Implementing evidence based organization and its impact on quality of care: results of the DUQUE Project

Rosa Suñol on behalf of the DUQuE Consortium

CEESTAHC_EBHC Symposium. Krakow 14th December 2014

Funded by the European Community 's Seventh Framework Programme FP7/2007-2013 under grant agreement nª 24188

SEVENTH FRAMEWORK PROGRAMME

DUQuE

Deepening our Understanding of Quality Improvement in Europe

Project coordination: Avedis Donabedian Institute, Autonomous University of Barcelona. Prof. Rosa Suñol; Co-IP: Oliver Groene, PhD

Partners

- Academic Medical Centre, Netherlands
- Netherlands Institute of Health Services Research, Netherlands
- Dr Foster Intelligence, England
- Department of Clinical Quality and Patient Safety, Central Denmark Region
- Polish Society for Quality Promotion of Health Care, Poland
- Institute for Medical Sociology, Health Services Research and Rehabilitation Sciences, Germany
- European Hospital and Healthcare Federation, Belgium
- University of California, Los Angeles, USA
- Avedis Donabedian Institute, Autonomous University of Barcelona, Spain

Country coordination

- Czech National Accreditation Committee, **Czech Republic**
- Dr Foster Intelligence, **England**
- Haute Autorité de Santé, **France**
- Institute for Medical Sociology, Health Services Research and Rehabilitation Sciences, **Germany**
- Polish Society for Quality Promotion in Health Care, **Poland**
- Portuguese Association for Hospital Development, **Portugal**
- Portuguese Society for Quality in Health Care, **Portugal**
- Foundation for the Accreditation and the Development of Health Services, **Spain**
- Turkish Society for Quality Improvement in Healthcare, **Turkey**

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Justification

- At European level, there is currently no comprehensive guidance for the hospitals on the development of their quality management systems
- Exploration of impact of quality improvement strategies on patient-level performance has not been performed at EU level
- DUQUE will aim at identifying the most effective quality and safety mechanisms
- This research will guide hospitals, and purchasers in contracting hospital services

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Overall objective

To test whether organisational quality improvement and culture, professionals' involvement, and patient empowerment are associated with the quality of care in European hospitals (as measured in terms of clinical effectiveness, patient safety and patient involvement)

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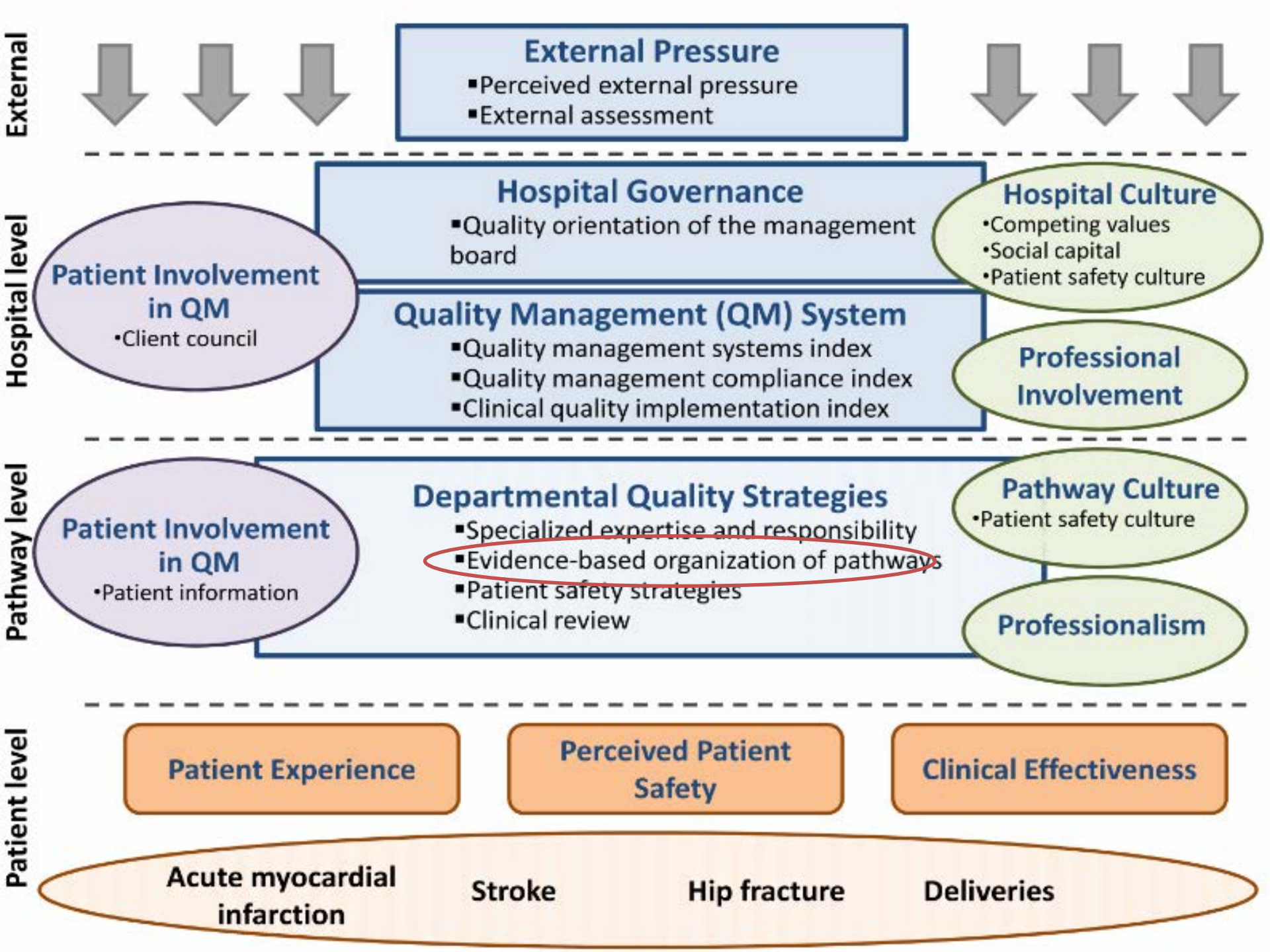
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Overall design

