiction. All case examples within this presentation are fictional and created for educational purposes only.

Attendees should not rely on this presentation as a substitute for legal counsel or professional guidance regarding specific situations. Healthcare providers, administrators, and organizations are encouraged to consult with their legal counsel, risk management professionals, or regulatory authorities for advice tailored to their individual circumstances.

The presenters and sponsoring organization disclaim any liability for any errors, omissions, or outcomes resulting from the use or reliance on the information presented. Participation in this presentation does not create an attorney-client, consultant-client, or fiduciary relationship.

By attending this presentation, you acknowledge and agree to these terms.

Agenda

Supply Chain Fundamentals

Review of Significant Supply Chain Disruption Events & Causes

Supply Chain Risks

Enterprise Risk Management (ERM) Overview

Risk Mitigation Strategies

- Vulnerability Assessments
- ERM Process for Supply Chain Risk

Physician Documentation in the EHR



Session Objectives



Develop an understanding of Supply Chain fundamentals



Identify common supply chain risks and possible mitigation strategies



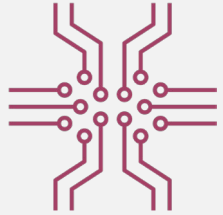
Examine supply chain shortages and trends



Understand documentation best practices

Supply Chain Fundamentals

ALL OF THESE MOVING PARTS MUST WORK TOGETHER TO DELIVER THE PRODUCTS PEOPLE NEED TO WORK AND LIVE



“Supply chain management comprises forecasting and demand planning; sourcing and procurement of supplies and products; supplier management; manufacturing or production; inventory management; warehousing; the logistics of moving supplies and end-products among various facilities, warehouses, locations and the end customer; the reverse logistics of returned or damaged products; monitoring of industry trends to prepare for the future; and more.”



Supply chains involve a diverse array of international participants, and effective planning is crucial for maintaining smooth operations.

Source: ECRI, [The Role of Supply Chain in Healthcare](https://www.ecri.com/press-releases/2017/05/01/the-role-of-supply-chain-in-healthcare/) (used with permission / publicly available at [ECRI.com](https://www.ecri.com/))

Source: Association of Supply Chain Management, [What is Supply Chain Management?](https://www.ascm.org/topics/supply-chain-management/) (used with permission / publicly available at <https://www.ascm.org/topics/supply-chain-management/>)

Significant Supply Chain Disruption Events

Personal Protective Equipment

- 2020 Covid – 19
- China Lockdowns
- Surge in demand

IV Fluids & Sterile Injectables

- 2017 Hurricane Maria
- 2023 Tornado in Rocky Mount, NC (Pfizer plant)
- 2024 Hurricane Helene



Image credit: Tasnim News / "Tornado Destroys North Carolina Pfizer Facility" (July 23, 2023), licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/). Source: [Tasnim News](https://tasnimnews.com)

Significant Supply Chain Disruption Events

Contrast for Diagnostic Imaging

- May 2022
- GE plant closure in Shanghai due to COVID-19
- Surge in demand

Syringes & Needles

- Late 2021- Double the vaccinations were given across the globe
- Manufacturing capacity of 6 billion

Pharmaceutical Drug Shortages

- 2022 – GE plant closure in Shanghai due to COVID-19
- 2023 – FDA shuts down chemotherapy manufacturing plant in India
- Surge in demand



Image credit: Marco Verch / "Blood sample in syringe," licensed under [CC BY 2.0](#). Source: [Wuestenigel Photo Gallery](#).

Medication Shortage Resources

ASHP maintains a drug shortages list and the reason for the shortages

Drug Shortages List

VIEW RELATED LINKS ↓

CURRENT DRUG SHORTAGE BULLETINS

GENERIC NAME REVISION DATE CREATED DATE

Entries: 10 Search:

GENERIC NAME	REVISION DATE	CREATED DATE
0.9% Sodium Chloride Irrigation	Sep 16, 2025	Feb 25, 2022
0.9% Sodium Chloride Small Volume Bags (< 150 mL)	Aug 18, 2025	Oct 23, 2024
5% Dextrose Injection Small Volume Bags	Aug 18, 2025	Feb 04, 2022
50% Dextrose Injection	Sep 03, 2025	Dec 12, 2021
Acamprosate Calcium Tablets	Oct 02, 2025	Sep 30, 2024
Acetaminophen Injection	Oct 16, 2025	Mar 12, 2025
Acetazolamide Injection	Oct 13, 2025	Sep 22, 2025
Adenosine Injection	Oct 13, 2025	Apr 03, 2023
Albuterol sulfate and Ipratropium Bromide Inhalation Solution	Oct 21, 2025	Jan 09, 2023

