

Assessment of hospital resilience

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Improve lives



Be ready to everything



Two main goals

Hospital should function well under all circumstances



Main blocks of hospital resilience



We can consider this as a construction set made up of various blocks (improvement tools).

If we have these blocks and understand how to combine them, we can assemble the construction set in many different ways, depending on local circumstances.

This variability of different combinations of the same blocks ensures the system flexibility.

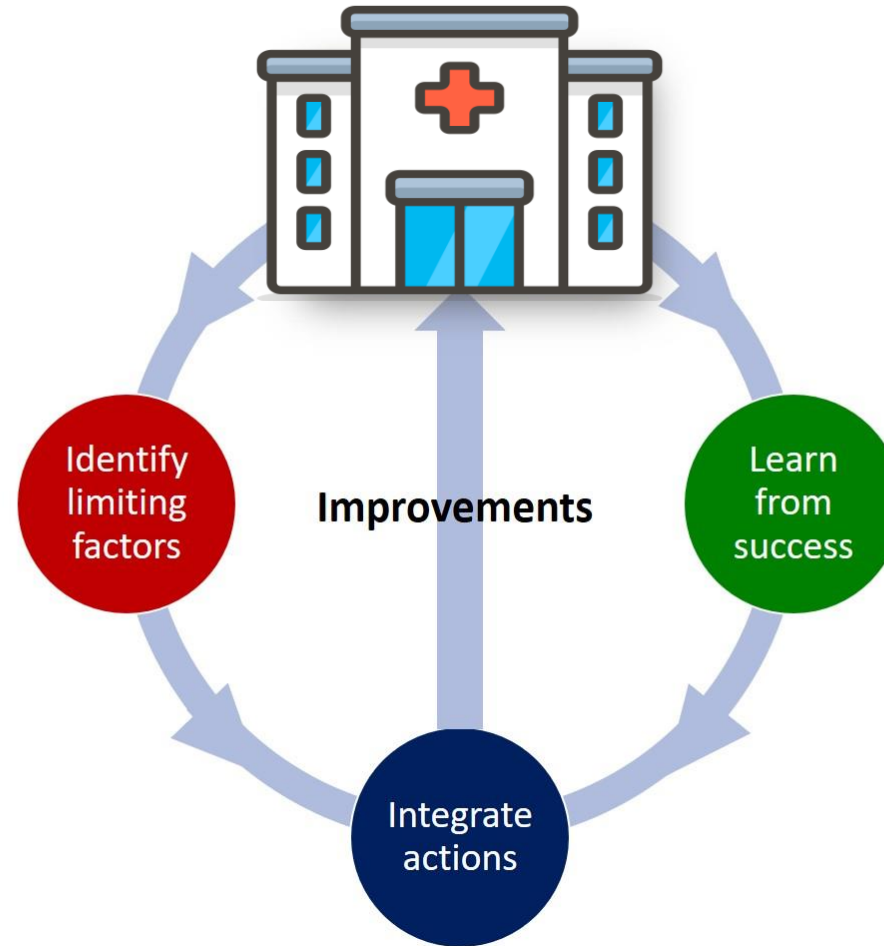
The blocks



The blocks are bonded together through **COMMUNICATION**

How to assemble the blocks?

Determine the processes that most hinder the development of the entire system



Focus on the successful aspects of the existing hospital system

Combine efforts to address limiting factors with actions that support successful practices

General instructions

Each block contains its characteristics, the questionnaire to evaluate these characteristics, actions for improvements, and a case study.

Every block should be analysed independently.

For better output, it is beneficial if the questionnaires should be answered by both the hospital management team (non-anonymously) and front-line workers (anonymously or with self-identification). This allows for comparing the views of the staff and the management on the same aspects of the hospital's work.

Analysis of the responses reveals the hospital's strengths and weaknesses ("Yes" indicates strengths, "No" indicates weaknesses).

It is recommended to add an optional text field after each question. This allows for detailing strengths and weaknesses, receiving feedback and improvement ideas directly from the staff, as well as identifying real leaders (proactive, caring employees with useful ideas).

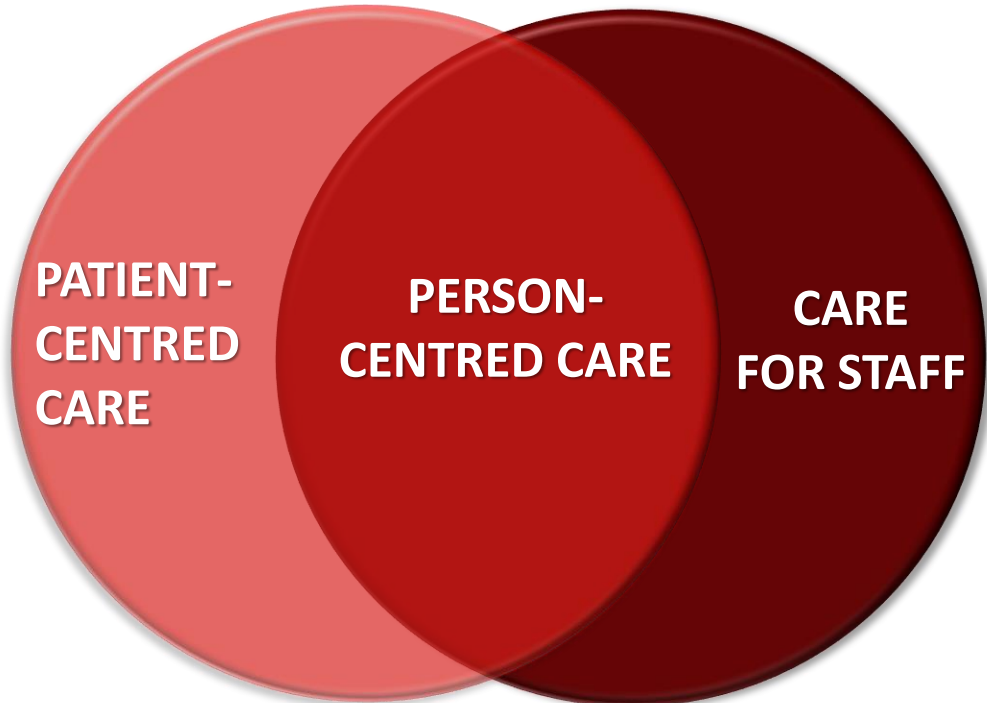
Assessment of hospital resilience can be both qualitative ("Yes/No" and text comments) and quantitative (analysis and tracking of changes over time (see p. 31)).