- **Cross-sectional study**
- **Data collected at hospital, departmental, professional and patient levels**
- **Mixed methods:**
  - Measurement of the various constructs will entail both qualitative and quantitative techniques
    - Surveys
    - Chart review
    - Audit/observation
    - Routine data

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Countries participating in the field test

Criteria:

- They cover different European health systems and social variation
- They are big enough to have sufficient number of hospitals for the sampling strategy.

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Hospitals inclusion criteria

Applicable to ALL 30 hospitals

- ❑ > = 130 beds
- ❑ General hospitals /Provide care for the four conditions studied
  - ✓ Acute Myocardial Infarction (AMI)
  - ✓ Stroke
  - ✓ Hip Fracture
  - ✓ Deliveries

Applicable only to the 12 hospitals for the in-depth study

- ❑ Volume of care provided to ensure recruitment of patients in given timeframe (30 valid cases in 4-5months per condition)

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Countries and Hospitals participation

Total hospitals (n=240) and patients (n=11520)

Countries
Czech Republic
England
France
Germany
Poland
Portugal
Spain
Turkey

Participation and Activities at country level

- **30 hospitals**

  Activities:

  - Surveys to professionals (management directors, quality coordinators and prof. leaders)
  - Administrative Data

- **12 hospitals** (from the previous 30)

  Additionally performed the following

  Activities:

  - Surveys to professionals (Chiefs of Department and professionals
  - Chart review (35 per condition)
  - Surveys to patients (30 per condition's pathway)
  - Visits

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Managing DUQuE Measures

Measures

- Professional questionnaires
- Chart review
- Patient Surveys
- Visit
- Routine data

Tasks

- Back and forth translation
- Pilot test
- Data base preparation
- Data collection
- Cleaning process (questions back to country coordinators)
- Aggregation of data bases
- Transfer

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Questionnaires expected to be completed in each type of hospital

Type of questionnaire	Non in-depth hospital	In-depth hospital
Professional Questionnaires		
A. Chair of the Board of Trustees	1	1
B. Chief Executive Officer	1	1
C. Chief Medical Officer	1	1
M. Highest Ranking Nurse	1	1
D. Quality Manager	1	1
E. Leading Physicians and Nurses	20	20
F. Manager of Care Pathways or Head of Department	0	4
G. Professionals at pathway level	0	80
Patient Questionnaires	0	120
Chart Reviews	0	140
Administrative Routine Data	1	1
External visits	0	1
TOTAL QUESTIONNAIRES	**26**	**371**

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Measures compliance

Type of Questionnaire	Total	% From Expected
Professional Questionnaires	9.793	89
Patient Questionnaires	6.536	75
Chart Reviews	9.082	90
External Visits	74 + 189	100
Administrative Routine Data	182	95
Overall	**25.731**	**86**

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A challenge to achieve !!

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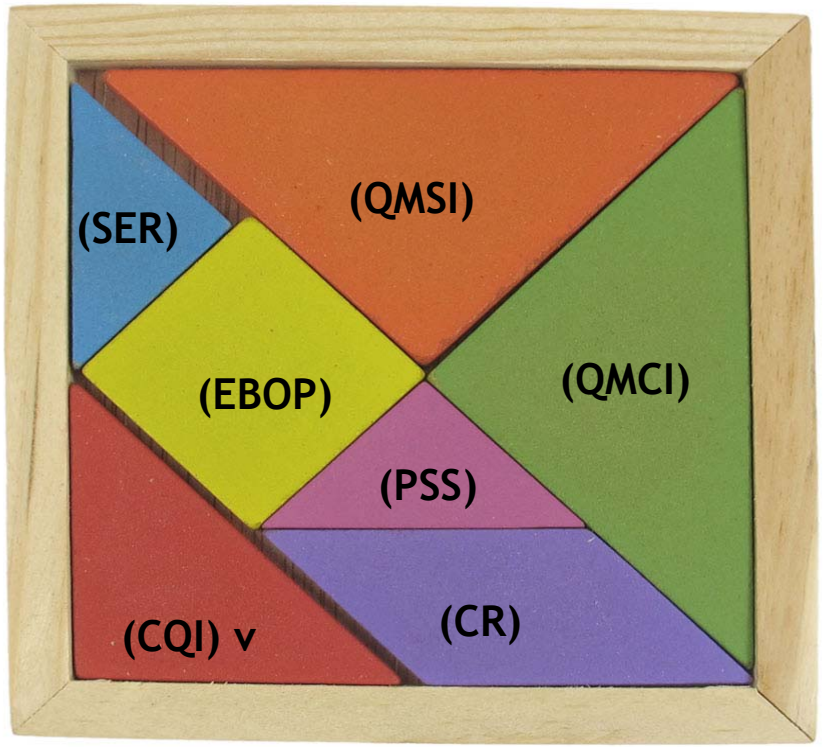
How do we meassure quality management?



