IMPACT HTA

Improved methods and actionable tools for enhancing HTA

WP8: Analysis of economic evaluation methods for hospital-based assessment - *Questionnaire*

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INTRODUCTION

Hospitals in Europe are evolving and their role in healthcare systems is changing over time as they are called to face:

- higher expectations of patients and stakeholders;
- an increase in chronic conditions and in multi-pathological patients;
- technological innovation and ethical queries;
- limited or even decreasing (financial, human etc.) resources;
- increased expectations on their accountability.

Moreover, hospital performance is largely dependent on contextual/organizational factors and although a number of managerial tools are already available to appraise systematically both clinical and non-clinical outcomes, there is little evidence on the impact that contextual organizational variables may exert on overall hospital performance. Furthermore, outcomes are increasingly determined by the use of innovative technologies that – however - may be used in heterogeneous ways across different organizations.

The main aim of this project is to address and understand the following causal relationships:

- the direct relationship existing between contextual organizational/managerial factors and hospital performance. Although vast attention has been dedicated to organizational and managerial trends in healthcare, it is still unclear how these are connected to performance;
- the effect of organizational/managerial factors on the capability of hospitals to fully employ health technologies affecting, in turn, hospital performance.

This survey is structured to support face-to-face interviews with healthcare managers and physicians in leading hospitals in Europe. The survey is structured in 4 areas and 10 sections, as follows:

- Area 1. Description of the hospital (Section 1)
- Area 2. Organizational and managerial features of the hospital
    - Organizational structure (Section 2)
    - Managerial accounting tools (Section 3)
    - Human Resource Management tools (Section 4)
    - Communication tools (Section 5)
    - Technologies' uptake processes (Section 6)
- Area 3. Producing value through technology
    - Selection of technologies and new routines (Section 7)
    - Enablers and barriers to technology's full implementation (Section 8)
    - Perceived outcomes of technologies' use (Section 9)
- Area 4 Hospital performance (Section 10)

AREA 1 Description of the hospital

Section 1 *(please provide organizational chart)*

Name of respondent	
Current profession and position within hospital	
Name of hospital	
City, Country	
Institutional Profile	□ general □ specialistic □ focused factory □ other (please specify)……
Accademic / Teaching (yes/no)	
Research (yes/no)	
Ownership of hospital	□ Public □ Private not-for-profit □ Private for profit □ Other (specify)_____
Stand alone (yes / no)	
Age of Structure (N of years)	
Number of staffed beds	
Emergency unit (yes/no)	
N. of employees	
N. of Inpatient admissions (per year)	
N. of outpatients visits (per year)	
Role in network	□ Hub □ Spoke □ Hub AND spoke depending on activity □ Does not belong to a hub and spoke network □ Don't know
List of specialties	
Further information	

AREA 2: ORGANIZATIONAL AND MANAGERIAL FEATURES OF THE HOSPITAL

SECTION 2 - Organizational structure

1. Which of the following architectural types best describes your hospital?
   - □ Pavilion hospital (separated buildings which are not directly connected to each other)
   - □ Single-block hospital (one single building)
   - □ Multi-block hospital (more than one building, internally connected)
   - □ Other (please specify)

2. How is clinical care organized within your hospital (e.g. Departments (aggregation criteria), Institutes, Vertical approach vs horizontal approach)?

3. Which kind of patient pooling approach(es) do you adopt in order to group patients within ward units?
   - ☐ Based on clinical specialties
   - ☐ Based on intensity and complexity of care
   - ☐ Based on the age/sex of patients
   - ☐ Based on clinical processes
   - ☐ Mixed approach (please describe)
   - ☐ Other (please describe)

   Comments:

4. Does your hospital organize (at least part of) its activities on the basis of different intensity of care levels (applying the **progressive patient care** logic)?

   - ☐ Yes
   - ☐ No

   If yes, please provide a list and description of the different progressive levels of care codified in your hospital, as well as listing the names of the **organizational platforms** belonging to each level? (*If necessary provide example in Appendix 1*)

Level	Definition of level	Names of Organizational platforms

Comments:

5. Does your hospital organize (at least part of its) patient admissions on the basis of the expected length of stay?
   - ☐ Yes (please explain)
   - ☐ No

   Please explain:

6. Does your hospital have and use a “pool beds” area?

☐ Yes (please explain)

☐ No

Please explain:

7. Have physical layout interventions been implemented recently in order to optimize and improve flows throughout the entire hospital system?

