

ENGINEERING SAFETY IN CRITICAL CARE

An operational framework for preventing medication errors,
distilled from the 2026 SFAR/SFPC Guidelines.

THE ALLIANCE GRAPHIC

INDEPENDENT
METHODOLOGY:
**ZERO INDUSTRY
FUNDING** DECLARED.

SFAR

French Society of
Anaesthesia and
Intensive Care

Clinique Saint
François, Vivalto
group, Nice, France

19
MULTIDISCIPLINARY
EXPERTS

SFPC

French Society of
Clinical Pharmacy

Traditional Paradigm: Reactive

SFAR/SFPC Guideline: Proactive

Timing of
Care

Post-incident response

Continuous system
engineering

Focus of
Intervention

Individual clinician
behavior

System architecture and
environment

View of
Human Error

A failure of individual
competence

An inevitable symptom of
systemic pressure

Supply Chain
Strategy

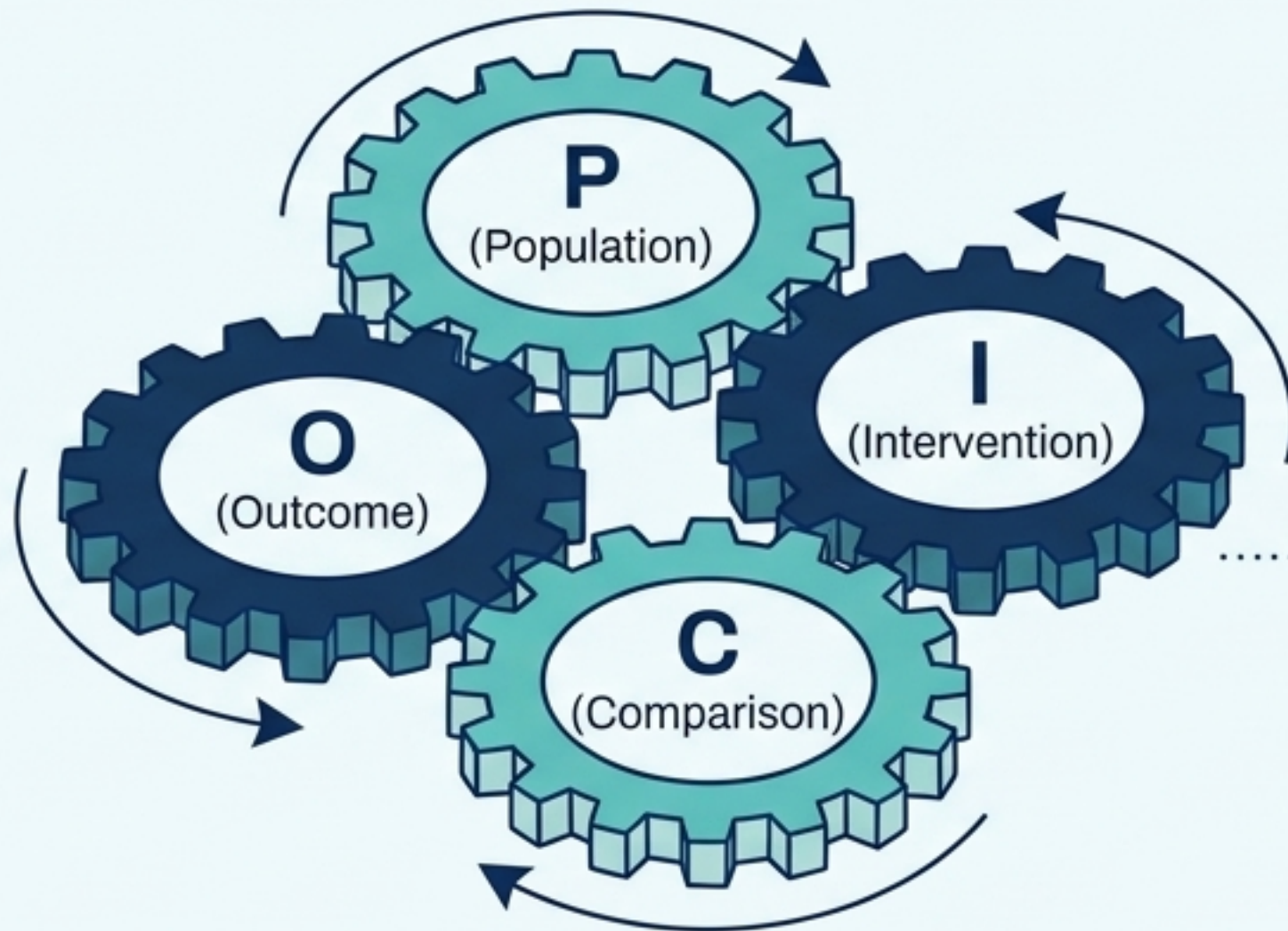
Ad-hoc scrambling
during shortages

Pre-planned,
algorithm-driven mitigation

Core Takeaway: The SFAR/SFPC Guidelines fundamentally shift medication safety from a culture of individual perfection to a framework of systemic resilience.



PICO Gearbox



Every question formulated by the experts was engineered using this exact mechanical logic to ensure targeted, actionable answers.

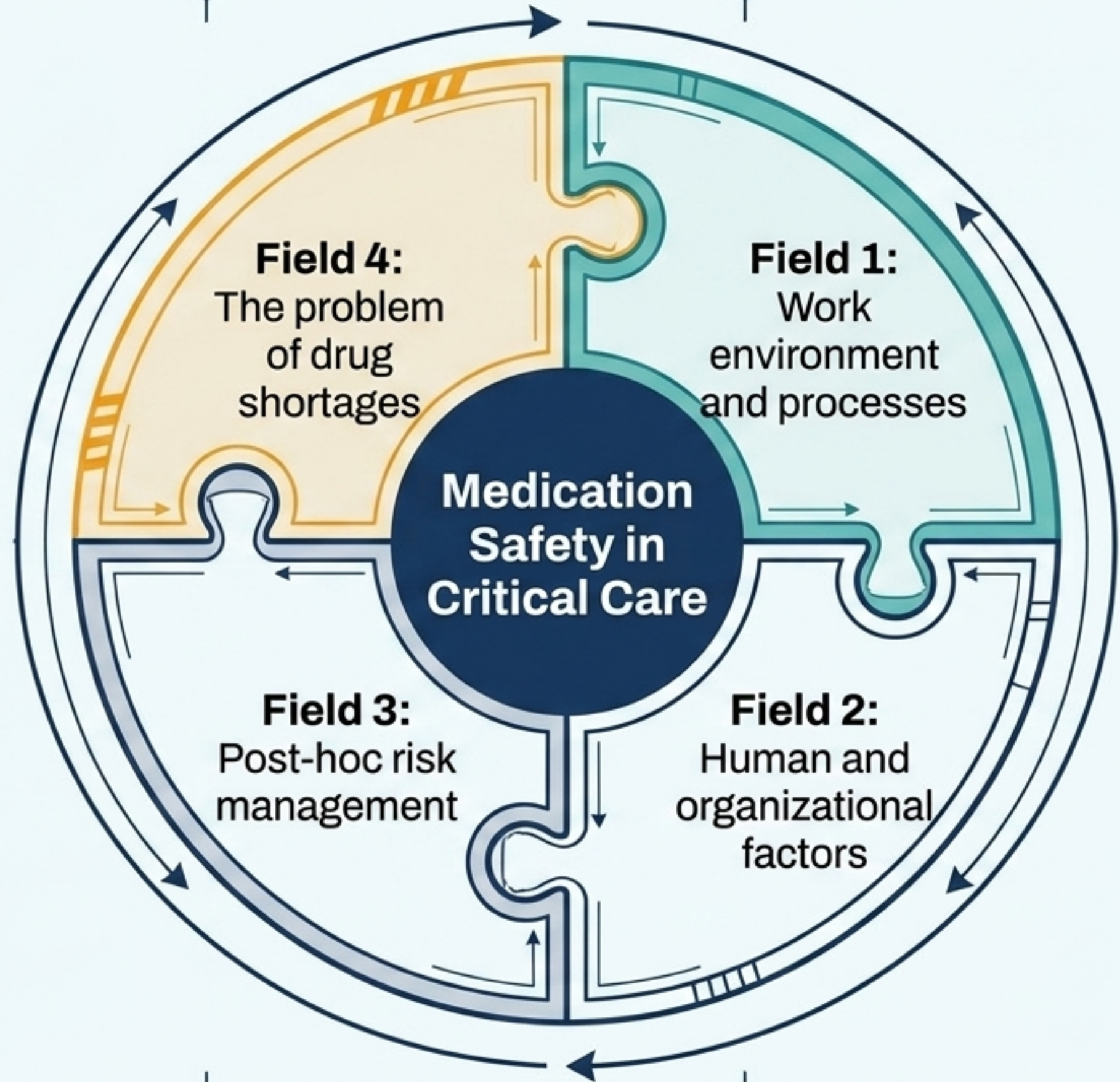
The PPG Pivot

Why Professional Practice Guidelines (PPG)?