When analysing the results, it is important to:

- 1) Pay attention not only to weaknesses but also to strengths. Positive examples can be used to improve the system.
- 2) When implementing innovations, take into account employee suggestions from the questionnaire text fields.

People

Focus on all persons – participants of the healthcare process: staff, patients, caregivers, and communities



- Partnership between healthcare professionals and patients, caregivers, and communities
- Taking into account a person's needs (physical, mental, cultural, and social)
- Partnership within staff
- Supportive environment for collaboration between staff, patients, caregivers, and communities

- 1.** Is there a constantly functioning committee which brings together hospital staff and patients/caregivers?
- 2.** Are staff members explained the principles of person-centred approach upon employment or during their work?
- 3.** Is there a mandatory procedure (checklist, screening) for identifying non-medical (psychological, cultural, social) needs of patients?
- 4.** Are there functioning channels through which staff can voice their needs and receive a response?
- 5.** Do patients and/or their caregivers participate in the discussion about their diagnosis and treatment?
- 6.** Are caregivers involved in the treatment and care process?
- 7.** Is there a person (psychologist, support service) at the hospital who provides moral and emotional support to staff if needed?
- 8.** Do staff have the opportunity to make or participate in decisions related to their work and workplace?
- 9.** Is there a simple way for patients to provide feedback on their experience at the hospital?
- 10.** Is there a simple way for staff to share their feedback about their work at the hospital with the management team?

General

During job interview: indirect questions that clarify the candidate's attitude to teamwork and to the needs of patients.

Incorporation of person-centred approach training into staff onboarding programs.

On-site role playing on person-centered approach, including work in mixed teams.

Targeted (for No in the questionnaire)

1. Creating and implementing a committee working with patients and caregivers.
2. Incorporation of person-centred approach training into staff onboarding programs.
3. Developing and implementing a script for written or oral clarification of the patient's physical, mental, cultural, and social needs.
4. Developing and implementing a questionnaire to identify physical, mental, cultural, and social needs of staff or providing another opportunity for employees to state their needs.
5. Developing and implementing a script for communicating with the patient and/or developing materials that provide patients with information about their health and treatment in an understandable form, as well as providing an opportunity for patients to ask their questions.
6. Implementing a process to involve patients and their caregivers in medical care and treatment.
7. Consider involving a psychologist (if possible) or another person from the team who is ready to take on such a responsibility.
8. Involving staff into decision-making regarding their work and workplace.
9. Developing and implementing a feedback process from patients and caregivers.
10. Developing and implementing a feedback process from staff.

Hospital in Kazakhstan



Nika, 22 years
Insulin-dependent diabetes
On dialysis
Needs kidney transplantation

From Nika's childhood



No trust in doctors
No diet
No regimen

Result



Kidney failure

Dialog Nika and doctor



Building trust
Reasoning
Nika accepts diet
and regimen



Successful kidney
transplantation

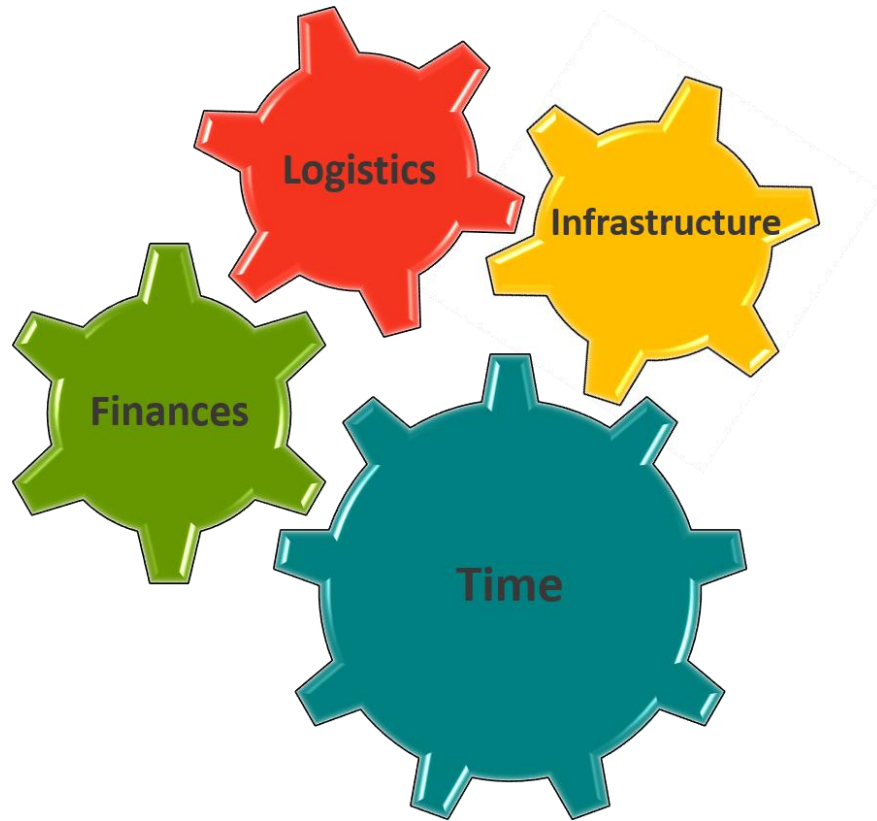
One year after



Nika is a law student

Resources

The ability to fully and correctly use the available resources: time, money, infrastructure, equipment, supplies etc.



