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RISK ASSESSMENT AND MANAGEMENT TO IMPROVE PARENTERAL NUTRITION SAFETY

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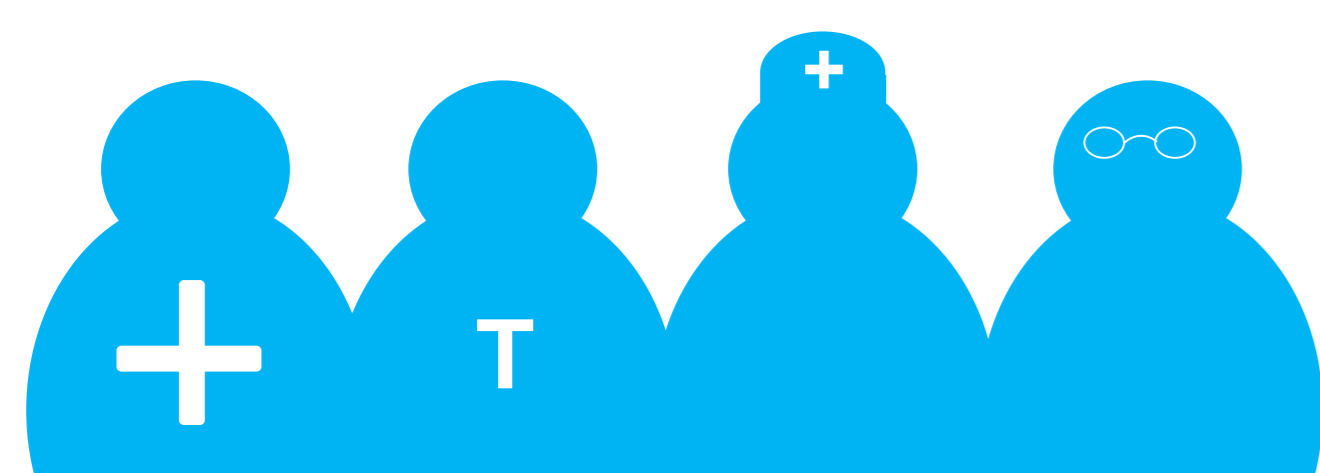
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OBJECTIVE

To describe the utilization of **Failure Modes, Effects and Criticality Analysis (FMECA)** as a tool to evaluate the impact of the improvements implemented in the adult **parenteral nutrition process**.

METHODS

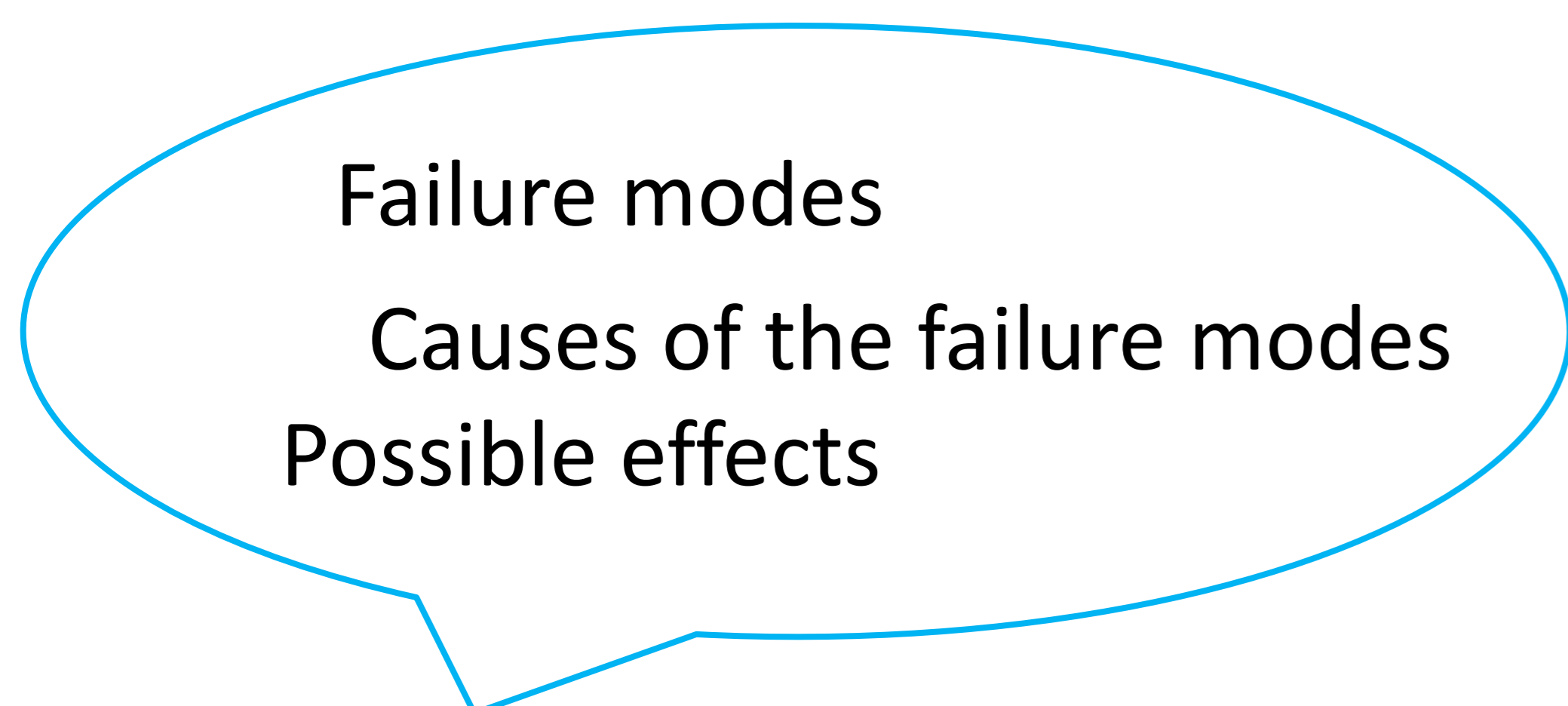
1 Assemble a multidisciplinary team



- ✓ Two hospital pharmacists
- ✓ Two nurses
- ✓ One pharmacy technician
- ✓ One safety specialist

2 Development of process flowcharts

3 Brainstorming



4 FMECA analysis:

- Incidence (1-10)
- Severity (1-10)
- Probability of detection (1-10)

5 Calculation of criticality index (CI)

$$CI = I \times S \times P$$

High Risk CI > 100

Subprocess

Criticality index | High risk failure modes/
 Total number failure modes

RESULTS

Process year 2008

Process year 2016

Manual prescription

1118 | 5/7

Computer order entry

111 | 0/6

Transcription to compounding software

665 | 4/4

Automated transcription interface

17 | 0/2

Pharmacy order verification

270 | 0/3

Pharmacy order verification

192 | 0/3

Preparation of trays

384 | 3/3

Preparation of trays

504 | 3/3

Product tray review

136 | 0/3

Product tray review

136 | 0/3

Compounding

542 | 2/6

Compounding

394 | 0/6

Visual quality control

333 | 1/5

Visual quality control

144 | 0/4

Built-in gravimetric quality control

42 | 0/2

CI yr. 2008: 3518
 yr. 2016: 1540

-56%

reduction overall risks

CONCLUSIONS

FMECA is **valuable tool** for the **detection of areas for improvement** and helped **monitoring** the effectiveness of the improvements after their implementation.

