

IRSN

INSTITUT
DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE

Faire avancer la sûreté nucléaire

Transitioning to safety II : understand how the health care team's modes of success could turn into risks for patients.

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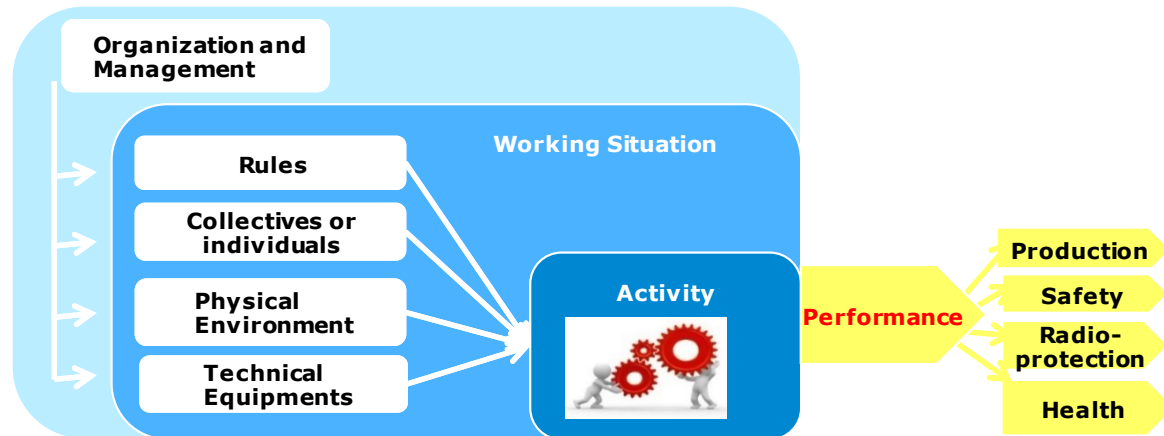
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A few reminders about Safety I approach...

“Adverse outcomes (accidents, incidents) happen because something goes wrong....”



Failures and malfunctions occur due to technical, human and organizational causes



Following Safety I approach :

- The purpose of accident investigation is to identify the causes and contributory factors of adverse outcomes (root causes)
- The purpose of risk assessment is to determine their likelihood

➔ **Eliminating causes and/or improving barriers**

Going Beyond Safety I....

Socio-technical systems are increasingly complex (*technological developments, highly coupled and interdependent activities ...*)