☐ Yes

☐ No

If yes, please specify which of the following solutions have been adopted:

☐ Satellite storage inventory

☐ Discharge Room

☐ Buffer areas

☐ Physical separation of patient flows (please specify) _____

☐ Others (please specify) _____

8. *(If applicable)* How are resources (human, financial, etc.) and responsibilities assigned and divided between Clinical Directorates and Progressive Care Settings?

9. Does your hospital adopt separate clinical pathways and itineraries for specific patients’ categories (please select and describe)?

□ Emergency Pathway

□ Orthogeriatric pathway,

□ Mother and child pathway

□ Cancer pathway

□ Other (please specify)

Comments:

10. How would you quantify the extent to which your hospital implements a **patient-centered approach**?

1	2	3	4	5
Not at all	To a limited extent	To a reasonable extent	To a high extent	Completely

11. Are clinical activities organized on the basis of a "vertical-specialty" approach or of a "horizontal-process" one?

1	2	3	4	5
Completely vertical/specialty	More vertical than horizontal	Half and half	More horizontal than vertical	Completely horizontal/process

12. What is the percentages of diseases treated (out of the total number of diseases treated) for which clinical pathways have been defined and are regularly implemented?

1	2	3	4	5
0%	1-33%	33-66%	66-99%	100%

13. What is the percentages of patients treated who are involved in clinical pathways?

1	2	3	4	5
0%	1-33%	33-66%	66-99%	100%

14. How are resources (human, financial, etc.) and responsibilities assigned and divided between Clinical Directorates and Clinical Pathways?

15. Which horizontal coordination mechanisms are adopted? *(In reference to processes, people, ICT & technologies)*

16. Which indicators are *regularly* assessed for the evaluation of the three most implemented clinical pathways' (e.g. related to health outcomes, effectiveness, efficiency)?

17. Which activities and tools are used regularly to swiftly detect critical aspects of the three most implemented clinical pathways (e.g. patient satisfaction indicators; bottom-up communication flows; detection of errors; audits)?

18. What activities are carried out in order to guarantee the implementation of newly designed **transitional care models** (within hospitals and across healthcare settings)? (e.g. appointment of rehabilitation *liason* nurse)

19. Does there exist a person/office in charge of the organization's patient-centerdness?

    ☐ Yes (please specify who fulfills the role, the tasks/responsibilities assigned, and all actors involved)

    ☐ No

SECTION 3 – Managerial accounting tools

Management Control Systems' (MCSs) and Performance Management Systems' (PMSs) purposes

20. Generally speaking, are Management Control Systems (MCSs) and Performance Measurement Systems (PMSs) supporting a patient-centered approach?

1	2	3	4	5
Not at all	To a limited extent	To a reasonable extent	To a high extent	Completely

21. More in particular, are MCSs and PMSs supporting the evaluation of specific areas of performances (e.g. full cycles of care, clinical pathways, etc.) associated with the development of a patient-centered approach?
    - ☐ Yes (please explain)
    - ☐ No

    Please explain:

Cost accounting tools

22. Which cost management tools are used within your organization (i.e., departmental costing, activity-based costing, time driven activity-based costing, standard costing, actual costing, normal costing)?

Responsibility centers, budgeting, and reporting systems

23. How many responsibility centers are there within your organization *(please describe)*?

24. For each type of responsibility center, please indicate which responsibilities are assigned to it among the ones listed below, and specify which main performance measures are used within the budgeting and reporting systems.

Responsibility Center (typologies)	1	2	3	4	5	6	7	8	9
Financial responsibility for revenues (e.g. net revenues)									

Financial responsibility for costs (e.g. drug costs, direct labor costs)									
Financial responsibility for expenses									
Financial responsibility for profit (e.g. contribution margin, operating margin)									
Financial responsibility for investment (e.g. return on investment)									
Non-financial responsibility for efficiency and productivity (e.g. resource utilization rate, average length of stay (total and preoperative/postoperative), throughput time)									
Non-financial responsibility for process delivery (e.g. waiting time, delays, sessions overruns, activity variability, inappropriateness of care settings (due to shortage of beds), cases cancelled)									
Non-financial responsibility for quality (e.g. patient satisfaction, in terms of patient perception of care and response time; patient satisfaction, in terms of patient comfort)									
Non-financial responsibility for outcome (e.g. mortality rates)									
Other responsibilities (please specify)									

25. Have any co-responsibilities or overlapping of responsibilities been detected among different responsibility centres and, if yes, how have they been dealt with?