- Strategic planning
- Competent management
- Prioritisation
- Flexible budgeting
- Efficient infrastructure

- 1.** Is the available funding in the hospital allocated correctly?
- 2.** Is there a procedure in place for the regular assessment of the strengths of departments in the hospital?
- 3.** Is there a procedure in place for the regular assessment of the weaknesses of departments in the hospital?
- 4.** Are the available equipment, infrastructure, and consumables used efficiently? (examples of inefficient use: equipment was purchased but is not used; a large stock of expired medications, etc.)
- 5.** Is the staff's time used efficiently? (examples of inefficient use: unnecessary meetings or other events)
- 6.** Is the workflow for staff organized efficiently? (examples of inefficient organization: lack of coordination with other departments, excessive patient waiting time, staff running between rooms)
- 7.** Are the staff's workstations organized efficiently?
- 8.** Are the patient treatment areas organized efficiently?
- 9.** Are there special tools or processes to estimate material resources (supplies, medications etc.)?
- 10.** Is internal logistics well organised (transportation of patients, medications, document flow)?

General

Using Waste Walk methodology (detection and elimination of processes, documents, and materials that reduce work efficiency).

Using 5S methodology (organizing and rationalizing workspaces).

Targeted (for No in the questionnaire)

1. Implementing agile approach to budgeting.

2,3. Implementing or providing additional training on an adapted SWOT analysis (for departments) or similar methods.

4,10. Implementing Waste Walk and 5S methodologies.

5. Together with the staff, revising the list of meetings and other activities.

6. Discussing the workflow with the staff (using a process map can be beneficial).

7,8. Using 5S methodology.

9. Implementing or additional training on using tools to estimate material resources.

Big hospital in India



Five women died from preventable causes:
Not enough assessments after delivery

Goal:
Better identification of complications

Directive to the nurses:
Do more assessment

Results:
↑↑↑ More assessments
...But women with complications were not being identified

Nurses: Too much work

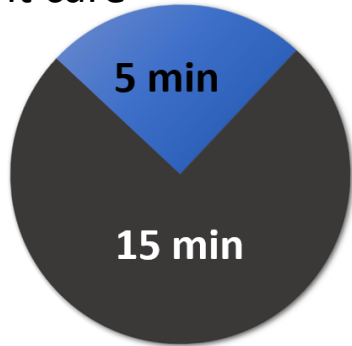


Can't reduce patient load
Can't recruit more nurses

Let's check nurses' activities

Assessment takes 20 min:

Patient care



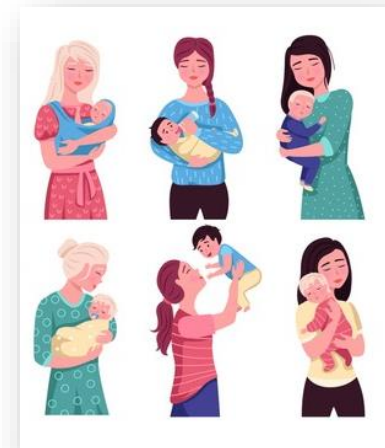
Looking for equipment and patients

New system of care



Observation room with all equipment for all patients in one place

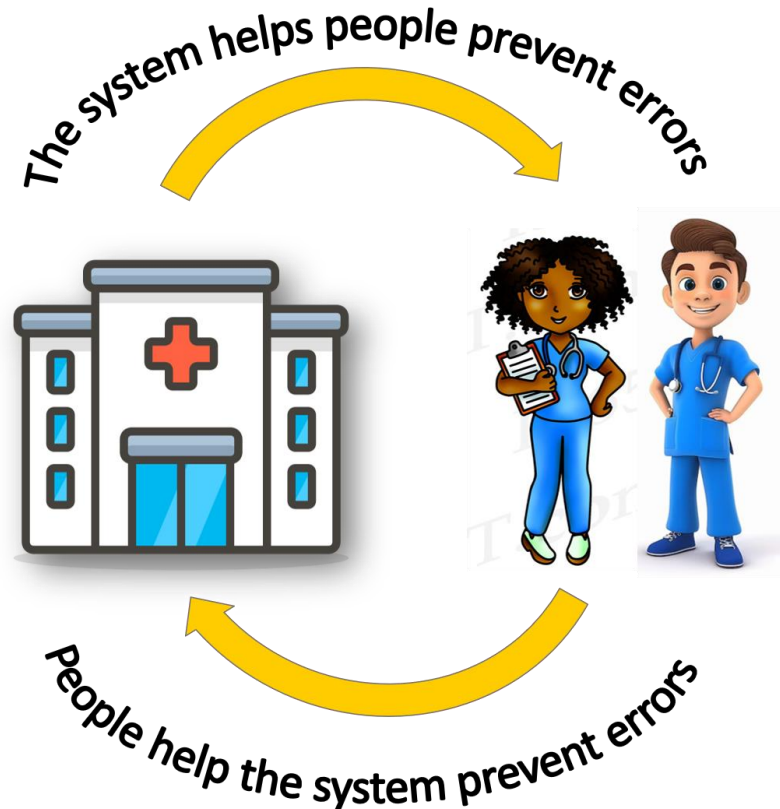
In 6 months



No maternal deaths

Expertise

A constantly maintained high level of knowledge and skills



- Professional skills
- Constant education
- Encouraging creativity and flexibility
- Learning from mistakes and from things that go right
- Quality culture

