



# THE ECOSYSTEM OF EVIDENCE

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## **BEYOND THE BARRIERS OF HEALTH CARE MANAGEMENT TOOLS: *AN INTEGRATED APPROACH IN LEAN MANAGEMENT, CLINICAL PATHWAYS AND CLINICAL RISK MANAGEMENT***

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# PROBLEMS IN CHOOSING HEALTHCARE MANAGEMENT TOOLS



There exists a plethora of tools and approaches in healthcare management for quality improvement

The choice of one or another (*the operation of matching the problem at stake to a particular tool according to its suitability for that class of issues*) is rarely based on evidence and usually depends on the manager's personal attitudes

Moreover, literature shows that once a particular tool is picked up, it is then applied with a kind of “all or nothing” attitude



# OBJECTIVE

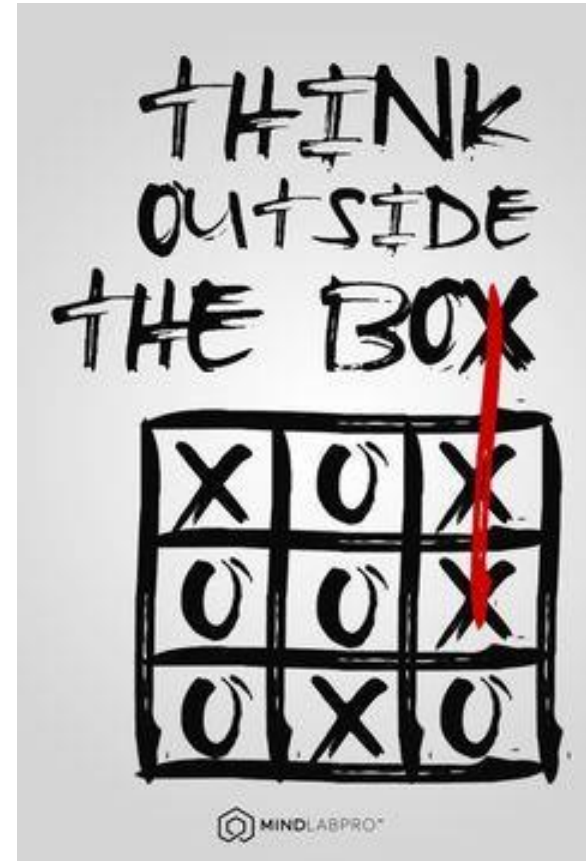


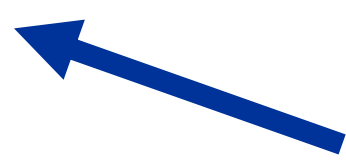
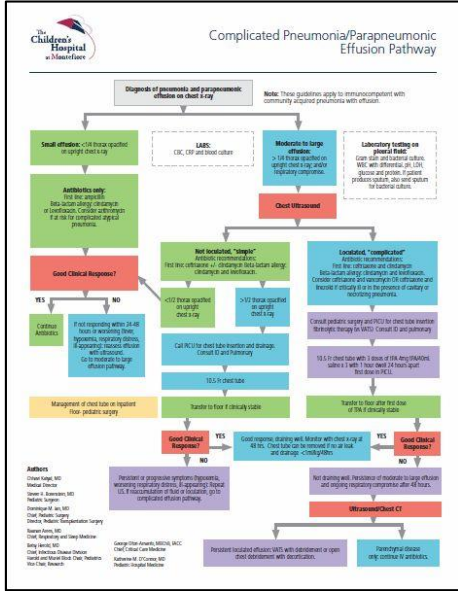
Think outside the box

and

Propose an integrated approach among three management tools:

- LEAN MANAGEMENT
- PROACTIVE APPROACH OF CLINICAL RISK MANAG.
- CLINICAL PATHWAYS





# Lean management

# Clinical pathways



# FMECA (proactive tool of clinical risk management)

Initial Mishap Risk Index/Criticality Matrix

Mishap Risk Index (MRI) Matrix	Severity Classification			
	1 (I)	2 (II)	3 (III)	4 (IV)
Criticality Number, C <sub>M</sub>	Catastrophic	Critical	Marginal	Negligible
(A) Frequent (C <sub>M</sub> > 10 <sup>-1</sup> )	0	0	0	0
(B) Probable (10 <sup>-1</sup> > C <sub>M</sub> > 10 <sup>-2</sup> )	0	0	1	0
(C) Occasional (10 <sup>-2</sup> > C <sub>M</sub> > 10 <sup>-3</sup> )	1	0	0	0
(D) Remote (10 <sup>-3</sup> > C <sub>M</sub> > 10 <sup>-4</sup> )	0	0	0	0
(E) Extremely Unlikely (10 <sup>-4</sup> > C <sub>M</sub> > 0)	0	0	0	0

(High)  
Criticality Number, C<sub>M</sub>  
(Low)

# SPECIFIC AIMS OF THESE THREE TOOLS



## **Lean management**

to reduce waste and improve efficiency

## **Clinical risk management**

to reduce adverse events to patients and improve safety

## **Clinical pathways**

to increase appropriateness linking clinical choices to the best available evidence and improve effectiveness.