26. Who are the budget holders within your organization? (e.g. Head of Institute; Head of Clinical Directorate)

27. Is the budgeting a participative process within your organization?
    - ☐ Yes
    - ☐ No

    Please explain:

28. What is the time horizon(s) of the budgeting process within your Organization?

29. What is the budget period(s) within your organization?

30. Do you breakdown your annual budgets into quarterly, monthly, and/or weekly budgets?
    - ☐ Yes (please specify)
    - ☐ No

31. Do you use continuous or rolling budgets within your organization?
    - ☐ Yes
    - ☐ No

32. How often do managerial conflicts emerge during the management control process and how are they managed?

1	2	3	4	5
Never	Rarely	Sometimes	Frequently	Always

Please explain:

SECTION 4 – Human Resource Management tools

33. Please describe how HR's selection and allocation are carried out and by whom within your organization (for physicians, nurses, other staff).

34. Please describe how HR's evaluation is carried out within your organization (for physicians, nurses, other staff).

35. In particular, please specify what "position evaluation" activities are carried out (for physicians, nurses, other staff) and to what extent within the organization (e.g. Job description, job analysis, job ranking, score and factor comparison methods).

36. Please specify what "people evaluation" activities are carried out (for physicians, nurses, other staff) and to what extent within the organizations (e.g. assessment centre, 360° evaluation, etc.).

37. What activities are implemented in order to define and map competencies and skills (for physicians, nurses, other staff)? Do you use a "dictionary"? *(If yes, please specify in which ways it is used and in reference to which professional figures)*

38. Are clear role profiles designed within your organization and how are they used (e.g. to trace training pathways, career pathways, compensation systems)? *(Please specify the figures involved and describe)*
    - ☐ Yes
    - ☐ No

39. Does your organization perform activities aimed at evaluating HR's potential? *(Please explain and specify the figures involved)*

40. Please specify what "performance evaluation" activities are carried out (for physicians, nurses, other staff), and how they are used within the organization (e.g. comparison method, forced distribution of performance, etc.).

41. a. Does the organization implement a Management by Objectives (MbO) approach, by defining clear and measurable individual/team objectives and targets? *(If yes, please describe it, specifying which roles are involved)*

    b. To which facets of improvement are they related? (e.g. process time, cost, quality, patient satisfaction)

42. a. Does your organization implement a Balanced Scorecard (BSC) or similar methods to evaluate key performance areas and indicators *(If yes, please describe it, specifying which roles are involved)*

    b. To which facets of improvement are they related? (e.g. process time, cost, quality, patient satisfaction)

43. What compensation policies and tools does your organization adopt (e.g. bonuses, gain sharing, profit sharing, fringe benefits, etc.)? *(Please specify the figures involved)*

44. Do you clearly link career pathways to new responsibilities and roles related to the patient-centred approach? *(Please explain and provide examples, specifying whether financial bonuses are also related to such career pathways)*

45. What training strategies and activities are carried out in the organization in order to ensure the presence of coordination capabilities linked to the patient-centred approach (e.g. courses, lectures, networking, shadowing, coaching, mentoring)? *(Please, specify roles involved)*

46. Which strategies and procedures do you adopt in order to retain staff (e.g. for nurses: flexible working and work/life balance; opportunities for role expansion and more autonomy in clinical decision making)? *(Please, specify roles involved)*

47. Within your organization, has there ever been any issue in terms of unclear assignments of responsibilities to new professional roles (e.g. overlapping of responsibilities among roles)? *(If yes, please explain and explain how such conflict has been managed)*

48. Could you please list any new role connected to the patient-centered approach (e.g. nurse coordinators, tutor physicians, bed managers/facilitators, admission coordinators, operating theatre coordinators), specifying their profile and responsibilities?

