

BACKGROUND

Supply chain management in the healthcare industry refers to the coordinated effort of managing the flow of medical inventories, services, and information from suppliers to healthcare providers, and ultimately to patients.

It plays a crucial role in ensuring that hospitals have the necessary resources to deliver high-quality patient care effectively. Effective supply chain management can result in cost savings, improved patient outcomes, and enhanced overall operational efficiency.

There is an increase in the use of counterfeit supplies in healthcare because the supply is not manufactured within the country and will take time to acquire supplies in the event of an emergency. When supplies are scarce, expensive, or from a single source, the chance of counterfeit increases. Efficient supply chain management could improve overall operations by avoiding malfunctions, contamination, or instability in the supply or equipment that could jeopardize patient safety.

AIM

To examine the performance of the Supply Chain Management Framework and the major players in the supply chain in the National Heart Institute, Malaysia.

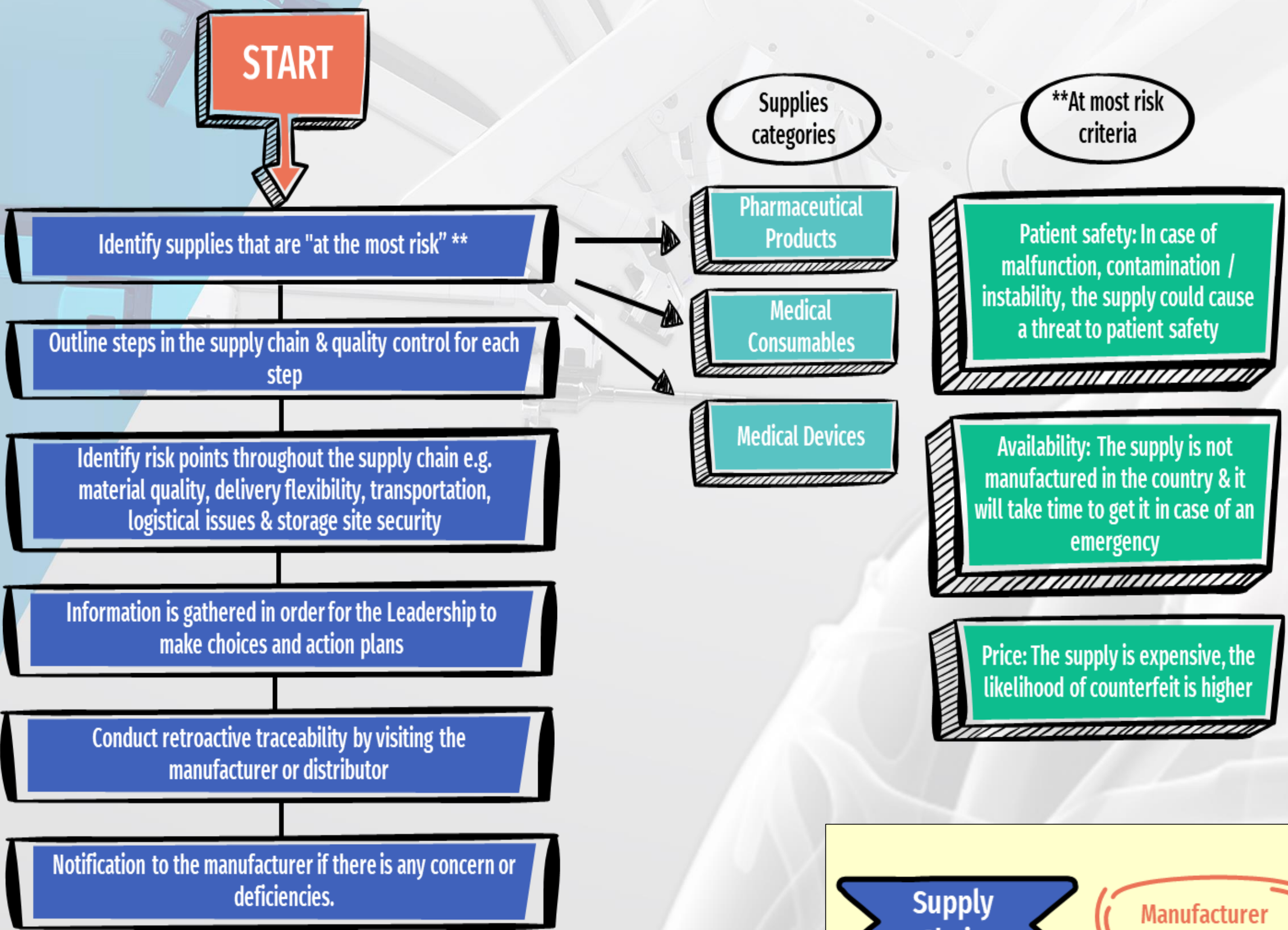
CONCEPT

The fundamentals of the supply chain include manufacturers, transportation, distributors, retailers and customers, with the focus on ensuring high-quality patient care.