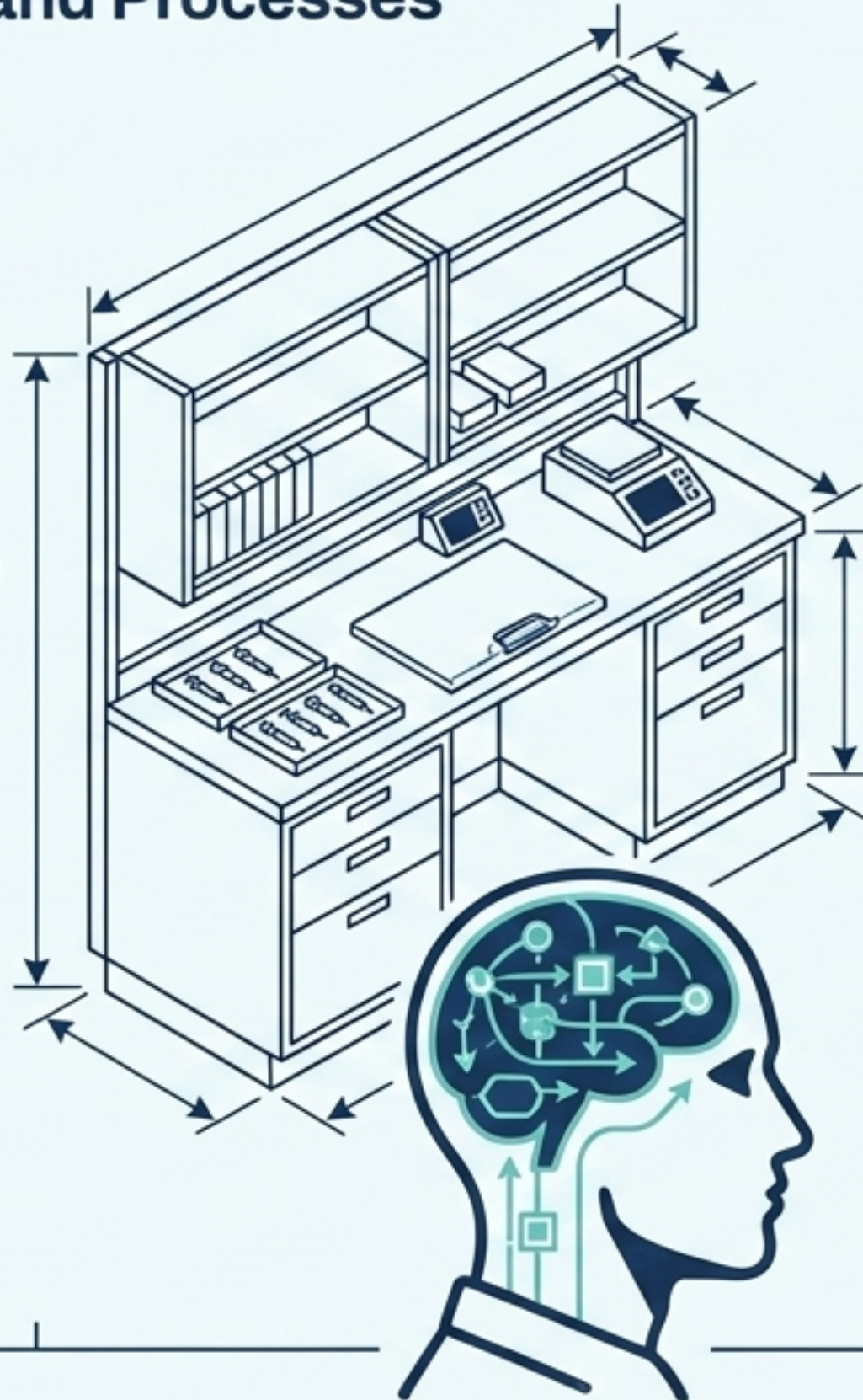
Due to the scarcity of high-power studies **directly measuring the ultimate endpoint** (medication errors), the experts actively chose the PPG format over Formalized Expert Recommendations. This transparent choice prioritizes actionable clinical safety over rigid academic endpoints.