# SIMILARITIES IN THE APPLICATION PHASES OF THESE THREE TOOLS



- a) An analysis of the actual process the patients go through and of the concrete activities performed by health personnel in wards/departments that need improvement
- b) A further examination of the processes involving patients and personnel through their “specific lens”
- c) An overhaul of the process according to the optimal model worked out
- d) The actual implementation of the changes followed by monitoring and evaluation of the results using SMART indicators

# «SPECIFIC LENS» OF PHASE B



**Lean management:** increasing value through the elimination of wastes (*muda*) with the application of dedicated tools (value stream map, visual management, 5S, pull system, kanban and others)



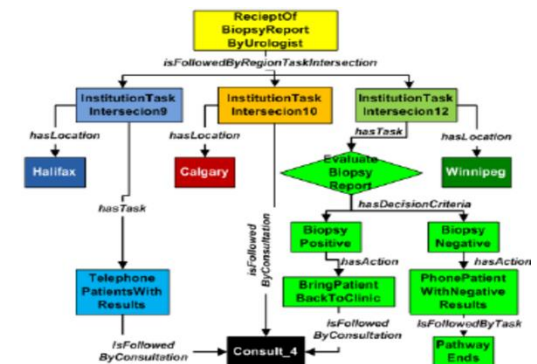
**Proactive clinical risk management:** identification of the dangerous steps applying the FMECA (Faiure Mode Effects and Criticality Analysis) in order to “close the holes in the cheese” before an adverse event might occur to a patient

Initial Failure Risk Index/Criticality Matrix

Failure Risk Index (FRI) Matrix	Criticality Assessment			
	1-25	26-50	51-75	76-100
Severity Number, S <sub>n</sub>	Catastrophic	Critical	Major	Minor
(A) Frequent (C <sub>p</sub> > 10 <sup>-1</sup> )	High	High	Medium	Low
(B) Probable (10 <sup>-2</sup> > C <sub>p</sub> > 10 <sup>-3</sup> )	High	High	Medium	Low
(C) Occasional (10 <sup>-3</sup> > C <sub>p</sub> > 10 <sup>-4</sup> )	Medium	Medium	Medium	Low
(D) Remote (10 <sup>-4</sup> > C <sub>p</sub> > 10 <sup>-5</sup> )	Low	Low	Low	Low
(E) Extremely Unlikely (10 <sup>-5</sup> > C <sub>p</sub> > 10 <sup>-6</sup> )	Low	Low	Low	Low

Vertical axis: Criticality Number, CN (Low to High)

**Clinical pathways:** reduction of variability among health professionals by means of an alignment of diagnostic and therapeutic decisions with the recommendations of the reference clinical guideline







# FMEA (Failure Mode Effects and Criticality Analysis)

H = high risk (probability X severity)