- 1.** Do job descriptions match the duties employees perform in reality?
- 2.** Do employees undergo a mandatory onboarding process upon employment?
- 3.** Does each medical staff member have an official supervisor?
- 4.** Does each employee have a personal development plan?
- 5.** Are all employees provided with the necessary and up-to-date documents for their work?
- 6.** Is there a procedure for regular performance evaluation of employees?
- 7.** Are there active channels for employees to submit suggestions and ideas?
- 8.** Does the hospital have internal career development programs for staff?
- 9.** Does the hospital have an incident management system?
- 10.** Is there a regular practice of assessing how units are functioning?

General

Focus on on-site education.

Implementing the principles of peer-to-peer education.

Implementing new ideas through early adopters.

Implementing mentoring and coaching approaches.

Targeted (for No in the questionnaire)

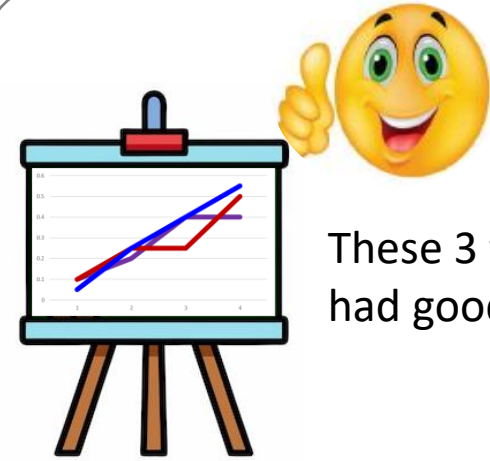
1. Analysing the job description compliance with the actual situation: is it possible to find candidates with qualifications that meet the requirements of the job description? If this is not possible, focusing on motivated candidates who are capable to learn; developing a training program to achieve the necessary requirements.
- 2,3. Developing the process of onboarding and further supervision of employees, taking into account the workload of the employee and the supervisor, as well as hospital needs.
4. Developing the principles of personalized learning and discussing them with employees.
5. Providing employees with the necessary protocols and guidelines, taking into account local languages.
6. Developing and implementing the regular performance review process.
7. Explaining the essence of Just culture to the management team.
8. Designing and implementing internal professional development programs. Revision of the HR strategy with a focus on internal recruitment.
9. Developing, implementing and explaining to all staff (not only to the management team) the essence of the incident management system and performing incident analysis training.
10. Working with unit staff to define 1-3 indicators that help the unit itself see what's working well and when it's time to change something.