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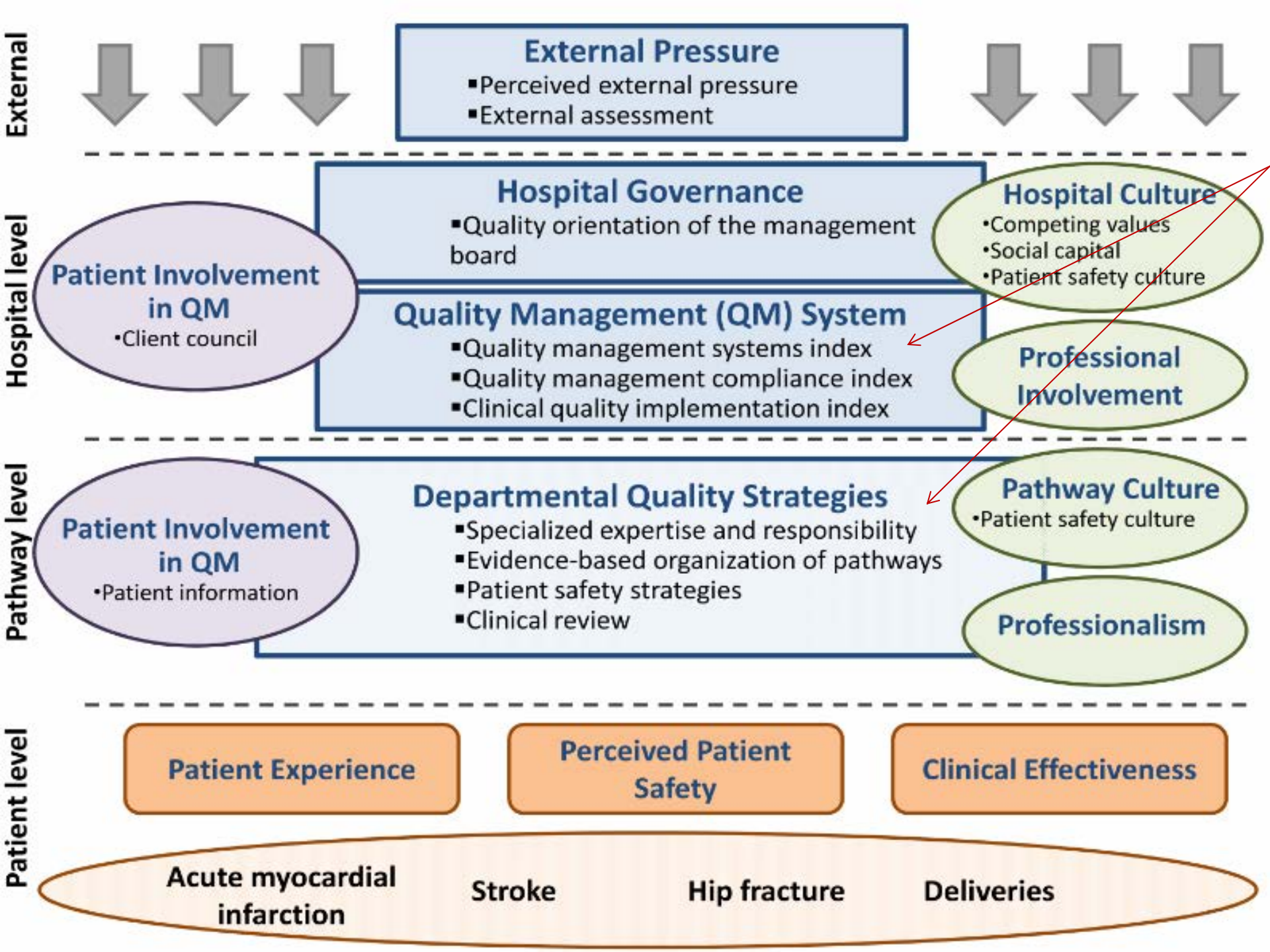
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Content of quality management measures at hospital level