METHODOLOGY

The study employed a risk-based approach to ensure supply chain coverage, beginning with the manufacturer and ending with the end user at the hospital receiving pharmaceutical products, medical consumables, and medical devices. The six (6) steps described below were used.

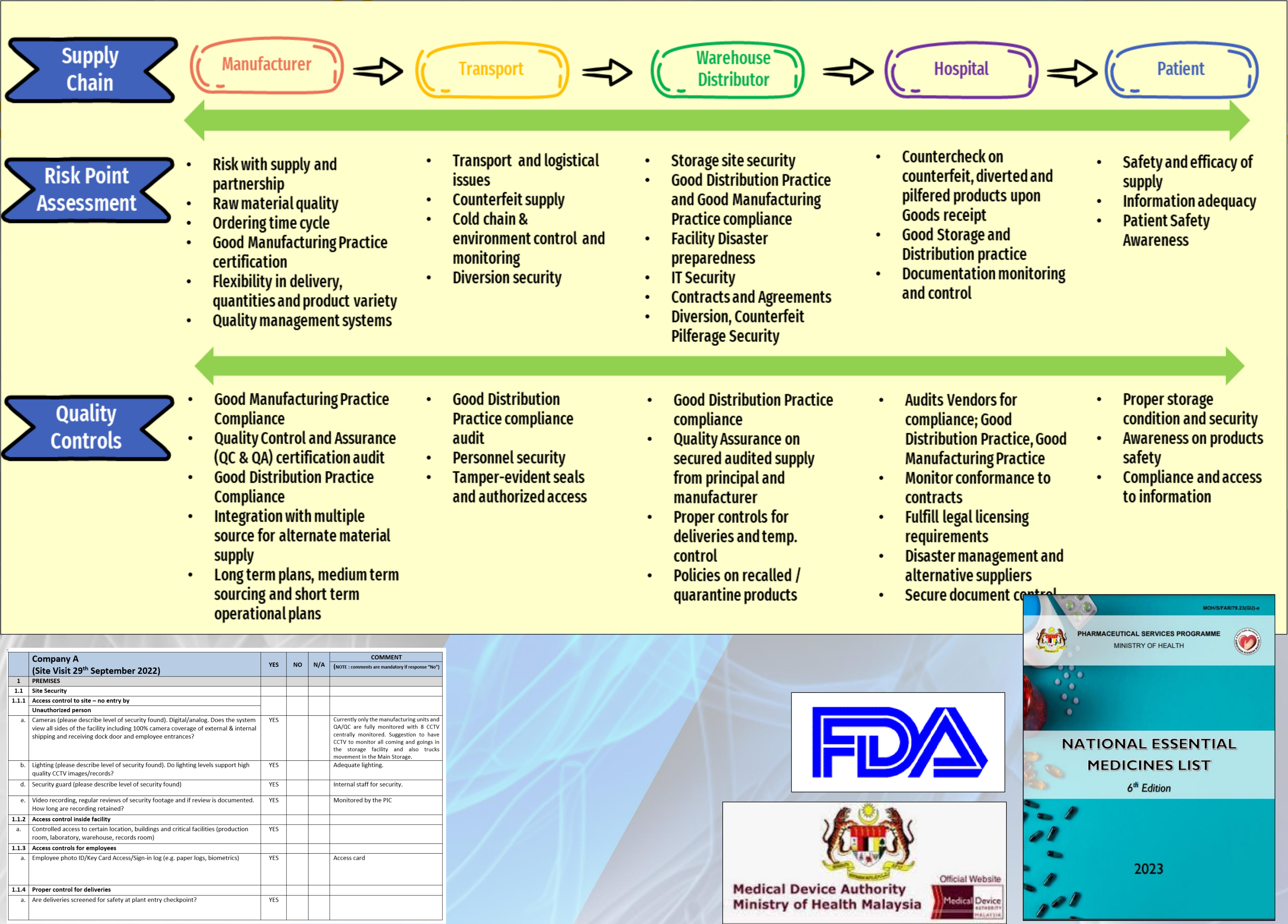
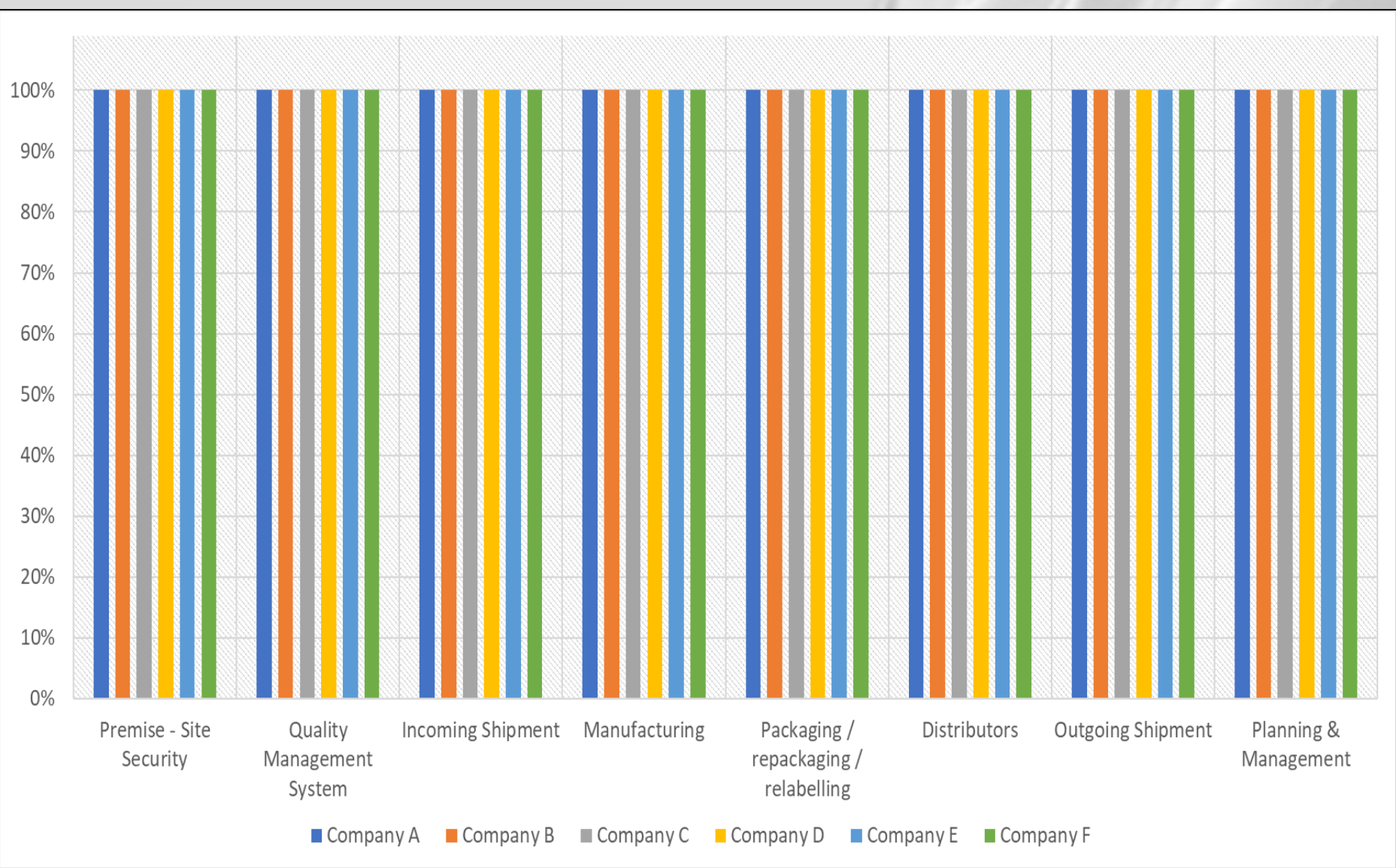