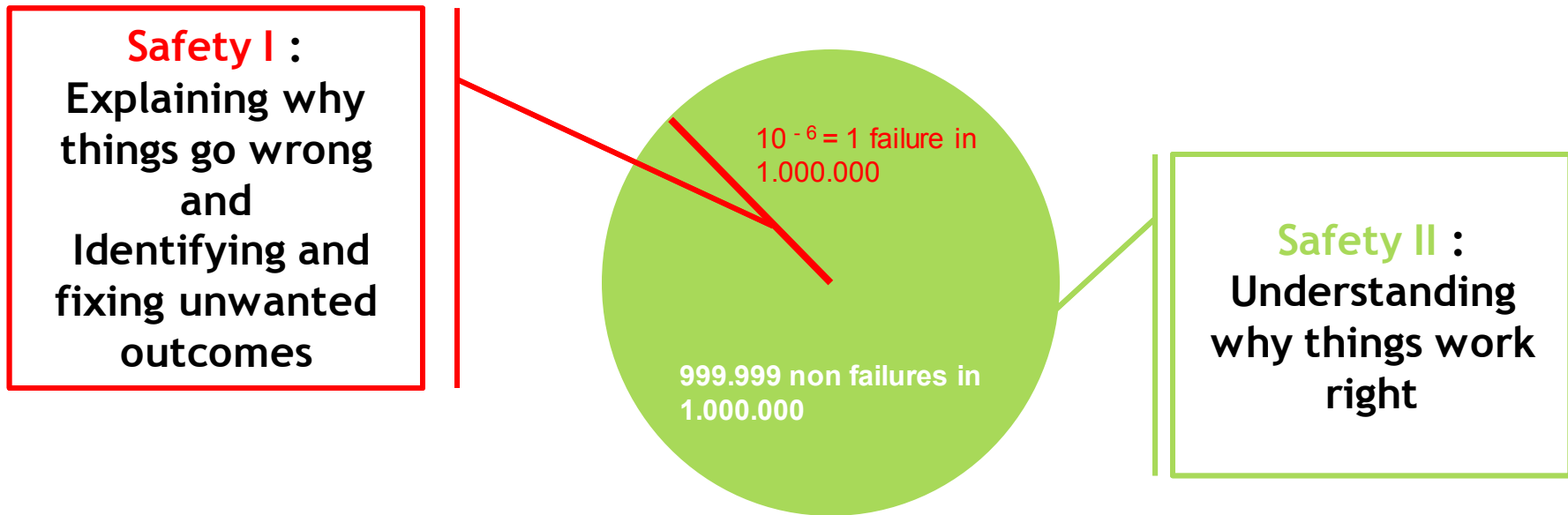


Describing precisely functioning is becoming more and more difficult

(In complex socio-technical systems, components are not only in one or the other of the two modes “operating properly or not (malfunctioning)”)

- Risk analysis must also take into account “real work” and the necessary adaptability of the health care team to make the system work
- It leads to look forward “why it works” → *Safety II approach*

Safety II : a complementary approach to Safety I



Safety I : “**What goes wrong**” corresponds to a tiny fraction of datas compared to “what works as expected ”

→ **What goes wrong** = a limited amount of datas to analyze

Safety II : Searching for “**why things go right**” and make sure it will happen again

→ **What goes right** = a large amount of datas to analyze → **opportunity to understand what are the characteristics of performance**

Safety II in practice in Radiotherapy



Radiotherapy is a complex process

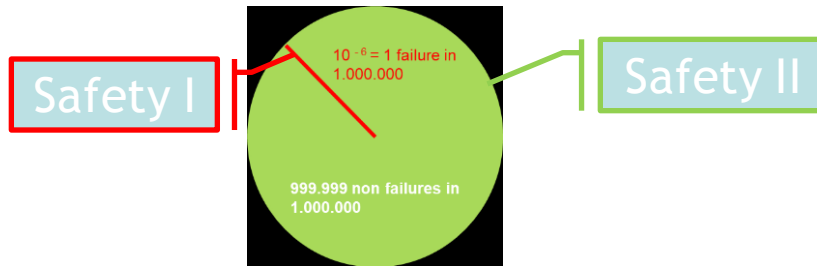
- High level of **technology** (interdependences between tools, man-machine interactions,...)
- **Interdependences** between human activities ; collective construction of an tailored solution for individual patient ; flexibility
- High level of **variability** (practices, team composition, techniques,...)
- High level of constraints : budget, technical and organizational evolutions, increase in requests



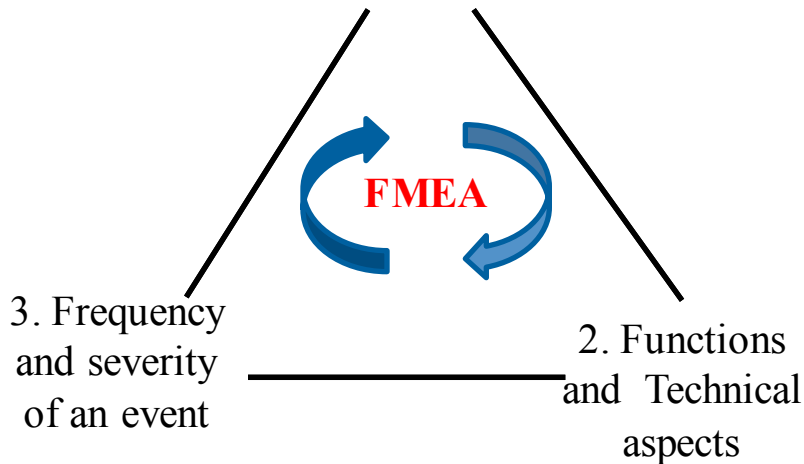
Increasing the team capacity to succeed under varying conditions → Improving safety of the care