Quality improvement training in India



Out of 13, only 3 facilities were interested

Let's focus on these three



These 3 facilities had good results

In 6 weeks: peer-to-peer 'learning session' for all facilities



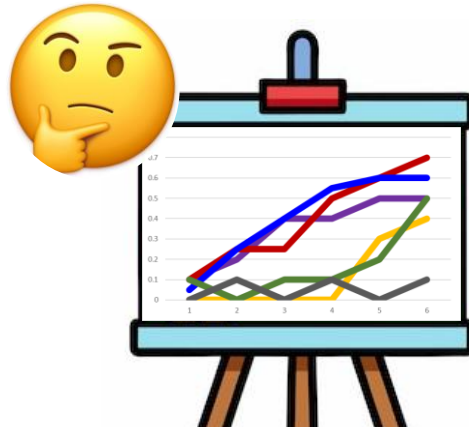
The 'others' were included



The 'influencers' were prepared

Discussion and learning
All facilities were supported

In 2 months: New meeting



5 out of 13 facilities made good progress

In 8 months

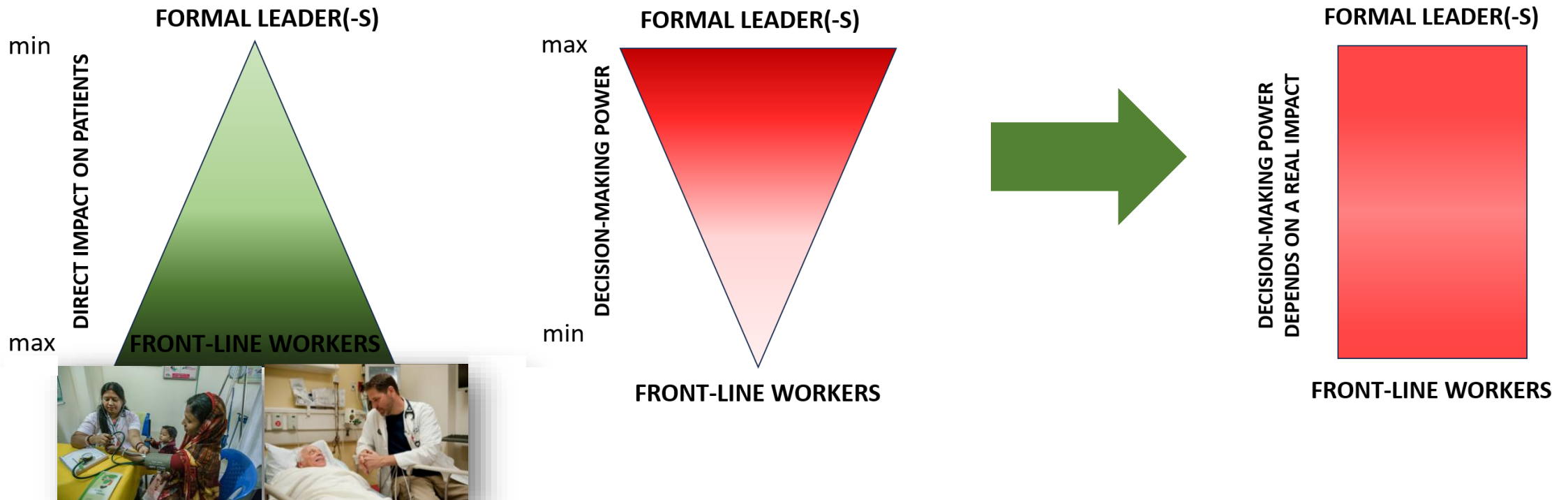


12 out of 13 facilities made good progress

Leadership

Decision-making power belongs to those who directly impact the process

- Focus on real leaders
- The process is managed by the one who has to do the work
- Shortening the path between the decision and the patient



1. Is there a person (or people) in the hospital whose informal influence helps the work, and whom the team unofficially relies on in daily matters?
2. Do employees have any ideas on how to improve the work of their department / the hospital as a whole?
3. Do the "rules on paper" match the actual workflows?
4. Are areas of personal responsibility and decision-making authority clearly defined and known to the staff?
5. Is it possible to implement a new idea "from bottom to up" in the hospital?
6. Is it easy for staff to reach the hospital management team?
7. Can employees make final decisions on matters within their job responsibilities?
8. Are the processes of interaction between clinical and administrative departments well-established?
9. Is systematic interaction between departments part of the standard practice in the hospital?
10. Is consultation with a colleague mandatory when an employee has doubts regarding patient treatment or care?

Identifying informal leaders.

Encouraging seeking advice from colleagues.

Encouraging teamwork.

Implementing “Teach, don’t blame” principle.

Training front-line workers on the most important aspects of decision-making and problem solving in the field.

Implementing “An empty chair” principle (in every meeting, there is an empty chair that represents the hospital. Everyone can seat on this chair and become the hospital voice).

Observing actual (not just documented) work processes, encouraging and disseminating best practices throughout the hospital.

Redefining the role of the leadership: formal leaders should be moderators, not commanders.

Hospital in Russia



A lot of patient falls



Guidelines
Education of nurses
Education of patients



Did not help

Why?



Not enough nurses

Cooperation between nurses



The nurse on duty decides individually whether a 24-hour medical post and an additional nurse are needed



The number of falls decreased significantly

Environment

Understanding and productive relationships with the external environment



- Understanding which external circumstances can be influenced and which should be taken into account
- Established relationships with other actors
- Established relationships with communities

1. Does the hospital conduct regular assessments of external threats?
2. Does the hospital conduct regular assessments of external opportunities that could be useful in its work?
3. Does the hospital have community engagement/outreach programs?
4. Is there a system for the hospital to be alerted about regional emergencies (disease outbreaks, disasters, etc.)?
5. Does the hospital take systematic measures to build public trust and awareness (public reports, work with the media, etc.)?
6. Does the hospital have channels for cooperation with volunteer organizations or the public to mobilize their assistance in emergencies?
7. Does the hospital have a communication system with other hospitals (established referral pathways)?
8. Does the hospital have agreements with local authorities ensuring support in emergency situations?
9. Does the hospital have established communication channels with emergency services to coordinate actions in case of crises?
10. Are there agreed-upon mechanisms for supplying the hospital by the government or other services during emergencies or prolonged crises?

General

Regular assessment of external threats and favourable circumstances. Integrating the results of this assessment into strategic planning.

Developing contingency plans for various types of hazard and disaster.

Networking and maintaining sustainable connections with local communities and other actors.

Targeted (for No in the questionnaire)

1,2. Implementing or additional training on SWOT analysis or on similar techniques.

3,5,6. Advocacy, implementing public events (specific events depend on local settings). Participation in social networks (if any), notification through local communication channels, providing representatives of communities with the opportunity to directly communicate with the hospital team.

4,9. Establishing communication channels with emergency response services. Developing joint emergency action plans.

7. Networking with other hospitals and actors in the region. Establishing communication channels that ensure the transfer of patients including their proper identification and communicating the most important information about their state.

8. Considering relationships with local authorities during strategic and contingency planning.

10. Developing a backup plan in case of supply disruptions.

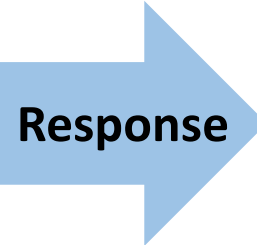
An earthquake in New Zealand, widespread destruction