Sample medication supply tracker

DATE ADDED	LAST UPDATED	STATUS	DESCRIPTION ↑	MANAGEMENT STRATEGIES - UNCMC
01/14/25	10/27/25	Unavailable	dronabinol CAP 2.5 mg	LMA reinstated Megestrol is the preferred alternative therapy for treatment of anorexia secondary to AIDS. Please consult the 2024 NCCN Guidelines and 2020 ASCO Guideline for treatment recommendations for breakthrough nausea and vomiting (CINV).
01/14/25	09/05/25	Unavailable	dronabinol CAP 5 mg	Out of stock at wholesaler and in house. No ETA to provide at this time. LMA reinstated Megestrol is the preferred alternative therapy for treatment of anorexia secondary to AIDS. Please consult the 2024 NCCN Guidelines and 2020 ASCO Guideline for treatment recommendations for breakthrough nausea and vomiting (CINV).
06/04/25	10/27/25	Unavailable	erythromycin lactobionate INJ VIAL 500 MG	Currently stocked out at UNCMC. None available to order at wholesaler. ETA Q1 '26 LMA implemented - restricting to GI Medicine only
10/07/25	10/27/25	Critical	fentanyl VIAL 50 mcg/mL (1 mL vial)	Monitoring only - no internal supply issues
06/11/25	08/01/25	Unavailable	ferric subsulfate SOLN 20-22 g/100 mL MONSELS	Backordered into October 2025. Bring the paste back into the SSC as an alternative.
08/25/25	08/25/25	Caution	fludarabine INJ SOLN 50 mg [NT1]	Monitoring only - no supply concerns at this time ASHP drug shortage report
03/19/24	10/29/25	Caution	HYDRomorphine INJ SYR 1 mg/1 mL (C-J)	Implemented changes to product dispensing based on dose ordered to help conserve current supply <ul style="list-style-type: none"> • 0-0.5mg = dispense 0.5mg product • 0.51-1mg = dispense 1mg product • >1 mg = dispense 2 mg product • If not stocked in Pyxis, will route to print "Load to Pyxis" label in CIP
09/21/21	06/04/25	Monitor	HYDRomorphone PF VIAL 10 mg/1 mL	No internal supply concerns Some availability at wholesaler Pfizer displaying production issues - ETA 3/26
02/28/24	06/04/25	Monitor	Hydromorphone PF VIAL 50 mg/5 mL	No internal supply concerns Multiple manufacturers with varying degrees of availability Some intermittent shipping issues with various suppliers



Supply Chain Risks

Risks in the Supply Chain

SUPPLY CHAIN DISRUPTIONS CAN DIRECTLY IMPACT PATIENT CARE BY CAUSING DELAYS AND NECESSITATING THE USE OF ALTERNATIVE TREATMENTS AND MATERIALS



Increasing globalization



Environmental factors



Socio-Political factors



ESG considerations



Complexity of supply chains



Supply and demand



Status of manufacturers, distributors and others



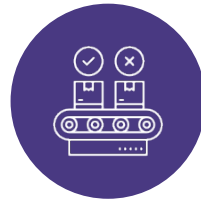
Product and supply training and use

Risks in the Supply Chain

SUPPLY CHAIN DISRUPTIONS CAN ALSO LEAD TO CHANGES IN DIAGNOSTIC PROTOCOLS OR UTILIZING LESS PREFERRED DIAGNOSTIC TOOLS



Supplier Dependency



Quality Control Issues



Cybersecurity Threats



Inventory Management Challenges



Global Market Prices



Tarrifs



Enterprise Risk Management Overview

Identify Supply Chain Risk Through Enterprise Risk Management

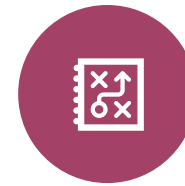
MITIGATING CLINICAL IMPACT BY PROACTIVELY ADDRESSING MEDICAL SUPPLY VULNERABILITIES