Safety II in practice in Radiotherapy

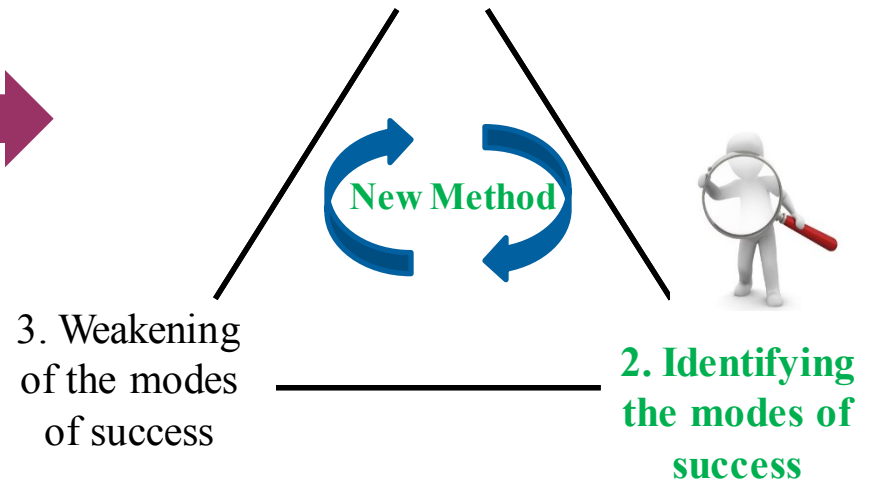
A new approach to analyze the safety of care : Focus on the modes of success put in place by the health care team



1. Analyzing failure modes in radiotherapy



1. Exploring the complexity of work in radiotherapy



Safety 2 in practice in Radiotherapy

■ The **new method** proposed : Spaces for Sharing and Exploring the Complexity of Work (**“EPECT”** in French)

- A think tank
 - 2 people per functions (*restricted medical team*)
 - 1 facilitator (risk management coordinator)
 - 1h30 to 2h every 3 months


■ A method in 4 steps :

- **Steps 1 and 2** → Understanding why things are going well despite the complexity of work situations met in radiotherapy
- **Steps 3 and 4** → How Preventing things from going wrong (*security phase*)

Safety II: Understanding why things are going right
(→ Steps 1 and 2 of the EPECT Method : Focus on the health care team performance)

Step 1 of the EPECT Method: Exploring the complexity of daily work in RT

Participants are asked to :

Built a  including disorganization elements met in daily work (30 mn):

- Changes;
- Constraints;
- Inconsistencies;
- Disorders;
- Social tensions....

→ *To reflect the complexity of daily work situations in Radiotherapy*

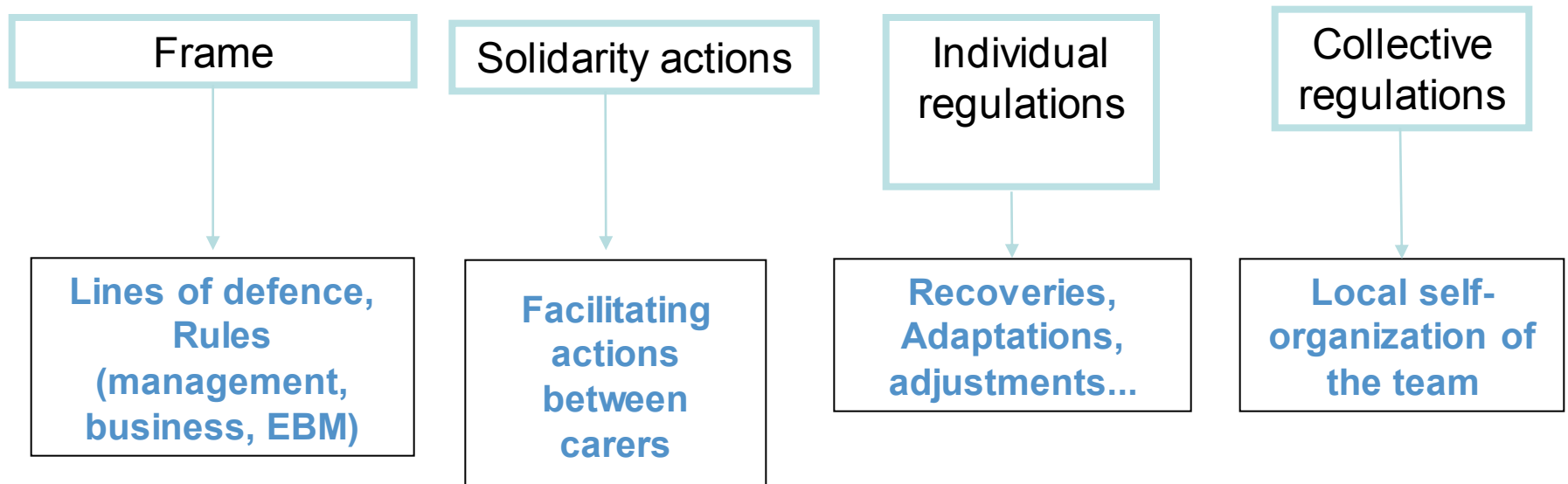
Example of a scenario: a patient comes for a complete breast. She sees a substitute doctor [*change*]. He makes the medical prescription on computer but not on paper whereas it is important in the process of the center [*constraint, tension*]. As the doctor does not know the practices of the centre, the balls are not positioned as usual [*change, tension*]. The manipulator scans the patient while she takes an analgesic position, difficult to reproduce for treatment [*constraint*]. Dosimetry is complicated [*constraint*] because it is a complete breast (many beams). The TPS used is not linked to ARIA [*constraint*]. The manipulators cannot check the beams because the treatment is too complicated, it is not their job and they trust them [*constraint*].