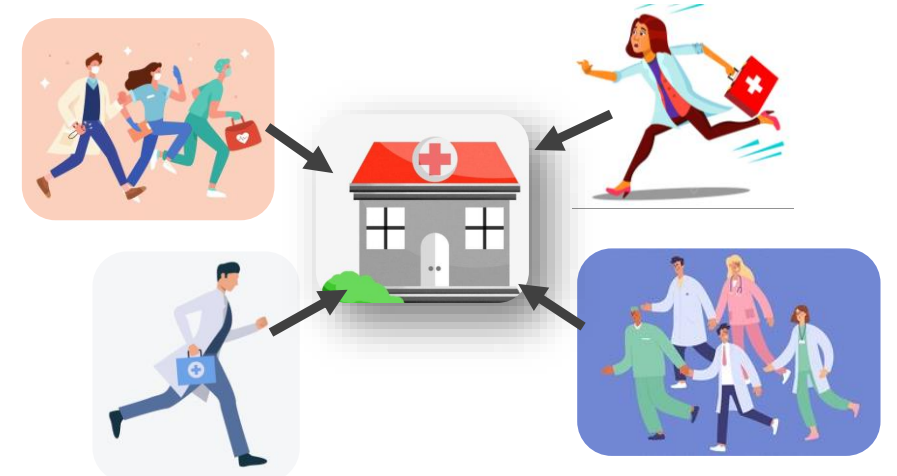
The only regional acute hospital was affected



Severe shaking
Power lost immediately
Roads around severely damaged
Communication systems down



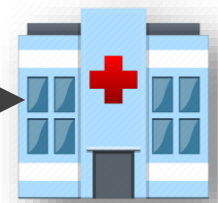
Other medics came to help



Proper coordination and management



During the next 24 h:
transfer patients to other cities



Proper communication

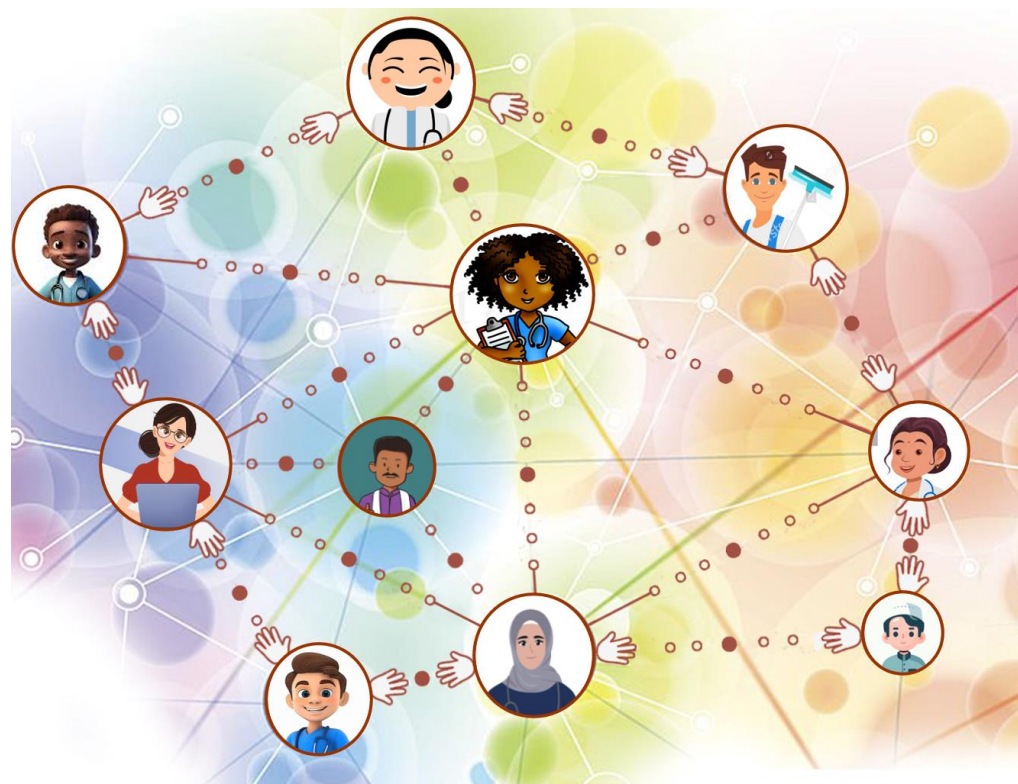


Emergency care response helped reduce mortality and the burden of injury

Communication

Established information transmission systems

- Information about a patient
- Information between staff
- Urgent information



Team culture

- Just culture
- Net communications and decision-making
- Code of conduct

A permanently functioning information transmission system:

1. Is a patient double-identification system in place at all stages of their stay in the hospital?
2. Is there a clear protocol for patient handover between departments/medical staff?
3. Are there regulated channels (chats, logs) for assigning tasks and transferring work information?
4. Is there an established algorithm for rapid exchange of urgent information between departments and employees?
5. Is regular backup of the most critical information performed at the department level?

Team culture:

6. Does the hospital have a conflict resolution procedure?
7. Does the hospital have an error reporting process that ensures a fair review, not punishment?
8. In the opinion of staff, should others be informed about a colleague's mistake?
9. Can employees express their opinion to any hospital staff member, regardless of their seniority?
10. Is best practice and positive experience shared throughout the hospital via mechanisms such as awards and discussing successes at meetings?

General

Changing the vertical hierarchy to the network communication and decision-making.

Implementing and strengthening Just culture.

Implementing Safety II principles (including analysing “things that go right” into incident management; learning from the everyday clinical work and supporting successful lessons in practice).

Targeted (for No in the questionnaire)

1. Developing and implementing a unified patient identification system (unique identifier numbers, or double identification (full name + birth date), or others).

2,3,4. Developing and implementing information transmission channels.

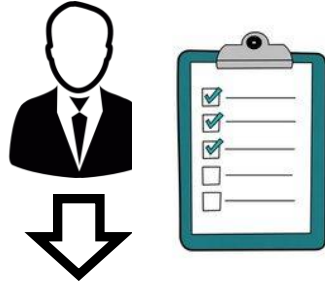
5. Regular backups of the most important hospital information.

