Safety Performance Framework

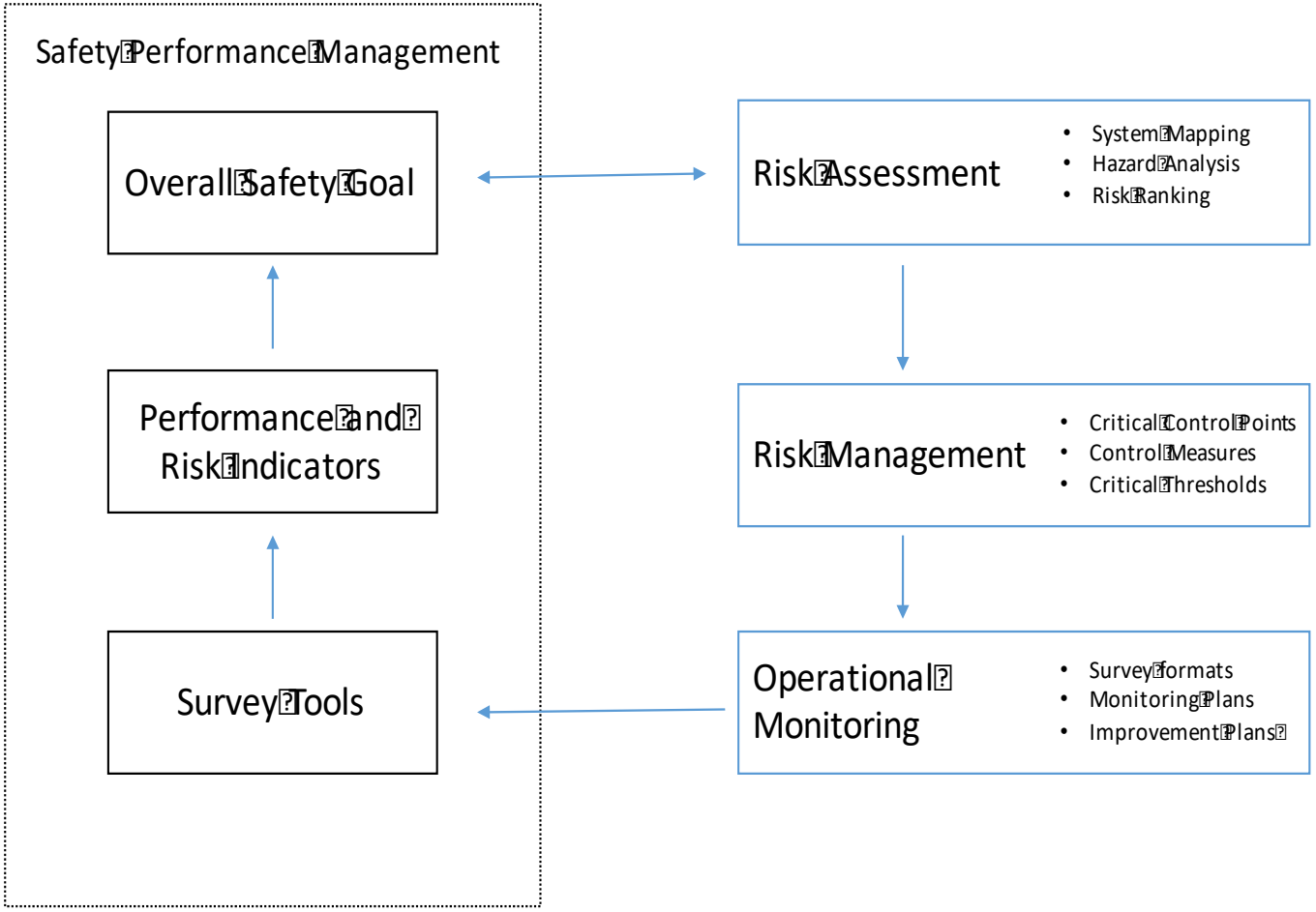
Managing Complexity of Exposure with Performance Indicators

What are safety performance indicators

- A tool used to demonstrate the adequacy /effectiveness of control systems /management strategies.
- SPI identify, prevent exposure before it occurs
- Structured way to collect data giving an impressions of the overall health (in respect of exposure) of the organisation
- Remove dependency and reliance on single indicators
- May give confidence to external stakeholders that risks are being managed

The relation to exposure risk management

- Complements system assessments as part of SSP
- Does not replace day-day safety monitoring