Step 2 of the EPECT Method :

Elements contributing to the team's care performance

Participants are asked to :

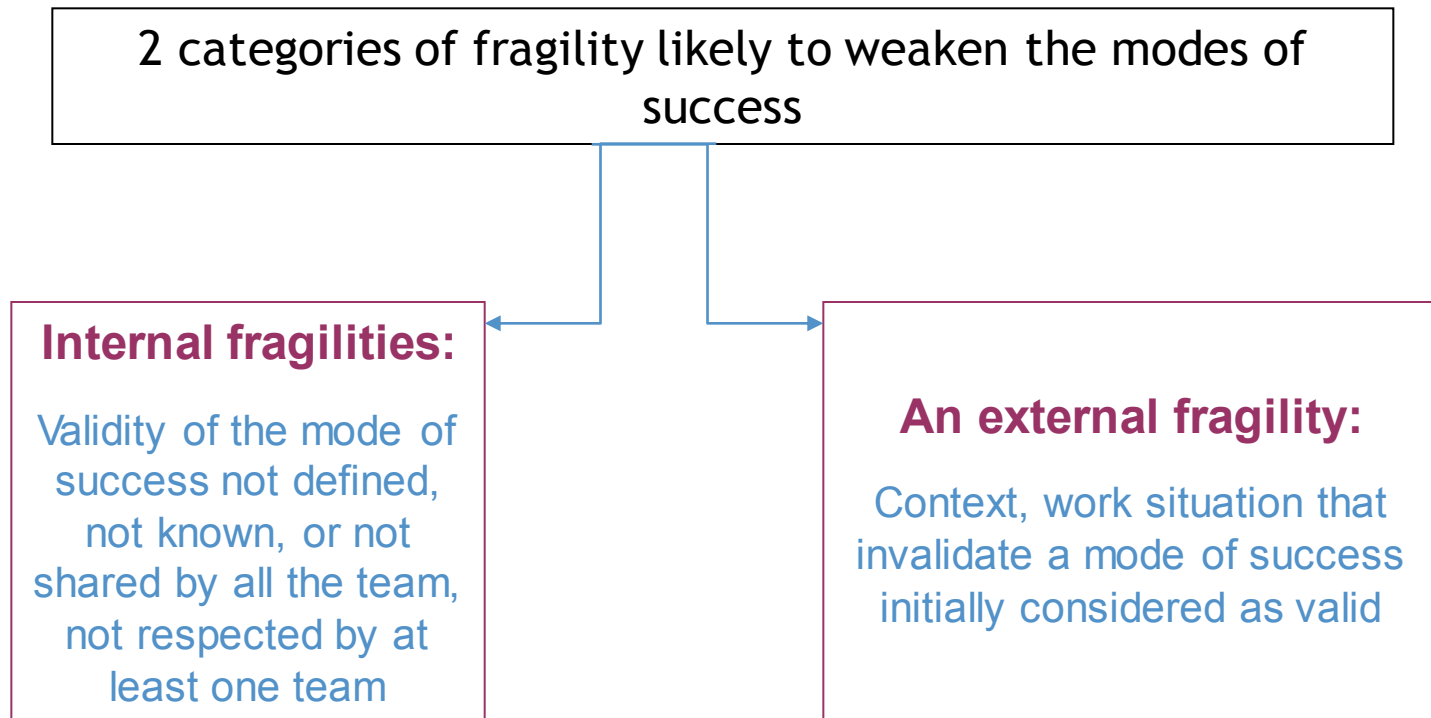
Identifying the modes of success allowing to solve the scenario defined previously and improving the health care team performance (30 mn):