Name of role	**Profile and responsibilities**

SECTION 5 – Communication tools

49. To what extent is the general communication flow within your hospital carried out through ICT tools?

1	2	3	4	5
Not at all	To a limited extent	To a reasonable extent	To a high extent	Completely

50. Which ICT tools are regularly used within your organization?
    - ☐ electronic health records
    - ☐ visual mapping technologies
    - ☐ shared platforms
    - ☐ database direct access
    - ☐ web services
    - ☐ applications for patients
    - ☐ others *(please specify)*

51. How are each of the following patient information collected and exchanged?

	Only through paper registers	Through a combination of paper registers and ICT tools	Only through ICT tools
diagnosis and clinical problems			
medical images			
lab results			
Discharge notes			
Patients' procedures			
others (please specify)			

52. How are each of the following managerial /administrative data collected and exchanged?

	Only through paper registers	Through a combination of paper registers and ICT tools	Only through ICT tools
Financial data			
Shifts and other HRM information			
Patient flows			
Logistics (materials)			
Administrative and managerial procedures			
Clinical procedures			
Clinical guidelines			
Clinical research			
others (please specify)			

53. Which roles or actors are permanently involved in communication and coordination activities through ICT tools (*please explain*)?

54. At which level are the ICT tools adopted fully integrated and coordinated *(please explain)*?

1	2	3	4	5
Clinical Ward level	Departmental level	Hospital level	Regional level	National level

55. Which techniques and tools are adopted in order to improve safety and reduce errors in communication flows (e.g. standardization of templates, audit activities, checklists, double checking)?

SECTION 6- Technologies' uptake processes

56. How and by whom are technology-innovation priorities set within your organization?

57. Within your hospital, are there any HTA activities or initiatives?
    - ☐ Yes
    - ☐ No (please skip rest of this section)

58. Does your hospital have a Hospital-based HTA Unit?
    - ☐ Yes
    - ☐ No (please skip question 59)

59. How would you define the Hospital-based HTA Unit?

    - ☐ An Independent group
    - ☐ An Integrated-essential HB-HTA unit
    - ☐ A Stand-alone HB-HTA unit
    - ☐ An Integrated-specialised HB-HTA unit[1]

60. Please indicate the percentage of total capital budget in the hospital of the last 3 years for renewal, upgrading and innovation of medical equipment[2]:

Medical Equipment	% of Total Capital Budget		
	2016	2017	2018
Renewal[3]			

[1] 4 organisational models for HB-HTA units have been identified: 1. Independent group — these units operate within the hospital as an "independent group" that provides support for management decisions in a fairly informal way. 2. Integrated-essential HB-HTA unit — these are units of small size, with a limited number of staff members, but who are able to involve many other actors and "allies" in their activities. 3. Stand-alone HB-HTA units — units with usually highly formalised and specialised procedures, acting internally within hospitals and not strongly influenced by the national or regional HTA organisations (currently the most frequent model in Europe). 4. Integrated-specialised HB-HTA units — the functions of the HB-HTA unit are influenced by formal collaboration with the national or regional HTA agency. In general, the involvement of HB-HTA units in the technology adoption process is considered advisable and the HTA-based recommendations are closely followed by hospital decision-makers.
http://www.adhophta.eu/sites/files/adhophta/media/adhophta_handbook_website.pdf

[2] Please, intend as "medical equipment" those medical technologies introduced in your hospital which are subjected to inventory and to amortization schedule.

[3] Renewal: reconversion of existing medical equipment in the hospital.

[4] Upgrading: replacement of an older model of medical equipment with a newer model of the same technology.

Upgrading[4]			
Innovation[5]			

61. Which professional figure(s) expresses the needs, performs an assessment and takes the final decision in reference to the adoption/purchase of medical equipment/medical devices/drugs/clinical procedures/ICT? *(Please describe procedures)*

62. Please indicate the annual expenditure (in Euros) for medical equipment/medical devices/drugs/clinical procedures/ICT) within your organization.

63. What is the main mission of HTA activities or initiatives in your hospital? (*It is possible to provide multiple answers*)
    - ☐ To inform clinical practice
    - ☐ To support managerial decision making process
    - ☐ Other (please specify)

    Comments:

64. Please rank from 1 to 8 the type of informative sources that affect decisions about the uptake of technologies within your hospital, assuming 1 as the most relevant and 8 as the less relevant source of information:

Source of Information	Rank (1-8)
Internal Clinical Opinion/Advice	
External Clinical Opinion Leader	
Scientific Literature	
Report made by the HTA Unit in the hospital	

[5] Innovation: investment in new medical equipment not previously adopted in the hospital.