RESULTS

1. A list of supplies deemed "at the most risk"
- Pharmaceutical products:
 - Critical medications especially those with limited production facilities e.g. Pancuronium Br 2mg/ml (2ml) Inj, Calcium Gluconate 0.1g/ml(10ml) 10% Inj.
 - Risk of diversion and counterfeit e.g. midazolam 5mg/ml (1ml) Inj, atorvastatin 40mg Tab (LIPITOR)
 - Instability e.g. enoxaparine 40mg/0.4ml Inj (CLEXANE)
 - Medical consumables:
 - Single supplier e.g. D/C Optitorque 5Fr 100cm TIG, SH Terumo 6Fr 0.025" 10cm
 - Single source e.g. G/W Runthrough Floppy
 - Medical devices: Complex medical devices may face supply chain challenges during emergencies or due to limited manufacturing capabilities e.g. Heart Valve Implantation (e.g. TAVI, tricuspid, Mitraclip), Permanent Pacemaker (PPM) Implantations.

2. Risk Point Assessment & Action Plan
Each component of the supply chain's risk points were evaluated and an quality controls were formulated.

3. Outcome & Analysis
During the site visit to 6 manufacturers and distributors, 8 components were evaluated, including validity of licenses, standard operating procedures, business planning and contingency planning as depicted in the graph below. The outcome demonstrates full compliance (100%) to the internal controls.



CONCLUSIONS

- The risk-based framework is a critical necessity to control the various risk associated with the healthcare supply chain. Following the site visit, the manufacturers and distributors instituted quality controls in their workplaces. All relevant documentation was in place, and the company was in accordance with both local and international requirements, as well as laws and regulations.
- The study's findings encourage the Management, Clinicians, and others to use this model for enabling resources across the supply chain and, as a result, planning for a healthy healthcare supply chain.

REFERENCES

- Habib, M.M.; Chowdhury, F.; Sabah, S.; Debnath, D. A Study on Hospital Supply Chain Management. Am. J. Ind. Bus. Manag. 2022, 12, 806–823.
- Joint Commission International Accreditation Standards for Hospitals, 7th Edition, 2020.