Operational



Clinical/Patient
Safety



Strategic



Financial



Human Capital



Legal/Regulatory



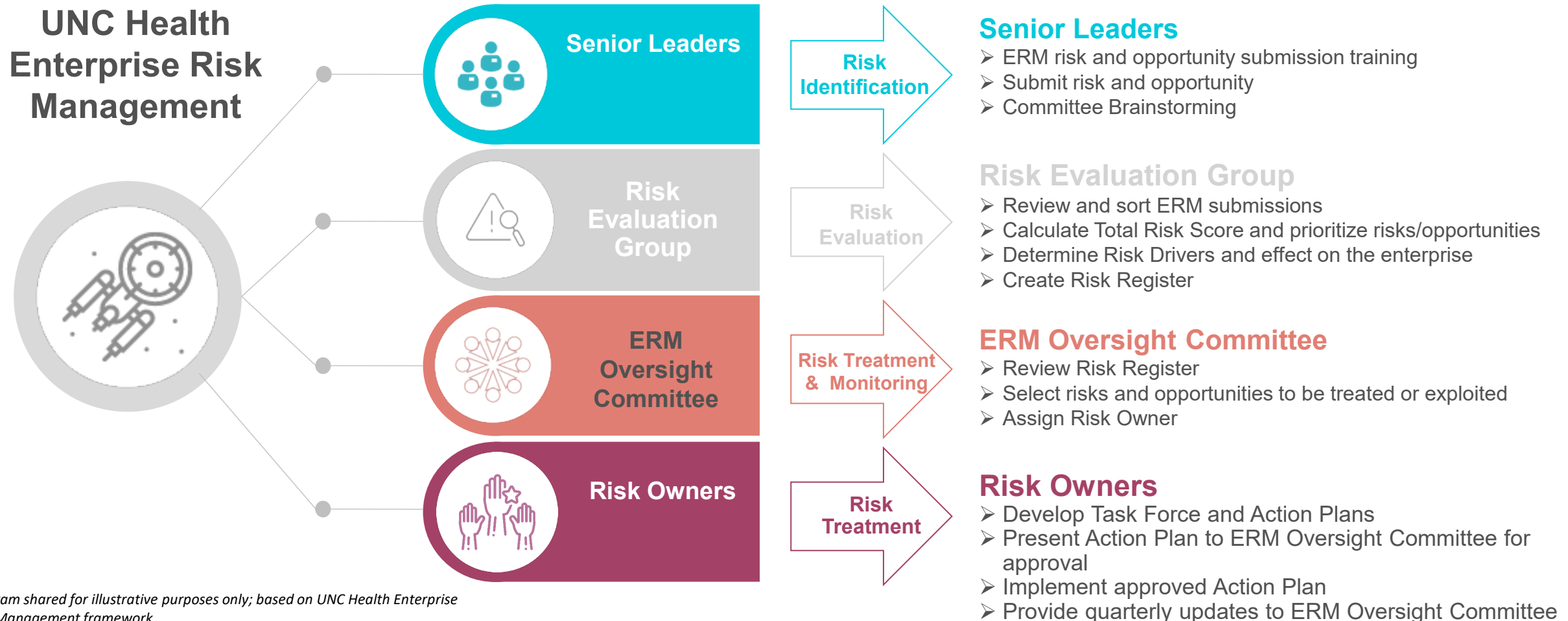
Technology



Hazard

Source: Adapted from the American Society for Health Care Risk Management (ASHRM), "Enterprise Risk Management Playbook," 2020. Used with acknowledgment for educational discussion.

Assignment of roles and responsibilities is key to a successful ERM program





Risk Mitigation Strategies

Risk Mitigation Strategies

PROACTIVE APPROACHES TO ENSURE CONTINUITY OF CARE AMID SUPPLY CHAIN DISRUPTIONS



Profile the supplier base



Supplier Diversification



Assess supply chain vulnerabilities



Evaluate implications



Identify mitigation and contingency actions



Analyze cost and benefits

Source: Adapted from K. Lobdell, "Supply Chain Risk Management Strategies," Thomson Reuters, 2023. Used for educational purposes under fair use.

Risk Mitigation Strategies

PROACTIVE APPROACHES TO ENSURE CONTINUITY OF CARE AMID SUPPLY CHAIN DISRUPTIONS



Alternative Sourcing Plans



Vulnerability Assessments



Clear Communication Channels



Technology and Data



Inventory Buffers



Compliance and Regulatory Monitoring

Source: Adapted from Purdue University, "Supply Chain Risks and Mitigation Strategies," 2023.

Used for educational purposes under fair use.



Supply Chain Risk Mitigations in Action


Vulnerability assessments in supply chain risk provide a systematic approach to identifying potential weaknesses before they impact

Assessing Supply Chain Vulnerability

 What scenarios are most likely to happen?

 What are the possible causes/drivers?

 Are there risks that can be avoided or reduced by planning and early intervention?

 What is the impact of the most likely scenarios?

Source: Kiser, J., & Cantrell, G. (2006). "Six Steps to Managing Risk." Supply Chain Management Review, 10(3), 12–17. Referenced for educational discussion.