HTA reports by National or Regional Agencies	
Guidelines of Scientific Societies	
National/Regional Guidelines/Recommendations	
Other (please specify_____)	

65. At the beginning of the decision-making process about the uptake of a technology, is a clinical, strategic and organizational needs assessment systematically carried out *(please specify for different typologies of technology)*?
    - ☐ Yes
    - ☐ No
    - ☐ I don't know

Comments:

66. In synthesis, please describe the uptake process of technologies in your hospital, completing the information previously provided with further comments or details and assessing how "binding" the HB-HTA unit's advice is *(please specify for different typologies of technology)*.

AREA 3 PRODUCING VALUE THROUGH TECHNOLOGY

Section 7 - Selection of technologies and new routines

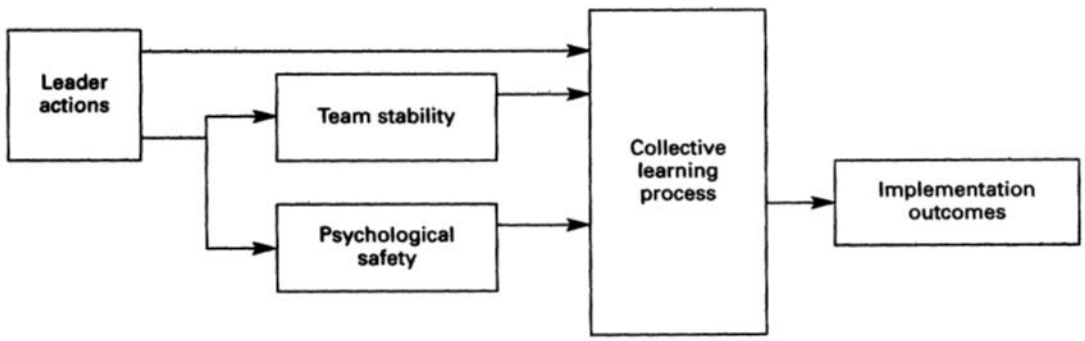
67. Please list the names of the three possibly most relevant (in terms of expenditure) technologies regularly used within your hospital for each of the following typologies:
    - Medical equipment:
    - Medical device:
    - Drugs:
    - Medical or surgical procedures:
    - Support systems (e.g. ICT tools):

68. In reference to the categories of technologies listed above, to what extent would you consider your hospital a pioneer in terms of technological innovation within your country (please explain)?

    The following questions of Area 3 are referred to a medical equipment which covers a major role in the hospital and exerts an important impact on the overall clinical activity (to be selected with respondent- possibly TAVI and/or DVR)