QMSI, Quality Management System Index (46 items questionnaire)	Global measure on the extent of implementation of quality management system. Includes 9 sub-scales.
QMCI, Quality management compliance Index (18 items visit)	Developed from the prespective of how the hospital management oversees quality activities of the hospital.
CQI, Clinical quality implemenation (7 areas visited)	Meassures the implementation of quality activities and continuous quality improvement in clinical areas (infection prevention, medication management, falls, pressure ulcers, elective surgery, patient safety in surgery and preventing patient deterioration)

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Content of quality management measures at pathway level

SER, Specialized expertise and responsibility (3 items visit)	Responsible group for condition management. Clinical leadership
EBOP, Evidence based organization of the pathway (5-10 items visit)	Based on quality standards developed from evidence based guideliness from NICE and SIGN. Measssures if organizational meassures are in place to allow aplying evidence
PSS, Patient safety strategies (9 item visits)	Include: Patient ID, Hand Hygine, Prevention of needle puncture, medication management, Crash carts (resucitation trolleys) and reporting adverse events system available
CR, clinical reviews (3 items visit)	Includes: clinical indicators, multidisciplinary audit and professional feed-back

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Where are the major differences. Exploring Variance

	Between-Country Variability		Within-Country (Between-Hospital) Variability)		Within-Hospital (Between Department) Variability		Total variance
	Variance	(%)	Variance	(%)	Variance	(%)	
Model 1. PSS Patient safety strategies	0	**(0)**	0.1827	**(65.9)**	0.0943	**(34.1)**	0.277
Model 2. AMI-EBOP Evidenece based organization	0.068	**(10.1)**	0.6127	**(89.9)**	N.A.		0.681
Model 3. STROKE-EBOP Evidenece based organization	0.308	**(31.8)**	0.6603	**(68.2)**	N.A.		0.968
Model 4 OBSTETRIC DELIVERIES-EBOP Evidenece based organization	0.056	**(40.0)**	0.0835	**(60.0)**	N.A.		0.139
Model 5. HIP FRACTURE-EBOP Evidenece based organization	0.723	**(56.3)**	0.5611	**(43.7)**	N.A.		1.289

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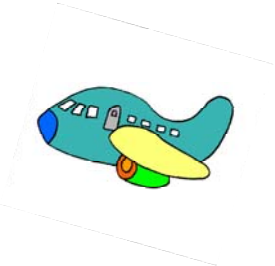
Summary

- Patient safety strategies are not yet fully implemented
- Variations are higher inside countries than between countries both in Patient Safety Strategies and in Evidence Based organization

POLICY CONSEQUENCES OF THESE FINDINGS CAN BE RELEVANT FOR PATIENT MOVEMENT IN EUROPE



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Associations between quality management systems and patients outcomes (effectiveness and patient involvement):

- at hospital level
- at department level

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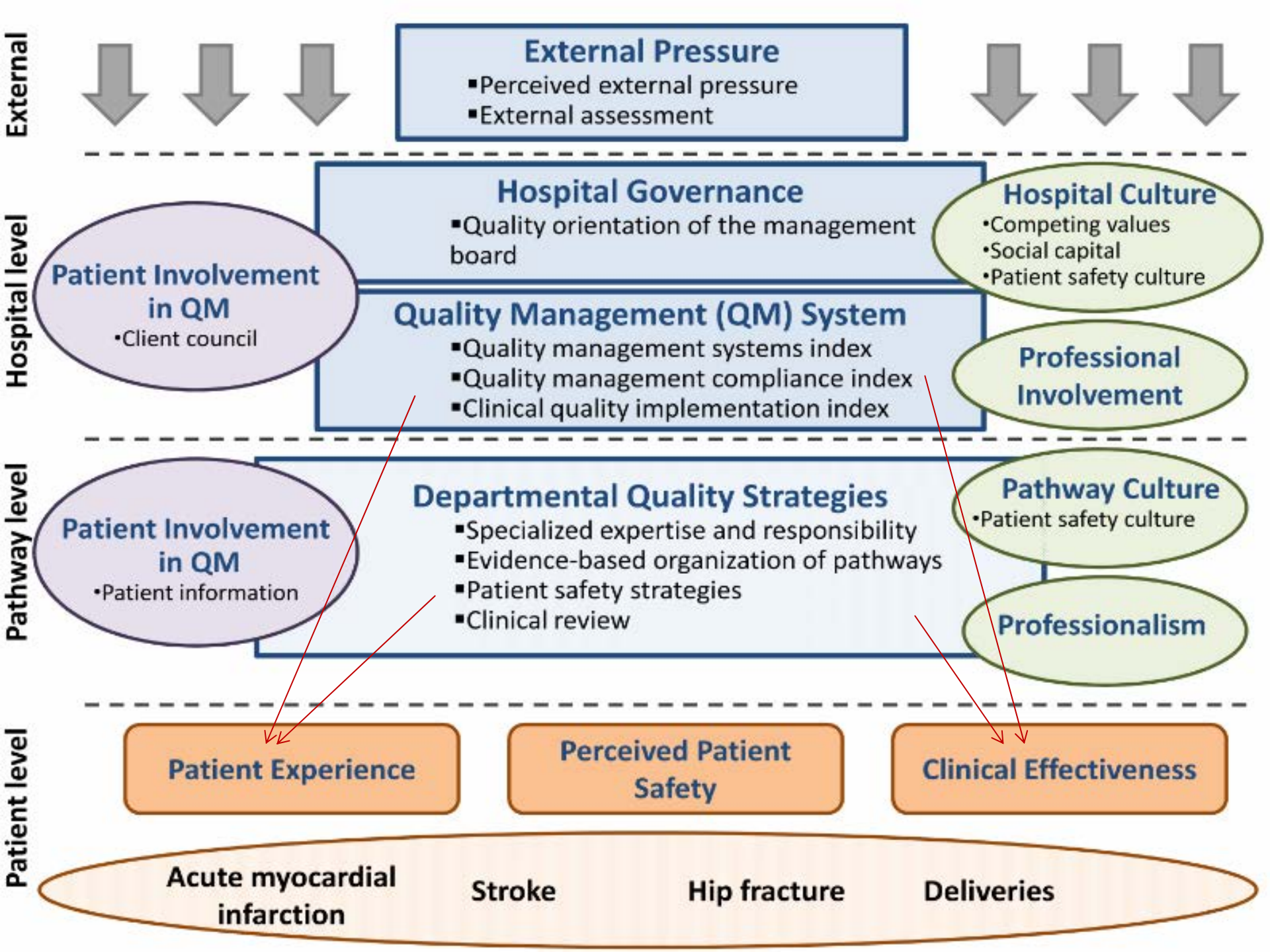
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We decided to launch a guide book on how to develop quality management systems