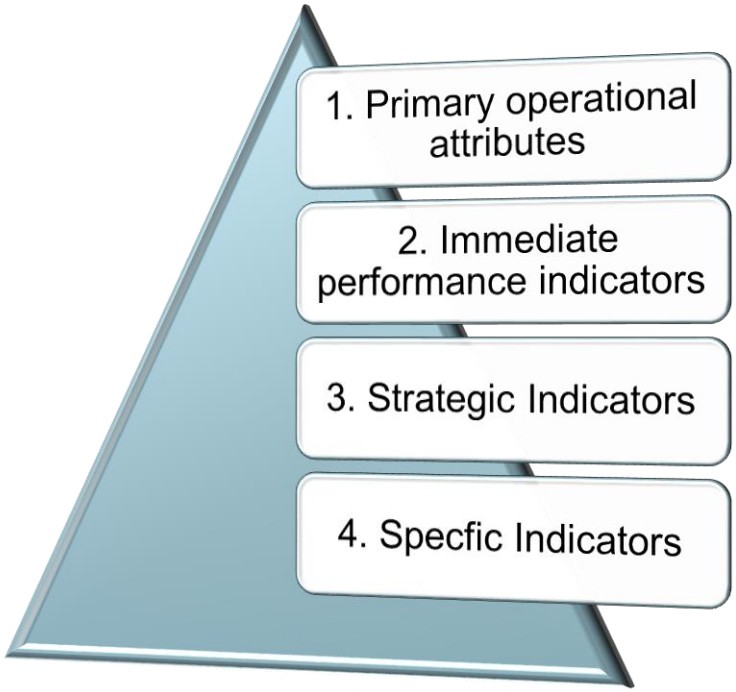
Complexity

- Simple management models are not adequate for complex socio-technical systems we are attempting to manage
- Safety or exposure results from a complex interactions and behaviors of different components in the system.
- Exposure models represent such complexity

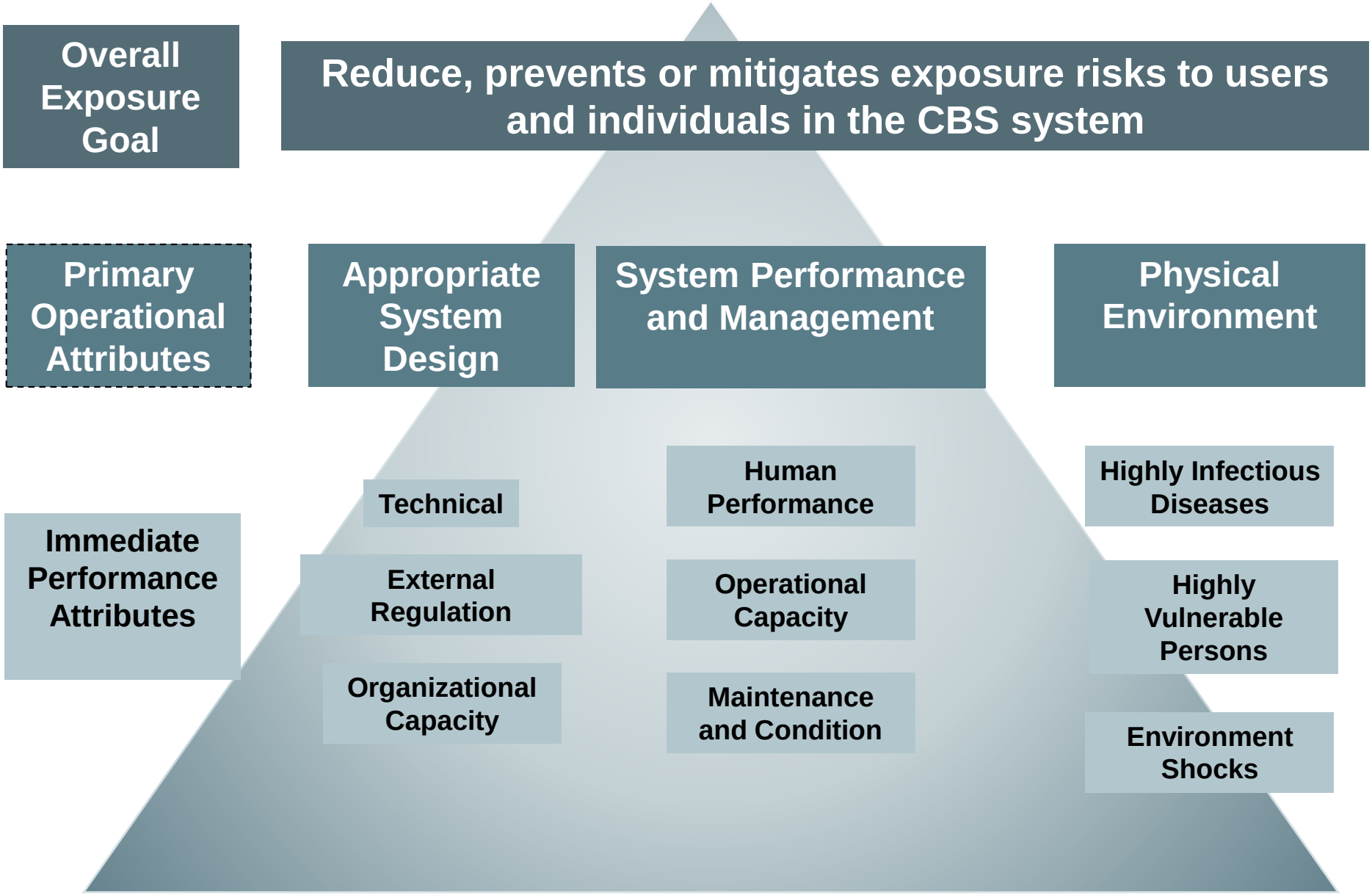
Defining the System Hazard and Conceptual Exposure