The Safety Ecosystem

The 29 recommendations are not isolated tips; they are distributed across four operational fields that must function simultaneously to prevent harm.



Field 1: Work Environment and Processes



Design of
physical spaces

Standardization
of syringe
labeling

Structural
safeguards in
the workspace

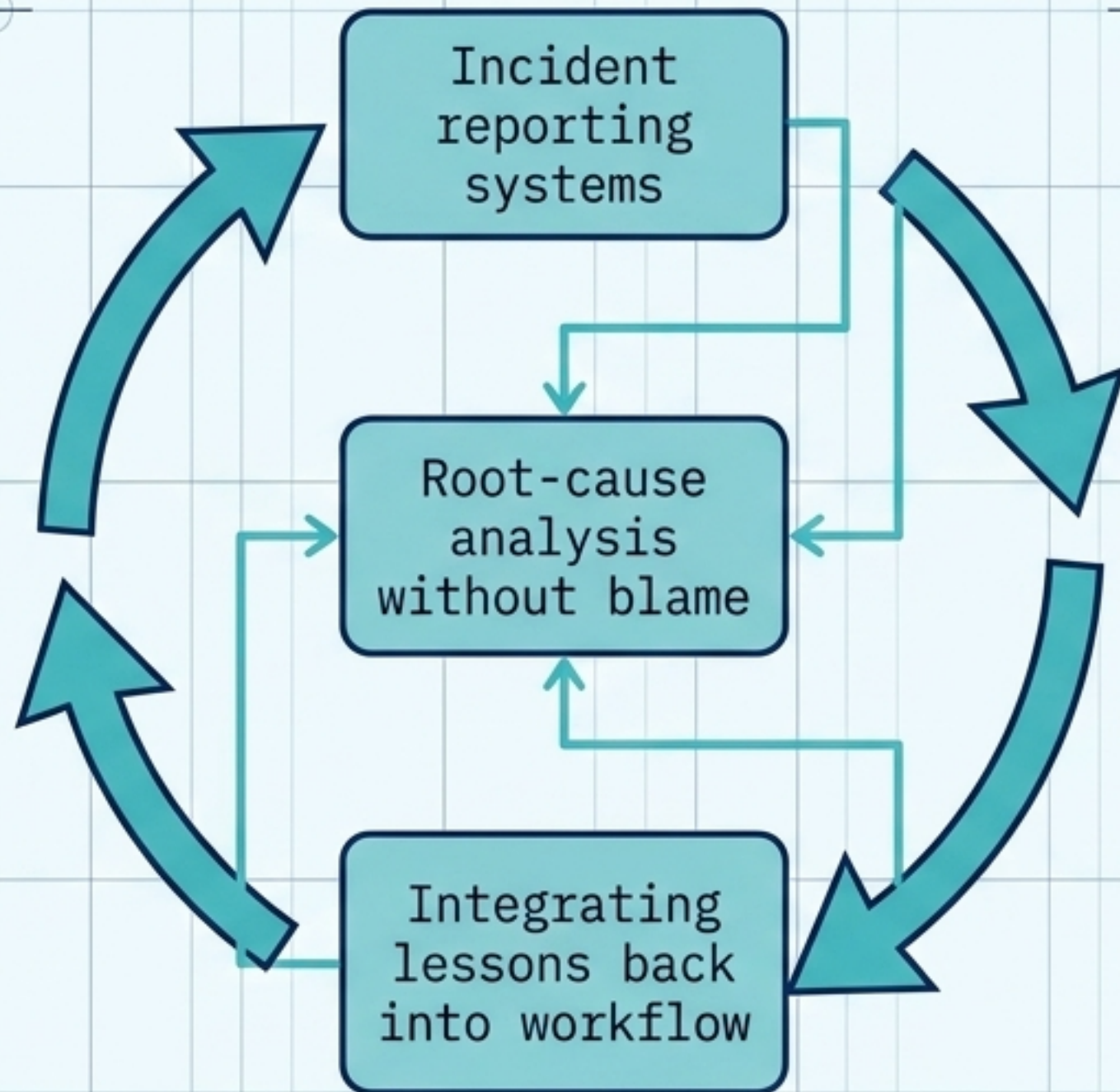
Field 2: Human and Organizational Factors