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Why the Guidebook

- Because not everybody reads scientific articles in detail and professionals, policy makers and payers need a “practical guide” to improve quality
- Currently at European level, there is no comprehensive guidance for hospitals on development of their quality management systems
- The guidebook is a synthesis of hundreds of approaches to a simple framework based on current state of the art research and DUQuE results
- It is intended for use by hospital managers, quality managers, professionals and payers to reflect on their organization of quality improvement

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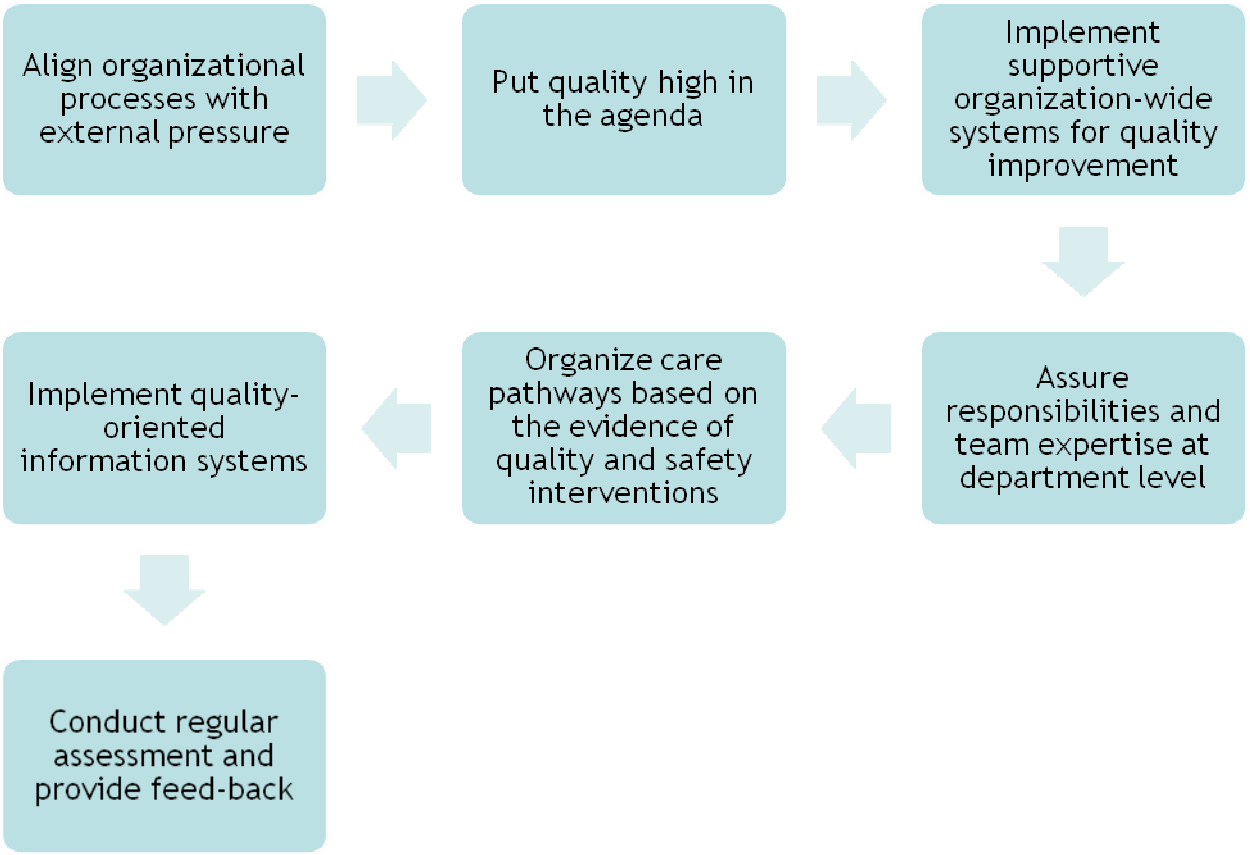
The framework for implementing quality management systems. Seven ways to improve quality and safety