6. Developing and implementing the process of conflict resolution. Ensuring impartiality from the leadership.

7,8,9. Implementing and strengthening Just culture.

10. Implementing Safety II principles.

Emergency care pathway in UK



Goal: Reduce the time of handover from paramedics to clinicians
Formalised procedure
Structured checklist

A 'secret second handover' between paramedics and nurses: they informally discussed each patient



This should not take place according to the official protocols

It's duplication
This delays the patient flow and the ambulance

I care about the patient
Formal checklist is not enough
We can miss important information



I care about the patient
I need more complete story
It's important for the safety of the patient

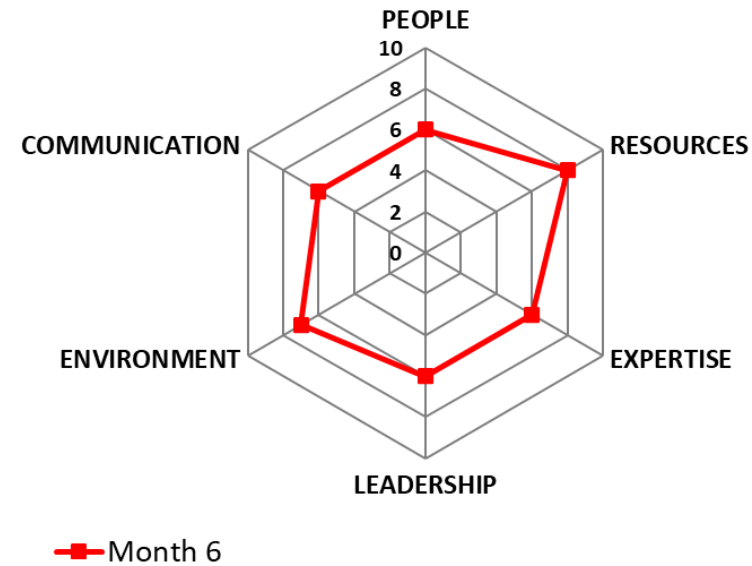
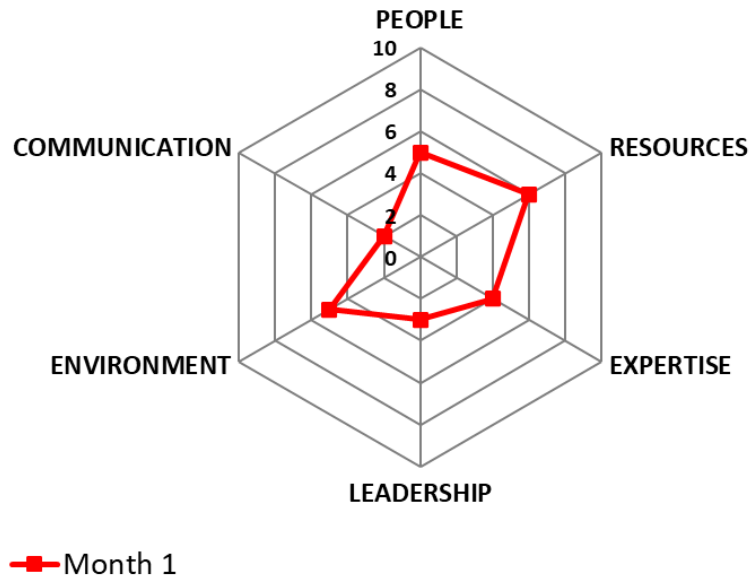
Agreement

Paramedics decide on an additional handover individually based on their experience and depending on the specific state of the patient

Analysis

The overall picture of hospital resilience can be presented as a radar chart.

To obtain a digital value for each of the blocks (People, Resources, Expertise, Leadership, Environment, and Communication), sum up the number of "Yes" in each individual questionnaire, and then calculate the average for all the questionnaires within the block.