Management of
cognitive load

Minimization
of task
interruptions

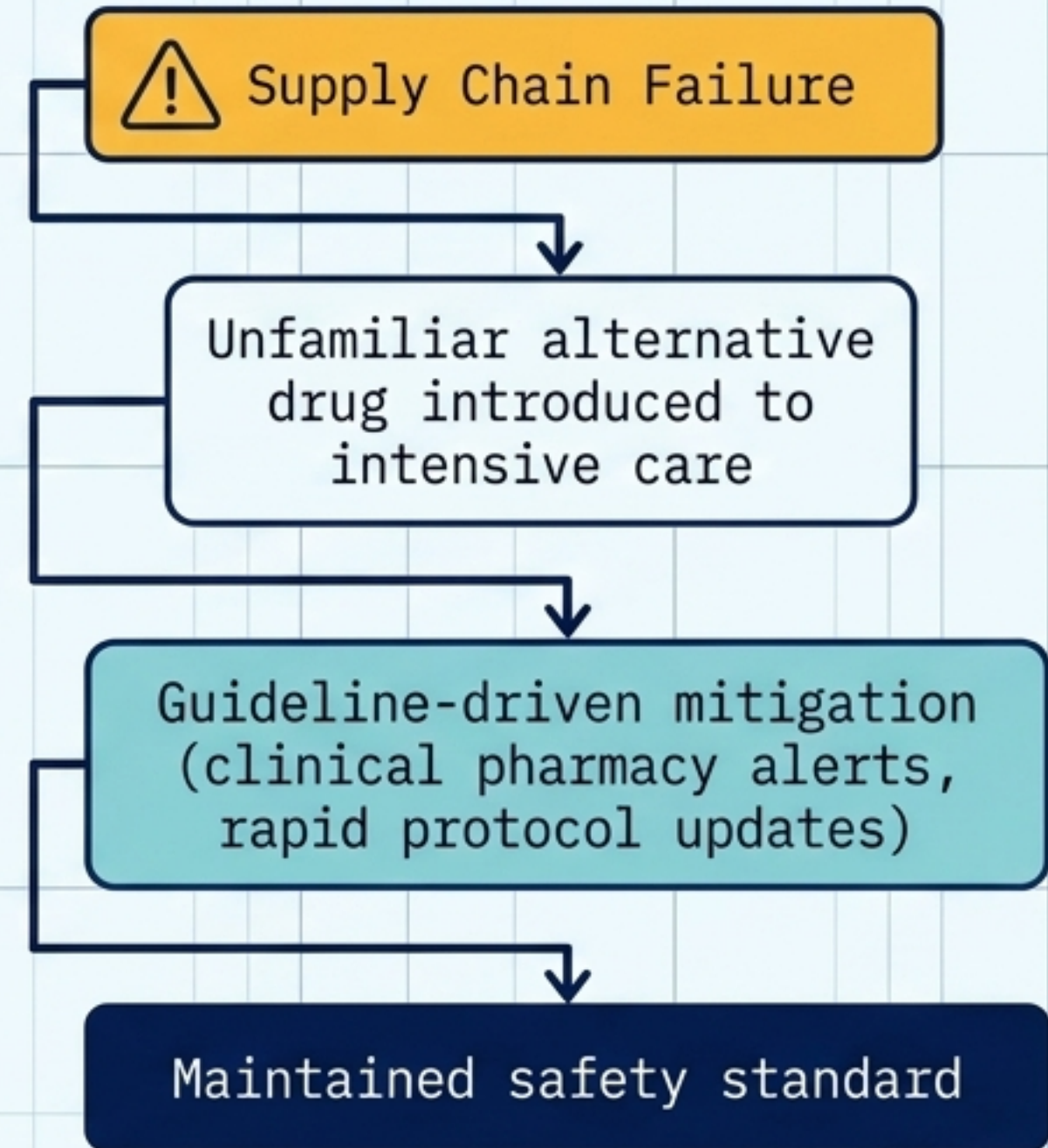
Structured
interdisciplinary
communication