Assessing Supply Chain Vulnerabilities using an ERM Approach


BUILDING RESILIENT HEALTHCARE OPERATIONS THROUGH SYSTEMATIC RISK IDENTIFICATION AND MITIGATION

 Identify risk by considering both internal and external factors

 Engage a cross functional team to include diverse perspectives

 Collate risks

 Determine Likelihood & Impact

 Prioritize the risks into a centralized risk register

 Align strategies with overall business objectives

 Communicate & report

Sample Supply Chain Risk Register

Risk ID	Risk Description	Likelihood	Impact	Mitigation Actions	Owner	Status
1	Tariff-driven supplier price increases	Medium	High	Diversify supplier base, clarify contract clauses, schedule regular pricing reviews	Supply Chain Manager	Open
2	Dependence on single sourcing	Medium	High	Develop multi-sourcing strategies, identify and approve alternate suppliers	Procurement Lead	Open
3	Cybersecurity threats impacting supply chain systems	High	High	Implement robust cybersecurity measures, conduct regular system audits and employee training	IT Security Officer	Open
4	Inventory management inefficiencies (stockouts, overstock)	Medium	Medium	Adopt advanced inventory tracking technologies, perform regular inventory reviews	Inventory Manager	Open
5	Supply disruption due to force majeure	Low	High	Establish force majeure clauses, maintain alternate suppliers	Legal Counsel	Open
6	Non-compliance with trade regulations	Low	Medium	Seek legal and regulatory guidance, monitor regulation changes	Compliance Officer	Open
7	Unilateral vendor price increases	Medium	High	Implement regular pricing reviews, multi-sourcing contracts	Contract Manager	Open

Physician Documentation in the EHR

Shortages in supply can result in serious risks for patients, such as harmful effects from replacement products, errors in medication, and postponed treatments. Physicians must document the impact of a shortage on the treatment plan and justify the clinical necessity of any alternatives.

Documentation Guidelines During Supply Shortages

- Follow protocols
- Clearly state the shortage
- Specify the substitute
- Provide clinical justification
- Document communication
- Monitor patient outcomes

All examples shown in the following slides are fictional and created for educational illustration only. They do not depict actual patient cases.

Physician documentation examples during supply shortage

Patient has been admitted for an elective total knee arthroplasty. Due to the patient's metal sensitivity a ceramic implant is indicated however same is not available at this time therefore the elective procedure will be re-scheduled to safely address the patient allergy and ensure compatibility of the implant.

The patient is currently being treated for intractable seizures however due to a nationwide drug shortage IV Ativan is unavailable. Versed is used as an alternative as approved and on hospital formulary with appropriate dosing and monitoring parameters.

Adequate wound closure is performed using non-absorbable suture instead of absorbable suture as same was not available. Excellent wound approximation was obtained without compromise in integrity.

DuoDerm dressing was applied to the site in place of Mepilex which is currently unavailable due to product unavailability. Patient and caregiver are informed of product change and provided education accordingly. Care team advised and will monitor for adequate wound healing.

The patient's elective contrast CT study has been re-scheduled pending availability of Omnipaque. Patient and family have been advised of same. At this time there is no emergent indication for alternative studies however the patient will continue to be monitored and alternative plans arranged if necessary.

Synergy stent was deployed in the mid-RCA as an FDA-approved alternative to the previously utilized Resolute stent (due to product availability).

Baxter IV infusion set (on formulary) ordered in lieu of previously utilized BD set due to product availability. Nursing will monitor for any infusion issues.

Summary

Supply Chain is truly a “chain” and a team sport

Risks are many and should be evaluated

ERM principles can help to manage the supply chain process

Get to know your supply chain colleagues

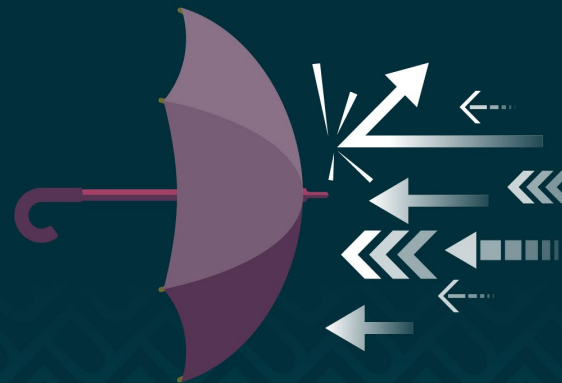
Questions?



Thank you for attending!

Next *Risk Factors* webinar will be on:

Medication Management
January 20, 2026



PHYSICIANS
INSURANCE

Risk Factors