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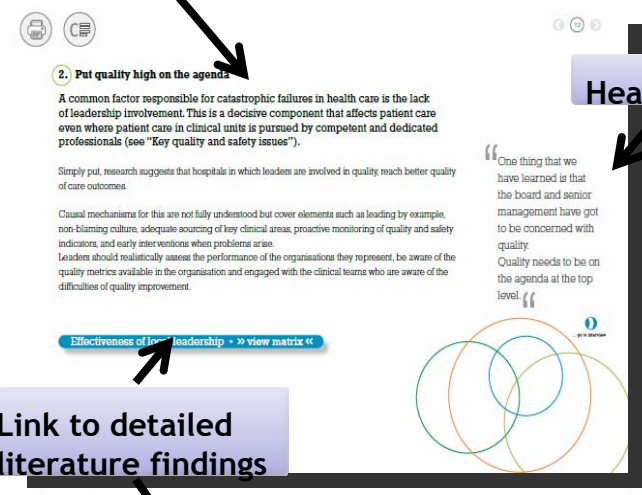
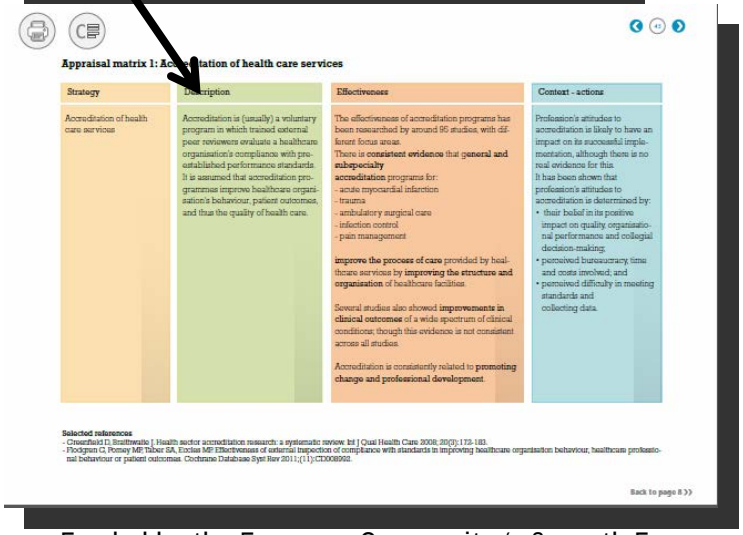
1. How the use the guide

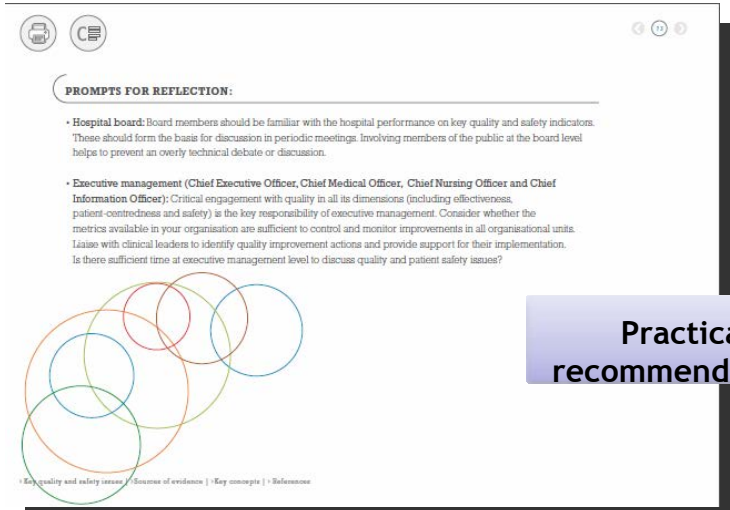
Reserach findings summary



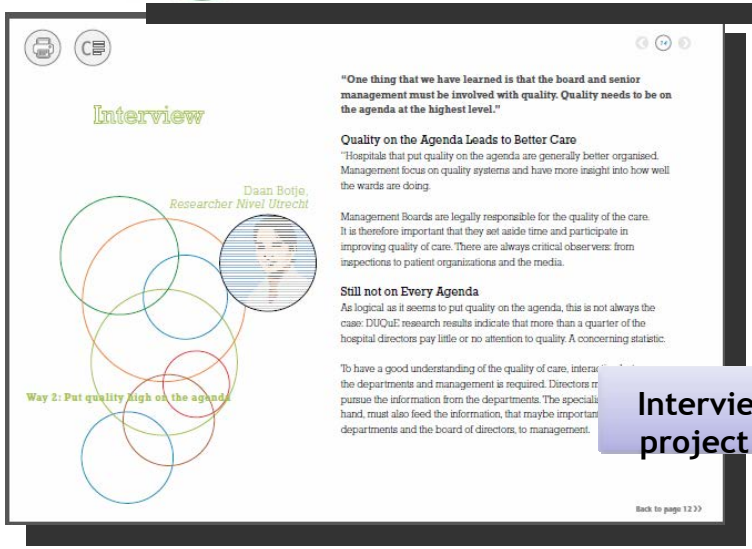
Headline

Link to detailed literature findings





Practical recommendations



Interview to one project member

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5. Organize care patyhways based on evidence of quality and safety interventions