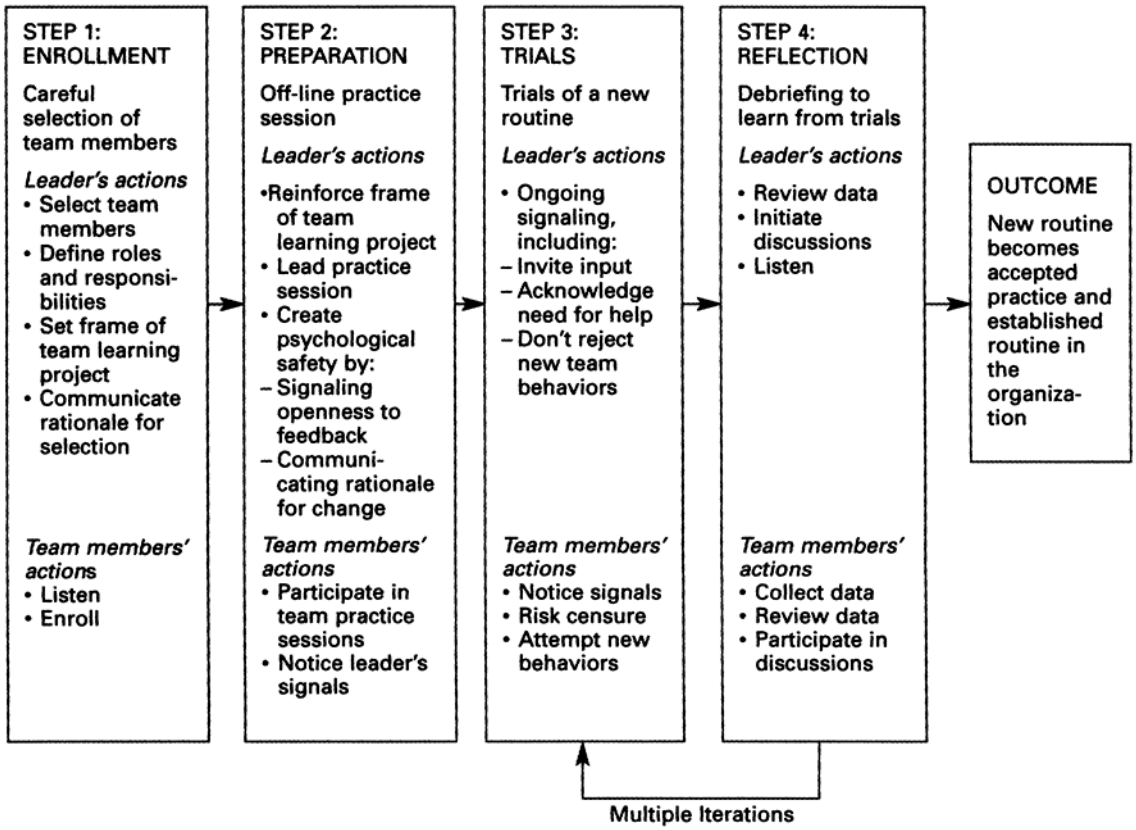
69. In reference to Edmonson et al.'s framework (see fig. 1), please explain if/how your hospital addresses each of the following dimensions and if/how these (positively or negatively) affect the technology under analysis.

Figure 1. Relationships between constructs in the technology implementation process.



70. In reference to Edmonson et al. please describe how your hospital manages each of the following steps envisaged by the process model for establishing new technological routines (see fig. 2).

Figure 2. A process model for establishing new technological routines.



Section 8 - Enablers and barriers to technology's full implementation

71. Please describe the major barriers encountered in daily activities that hinder an optimal use of the technology, specifying to what extent they are detrimental.

72. Please describe and explain the role, if any, of each of the following dimensions in enabling/hindering an optimal use of the technology in daily practice:

- existing routines
- status relationships
- structural arrangements
- business strategies
- ideology
- organizational culture
- control mechanisms

- standard operating procedures
- division of labor
- expertise
- communication patterns
- government regulation
- competitive forces
- vendor strategies
- professional norms
- state of knowledge about technology
- socio-economic conditions
- Other…

73. In reference to the technology and in light of what explained above, would you define the barriers to its full implementation as:

☐ Nonexistent, the technology is always used optimally
☐ Limited
☐ Relatively frequent and relatively high
☐ Very frequent and very high

Section 9 - Perceived outcomes of technologies' use

74. Please provide an assessment of the outcome of the technology's use with reference to the following dimensions (please provide an estimated % of "success" and explain/describe):

- Safety
- Appropriateness
- Clinical Effectiveness
- Efficiency
- Accessibility
- Cost or Expenditure
- Continuity of care (PCC)
- Other (please specify and explain)

AREA 4 HOSPITAL PERFORMANCE

Section 10 Hospital Performance

75. Please provide an overall assessment of your hospital's performance with reference to the following dimensions and compared to other major hospitals within your country (please specify whether your hospital lies below, on, or above the average positioning and explain/describe):

- Safety
- Appropriateness
- Clinical Effectiveness
- Efficiency
- Accessibility/Equity
- Financial sustainability
- Cost or Expenditure
- Employee satisfaction
- Patient Experience / Satisfaction
- Staff competencies
- Development and innovation
- System integration
- Continuity of care (PCC) – waiting times; % patients with assisted hospital discharge; % patients assigned to a case manager
- Other (please specify)

76. For each of the previous dimensions, please explain which main enabling/hindering organizational/contextual factors have led to such positioning.

GLOSSARY

CAREER PATHWAYS: an organized approach to career planning. They describe the route and approach that can be taken by someone wishing to develop their career within a given profession. They can be both vertical and diagonal (in terms of a promotion), or horizontal (in terms of a sideways development move). Career pathways help people identify the career options that are available to them and illustrate the knowledge and skills people need to equip themselves for different roles.