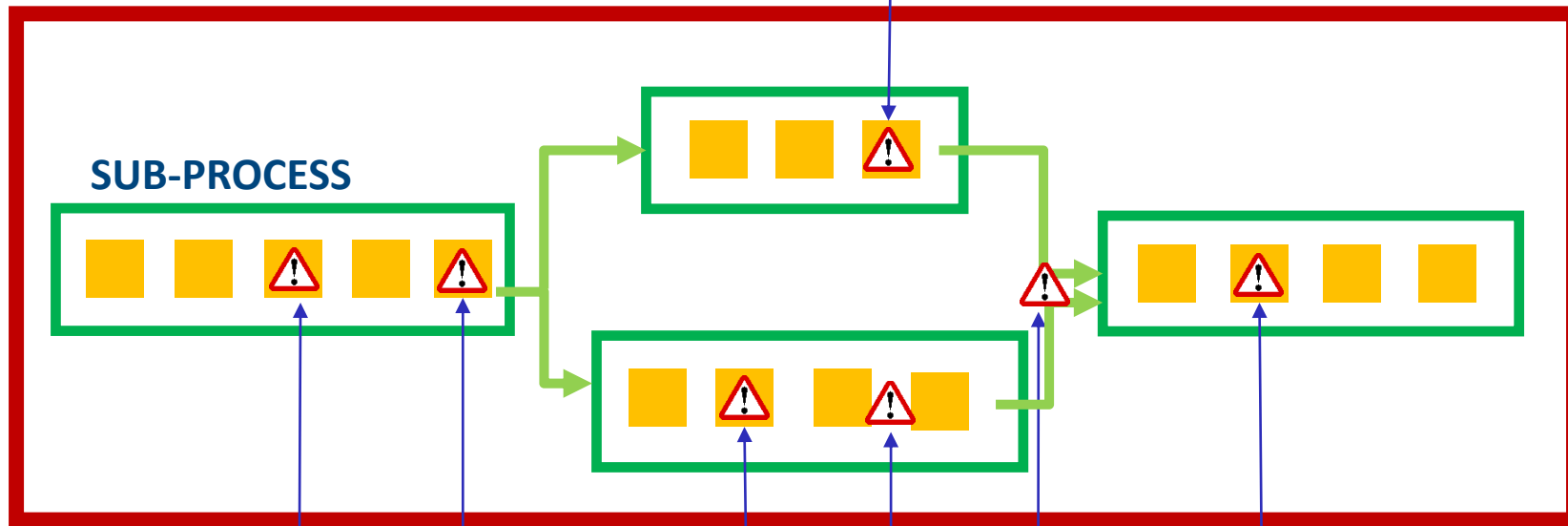
Process ———

Sub-process ———

Procedures ■



IN  
→



H 1

H 2

H 3

H 4

H 6

H 7

H 5



OUT  
→

# CLINICAL PATHWAYS

R = guideline recommendations

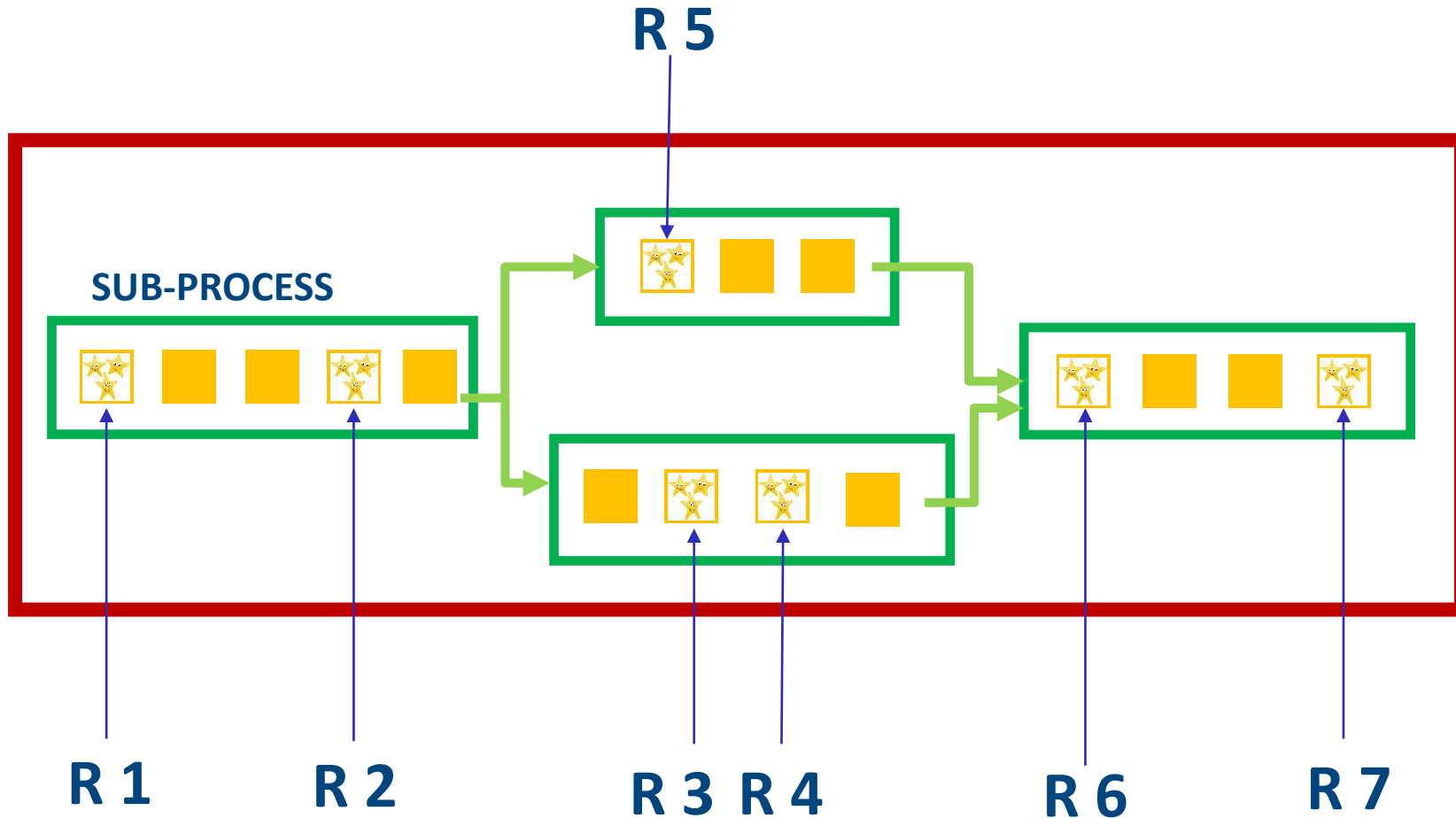
Process 

Sub-process 

Procedures 



IN



OUT





# FINAL THOUGHTS

Depending on the context and the problems under scrutiny the application of lean management or FMEA or clinical pathways can be more appropriate.

What may result in critical advancement, however, is that, when it comes to the common step of process re-engineering, an integration of the three approaches is conducive to the improvement of several quality dimensions at once.