5. Organise care pathways based on evidence of quality and safety interventions

The majority of hospital departments still follow a traditional organizing principle according the medical specialization. To better respond to current patient´s needs, an organisation based on care pathways should be pursued in which all clinical activities are centred on the patient´s overall journey.

Advantages of an organisation based on care pathways are better standardization of care processes, better collaboration among clinicians, reduced variability and improve clinical outcomes.

A care pathway is more than a guideline. It reflects best evidence and bed-side actions, but more importantly is reflected in the overall organisation of work, including definition of professional roles, physical ward organisation and strategies to ensure patient safety. Patient safety strategies have to be in place where the clinical service is provided. This is not an add on, it is an integral component of organizing the care. The implementation of care pathways is often challenging as old patterns of care needs to be overcome and new collaborations, often across specialties and professionals groups, need to be established. Care pathways are associated with reduced costs, but they don't come for free and leadership support, financial resources for reorganisation and staff training are required.

Guidelines dissemination and implementation • » view matrix «

Interventions to improve handovers • » view matrix «

"There is a lot that we can still learn from evidence-based medicine.
It is not just about professionals following guidelines; it is about organizing care according to best evidence."

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Evidence for implementing guidelines

Appraisal matrix 6: Guidelines dissemination and implementation

Strategy	Description	Effectiveness	Context - actions
Guideline dissemination and implementation	Clinical guidelines have the potential to improve patient care by promoting evidence-based interventions. There is however uncertainty about the likely effectiveness of different guideline dissemination and implementation strategies and resources required to deliver them. Commonly investigated interventions to disseminate and implement clinical guidelines are: - Reminders ((computer-generated) paper-based) - Dissemination of educational materials - Educational meetings - Audit and feedback - Patient-directed interventions.	The effectiveness of guideline dissemination and implementation strategies has been well researched in more than 200 studies including over 300 comparisons; though the quality of these studies is generally poor. The majority of studies reporting dichotomous process data (86.6%) observed **modest to moderate improvements in care**, suggesting that dissemination and implementation of guidelines can promote compliance with recommended practices. *Evidence from single intervention studies:* • Educational materials Median improvement in care (n=4): +8.1% (range 3.6-17%) • Audit and feedback Median improvement in care (n=6): +7.0% (range 1.3-16.0%) • Reminders Median improvement in care (n=14): +14.1% (range -1.0-34.0%) Multiple intervention studies: • Educational materials (48%) / educational meetings (41%) / reminders (31%) / audit and feedback (24%) Median improvement in care (n=18): +17.3% (range -5.6-16.4%). The effectiveness of multiple interventions is not higher than single interventions, and does not appear to increase with the number of interventions. It has also been shown that that clinical practice guidelines are more effective when they are presented in easy-to-access/easy-to-use portable formats and implemented using patient specific reminders. Very few studies investigated the costs of different strategies. In general, short (e.g. lunch) educational meetings and dissemination of educational materials appear to be most feasible considering limited available resources.	Clinical practice guidelines are more effective if adapted to local needs. The availability of resources and practical considerations are important elements that should be offset against the expected effectiveness, to determine the choice for intervention.

Selected references

- Grimshaw J, Eccles M, Thomas R, MacLennan G, Ramsay C, Fraser C et al. Toward evidence-based quality improvement. Evidence (and its limitations) of the effectiveness of guideline dissemination and implementation strategies 1966-1998. J Gen Intern Med 2006; 21 Suppl 2:S14-S20.
- Grimshaw JM, Thomas RE, MacLennan G, Fraser C, Ramsay CR, Vale L et al. Effectiveness and efficiency of guideline dissemination and implementation strategies. Health Technol Assess 2004; 8(6):iii-72.

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Conclusions Patient level outcomes

- Baseline assessment of key quality indicators show major shortcomings and large variation in many indicators. Findings suggest that a substantial proportion of European citizens could be at risk of receiving suboptimal care
- Variations are higher inside countries than between countries both in Patient Safety Strategies and in Evidence Based organization. This is important when considering EU patients movement between countries
- Associational analysis suggests that QMS at hospital level (distal effect) has weak relationship with some clinical outcomes
- Department level Quality activities (proximal effects) are strongly related with several clinical outcomes