- The principle hazard the framework seeks to address is the exposure of individuals to Ecoli during use and operation of the CBS sanitation system
- Achieved using safety controls to prevent exposure occurring
- Measure to reduce risk if exposure occurs
- Based on a bottom up examination of hazardous events and controls measures from literature review and empirical case studies.

Framework Methodological Approach



- The framework aligns these concepts tightly in increasing level of granularity downward, from overall indicators toward specific indicators as shown in figure (1) developed at the site/facility level. This implicit hierarchy means that indicators can be collected at a range of levels (site, facility or organisation). See also HSE 254


Overall Exposure Goal
Reduce, prevents or mitigates exposure risks to users and individuals in the CBS system
Primary Operational Attributes
Appropriate System Design
System Performance and Management
Physical Environment
Immediate Performance Attributes
Technical
External Regulation
Organizational Capacity
Human Performance
Operational Capacity
Maintenance and Condition
Highly Infectious Diseases
Highly Vulnerable Persons
Environment Shocks

2 Performance Attributes consider:

- What is required from the CBS system to operate safely and prevent exposure risks?”
- Controls maybe technical –design or through processes (maintenance, operations and procedures, or social controls. Social controls maybe organizational or individual/cultural

2.1 Strategic Indicators: Appropriate System Design

- *technical design of hardware,*
- *external regulations environment,*
- *internal organizational capacity*

2.2 Strategic Indicators: Correct System Performance and Management

- *Condition of equipment*
- *Maintenance schedules*
- *Operational Capacity*
- *Personal Behaviour*

2.3 Strategic Indicators: Managing External Environmental Factors

- *Response or planning for emergency scenarios such as flood events*
- *Response to highly infectious disease outbreaks*
- *Management of highly vulnerable individuals*

Case Study #1: Sanitation First India
Qualitative Strategic Indicators

Exposure Risk	Risk Score
High risk	>2
Medium-high	1.5-2
Medium-low	1-1.4
Low	<1

Participatory Risk Assessment		Risk Score
User Interface Indicators		
1	Are incidences of diarrheal diseases in the community?	1.4
2	Is the general environment generally very clean?	1.8
3	Is the operational area not prone to flood risks?	1.7
4	Is the toilet design fit-for-purpose (i.e. design)	1
5	Are the toilet units in good condition, waste is well	1
6	Is there regular, scheduled cleaning in effect?	1
7	Is there preventative scheduled maintenance in effect?	1.3
8	Are Standard Operation Protocols (SOPs) established for critical processes (cleaning and disinfection/use and	1
9	Are the SOPs are fit-for-purpose?	1
10	Do users practice regular handwashing after defecation?	1.6
11	Are users are very well informed about the use and operation of the toilet (cover material, use, cleaning)?	1.2
12	Do users wear footwear/adequate protection to use the	1.6
13	Do staff undergo regular training exercises and records	
14	Are staff are compliant to handwashing or hand hygiene according to key times?	
15	Are staff are compliant to PPE protocols	
16	Is there a health management	
	front line staff and ma	
	health checks	
	Overall	