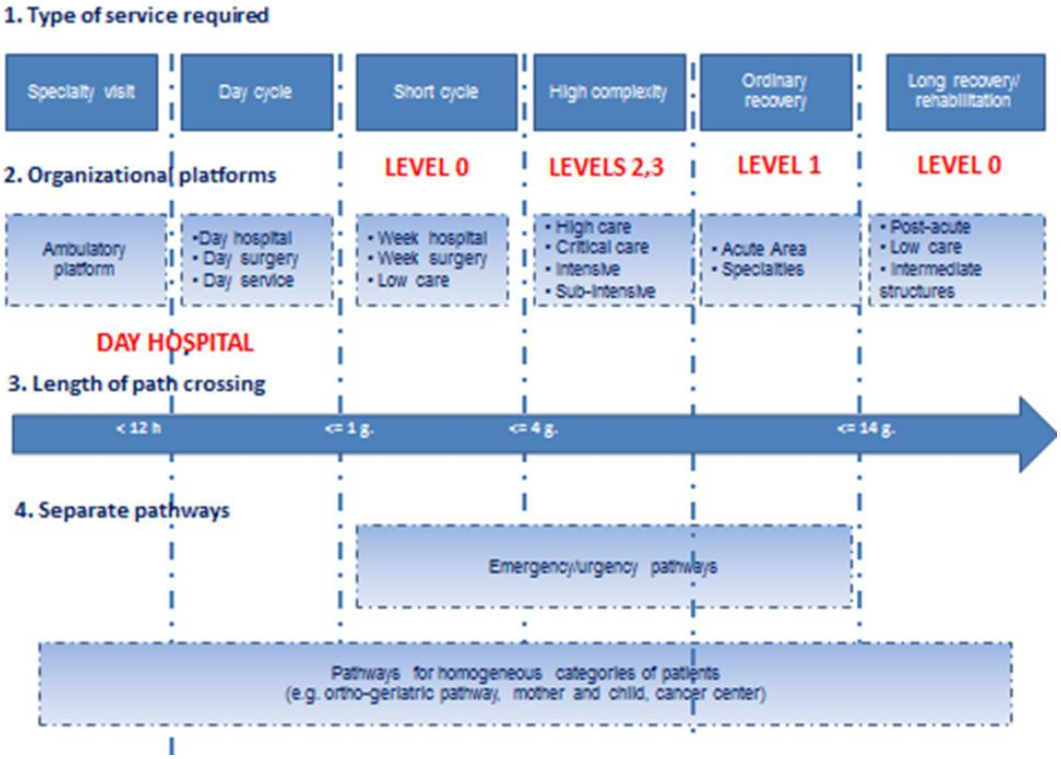
ORGANIZATIONAL PLATFORMS: Physical platforms within an organization, with dedicated spaces and resources

PATIENT CENTERED APPROACH: this approach aims at reshaping hospital care delivery processes around the needs of patients and away from the traditional physicians-centered view, in such a way that all (human, technical, etc.) resources merge into the pathway when needed by the patient and no longer must the patient “search” for what he/she needs.

TRANSITIONAL CARE MODEL: it addresses the negative effects associated with common breakdowns in care when patients with complex needs transit from an acute care setting to their home or other care setting, and prepares patients and family caregivers to more effectively manage changes in health.

VISUAL MANAGEMENT: a technique used to assess the current status of a process at a glance and to gain more control over the workflow, enabling professionals to identify problems as they arise and to make informed decisions quickly

Appendix 1.


1. Type of service required
Specialty visit
Day cycle
Short cycle
High complexity
Ordinary recovery
Long recovery/ rehabilitation
2. Organizational platforms
LEVEL 0
LEVELS 2,3
LEVEL 1
LEVEL 0
Ambulatory platform
•Day hospital
• Day surgery
• Day service
• Week hospital
• Week surgery
• Low care
• High care
• Critical care
• Intensive
• Sub-Intensive
• Acute Area
• Specialties
• Post-acute
• Low care
• Intermediate structures
DAY HOSPITAL
3. Length of path crossing
< 12 h
<= 1 g.
<= 4 g.
<= 14 g.
4. Separate pathways
Emergency/urgency pathways
Pathways for homogeneous categories of patients
(e.g. ortho-geriatric pathway, mother and child, cancer center)