Safety II: : Preventing things from going wrong
(→ Steps 3 and 4 of the EPECT Method : Focus on how the health care team's modes of success could turn into risks for patients)

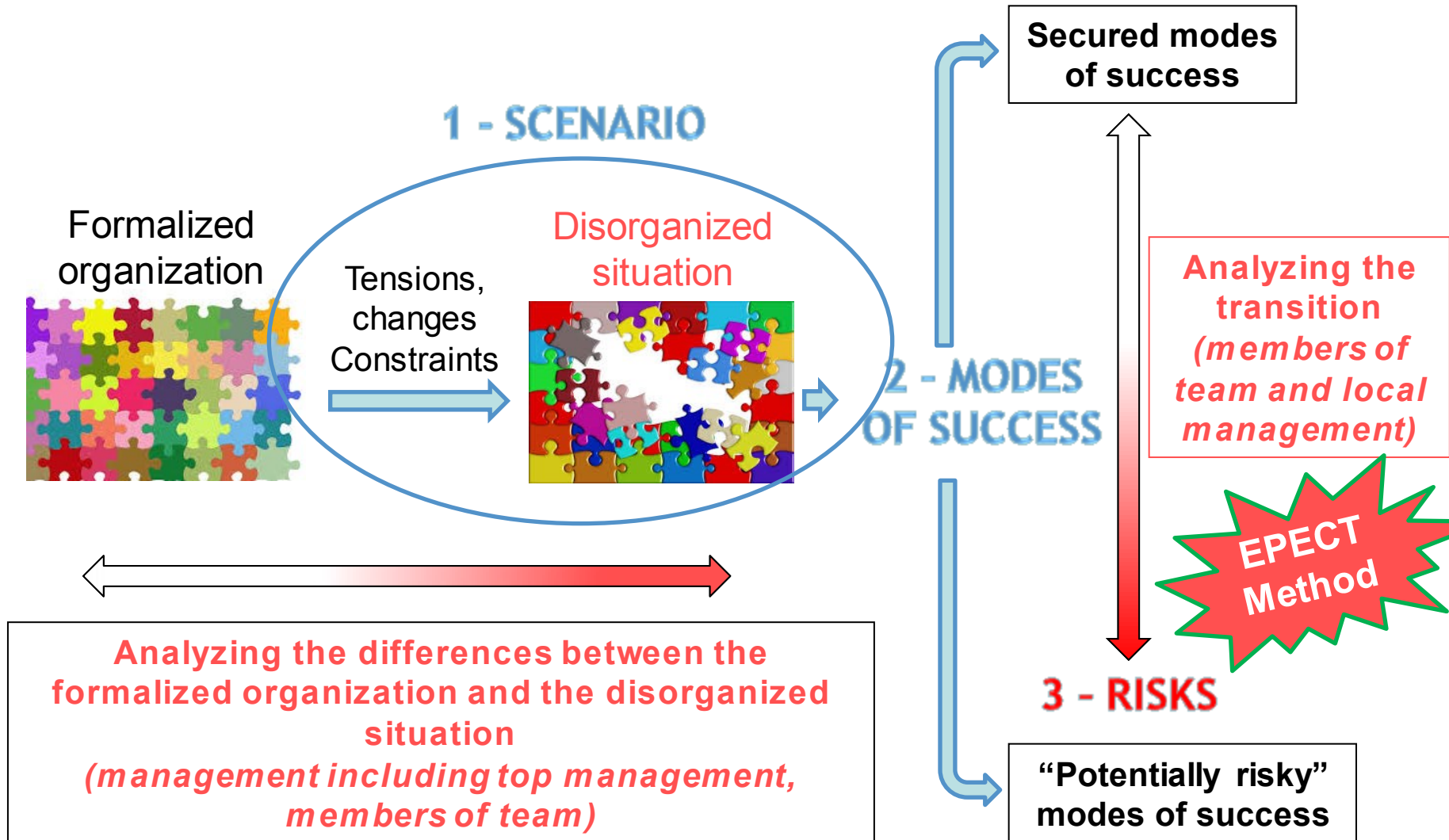
Step 3 of the EPECT Method : Identifying risks for the patients