Constructed example

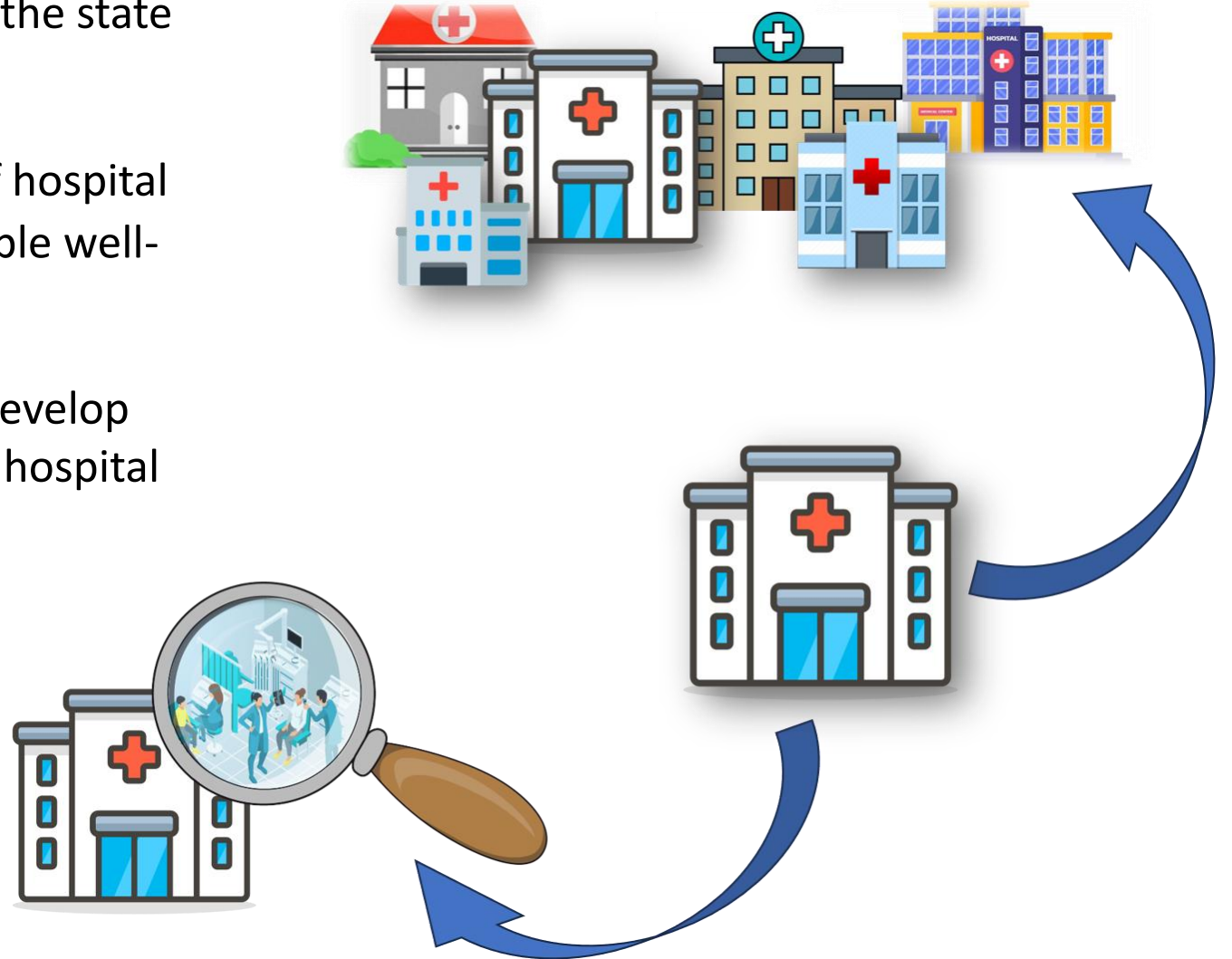
Important! There is no “bad” hospital. There is only a starting point and understanding in which direction to move on.

Conclusion

The results of the blocks analysis help evaluate the state of the hospital system as a whole.

The blocks are universal. They form the basis of hospital resilience and are necessary to build a sustainable well-functioning hospital system.

After strengthening this basis, it is possible to develop further, both at more detailed levels within the hospital and at other levels of health systems.



References

- Bentley S.K., McNamara S., Meguerdichian M. et al. Debrief it all: a tool for inclusion of Safety-II. *Adv Simul (Lond)*. 2021. 6(1):9.
- Berntsen G, Chetty M, Ako-Egbe L, Yaron S, Phan Thanh P, Castro I, Curran C, et al. Person-Centred Care Systems: From Theory to Practice. A White paper for ISQUA. 2022.
- Berryman A. A., Kindlmann P. Population systems. A general introduction. N. Y.: Springer, 2008.
- Coaching for quality improvement: coaching guide. WHO. Regional Office for South-East Asia. 2018.
- Erik Hollnagel. Safety-II as a management principle implications for managing and developing an organization. 2020.
- Frederic Laloux. *Reinventing Organizations*. 2016.
- G. P. Cimellaro, M. Malavisi and S. Mahin. Factor Analysis to Evaluate Hospital Resilience. *ASCE-ASME J. Risk Uncertainty Eng. Syst., Part A: Civ. Eng.*, 2018, 4(1): 04018002.
- Kazakhstan and Russia case studies: Dr. Aizhan Azerbayeva, Accreditation Center for Quality in Healthcare (ACQH), personal communication.
- Leonard L. Berry, Kent D. Seltman. *Management Lessons from Mayo Clinic: Inside One of the World's Most Admired Service Organizations*. McGraw Hill Professional. 2008.
- M.A. Sujan, P. Spurgeon and M.W. Cooke. Translating Tensions into Safe Practices Through Dynamic Trade-offs: The Secret Second Handover. In: Braithwaite et al. *Resilience of Everyday Clinical Work*, Ashgate, 2015.
- M.W. Ardagh, S.K. Richardson, V. Robinson, et al. The initial health-system response to the earthquake in Christchurch, New Zealand, in February, 2011. *Lancet*. 2012. 379(9831):2109-15.
- Manual for Implementation of 5S in Hospital Setting. TQM Unit, Hospital Services Management, DGHS. 2015.
- Nigel Livesley. Why standards or training do not fix all problems: How to identify and improve system problems. ISQua Webinar Series. <https://www.youtube.com/watch?v=D7dsm6ymau4&t=3s>
- Nigel Livesley. Institutional support for continual improvement. ISQua Webinar Series. <https://www.youtube.com/watch?v=rvrnFtuM2Hg>.
- Planetree International, Inc. *Person-Centered Care Certification® Manual*. 2020.
- Richard Greenhill. Yellowbelt in continuous quality improvement. ISQua Webinar Series. https://www.youtube.com/watch?v=q_pJoDQgC_Y.
- Strengthening hospital resilience in the Eastern Mediterranean Region: a policy paper on facility-level preparedness / World Health Organization. Regional Office for the Eastern Mediterranean. 2022.
- Sujan M.A., Huang H. and Braithwaite J. Learning from incidents in health care : critique from a Safety-II perspective. *Safety Science*. 2016.