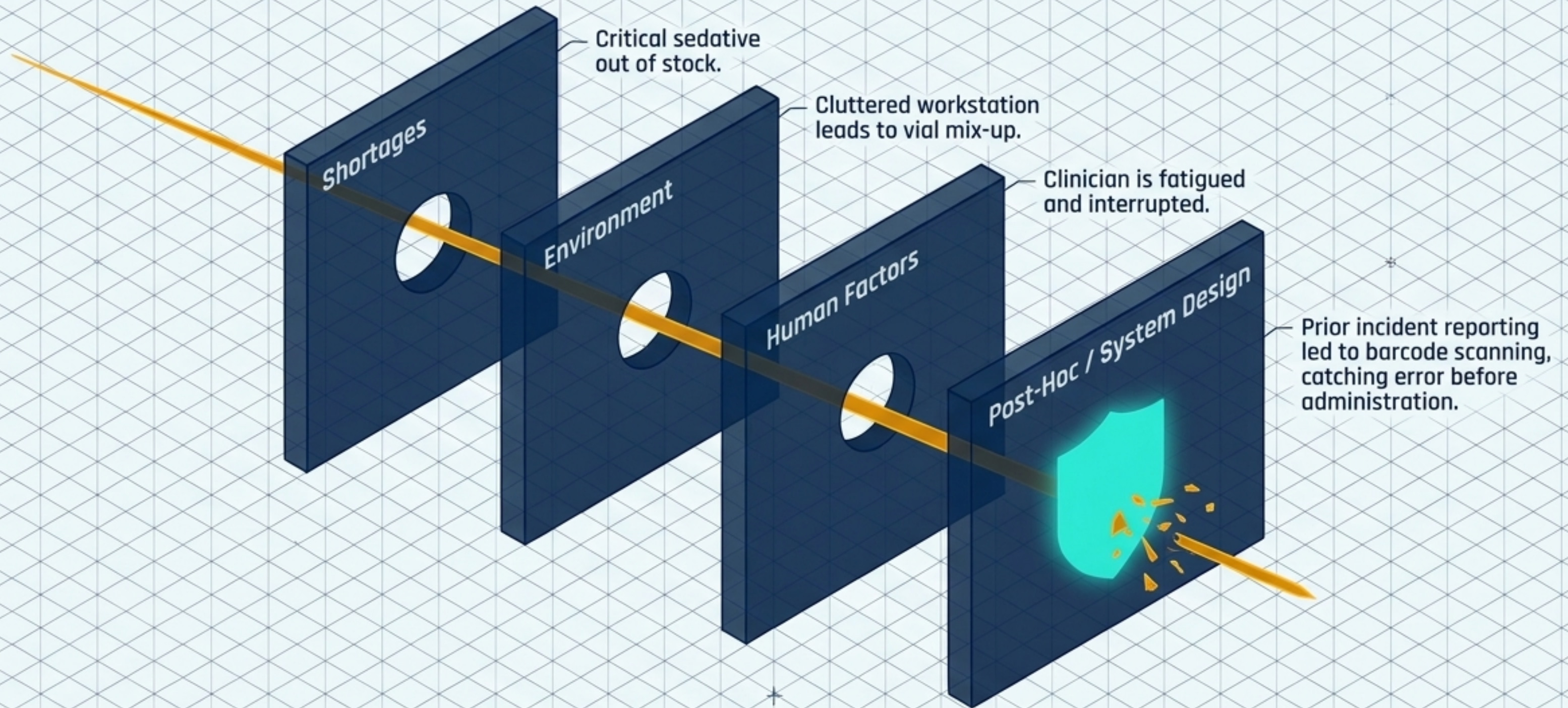
Field 3: Post-Hoc Risk Management



Field 4: The Problem of Drug Shortages

Shortage to Safety





The Layered Defense: The 29 PPGs act as the material filling the gaps in the system. A failure in one pillar is caught by the structural integrity of the others.

Strong Agreement. Unanimous Mandate.

After rigorous GRADE evaluation and voting, the experts reached strong agreement across all 29 recommendations.

The prevention of medication errors in anaesthesia and intensive care requires immediate, simultaneous investment across environment, human factors, risk management, and supply chain protocols.