Participants are asked to identify fragilities in the modes of success

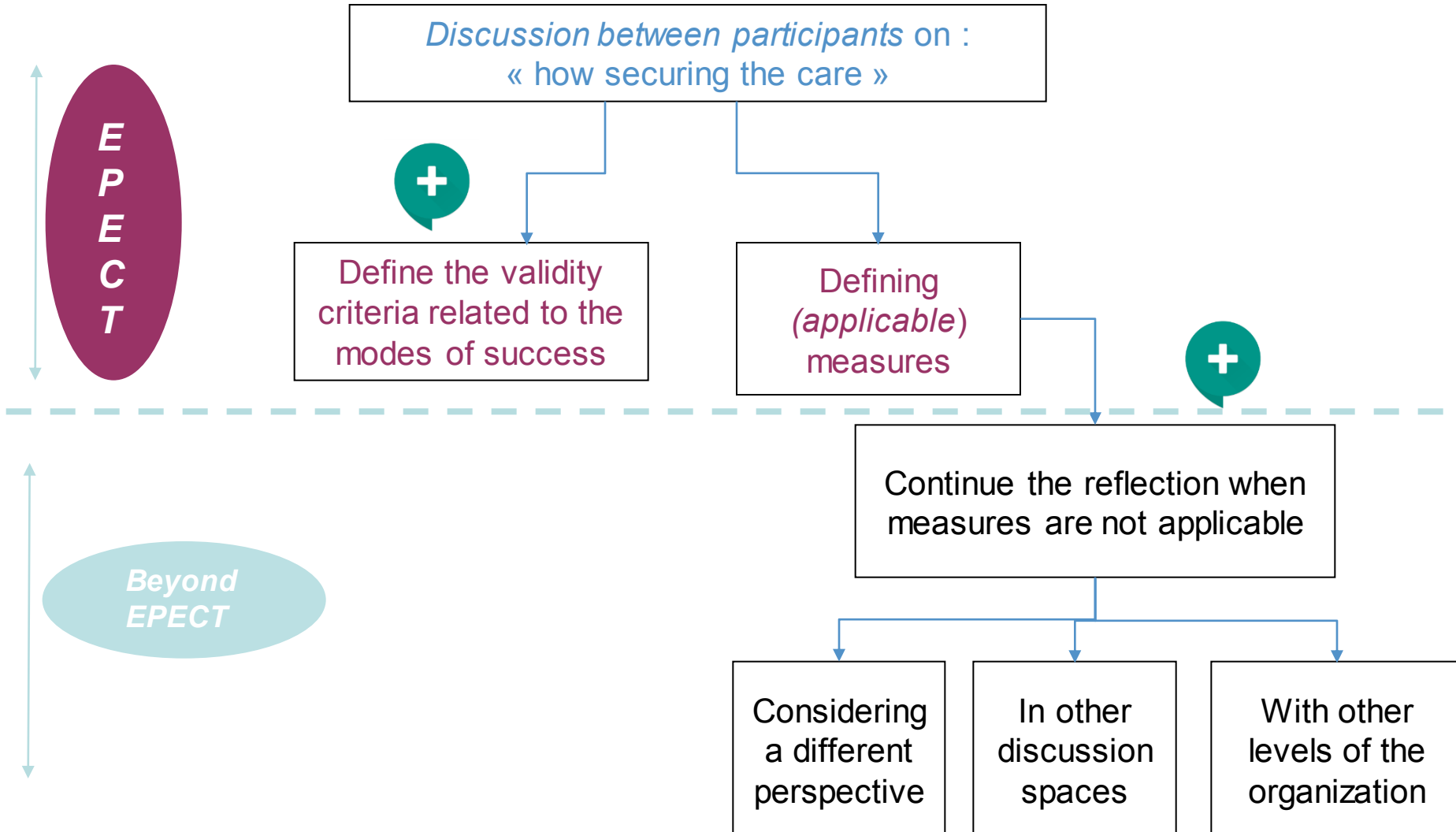


→ *Questionning the risky potential of the (formal and informal) modes of success*

Step 4 (1/2): Discussing the work organization



Step 4 (2/2): Securing the care



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Thanks for your attention