QUESTIONNAIRES AND THE APPRAISAL ARE AVAILABLE IN OUR WEB SITE www.duque.eu

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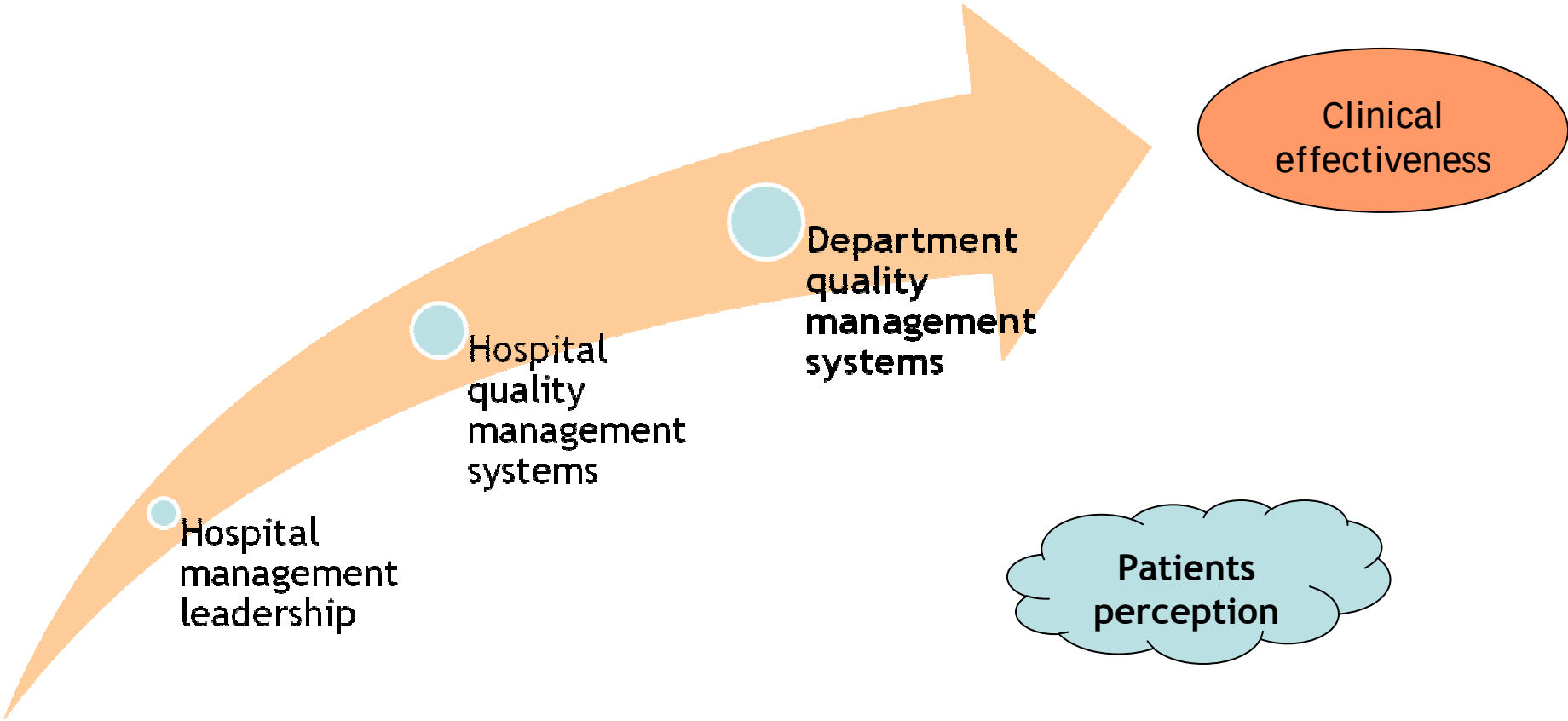
Some reflections. Importance of proximal effect



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Let's stress the importance of quality management at pathway level and chief of department leadership

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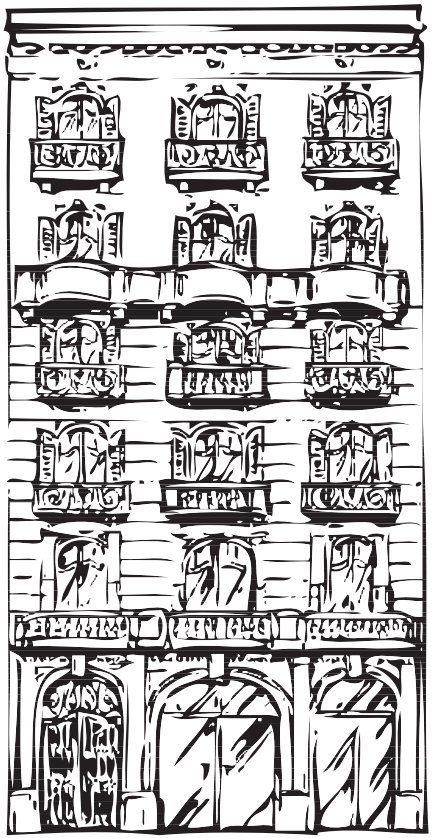
THANK YOU !!



AVEDIS DONABEDIAN
INSTITUT UNIVERSITARI-UAB

BARCELONA
C/ Provença, 293, pral.
08037 Barcelona
Tel.: +34 932 076 608

MADRID
Paseo de la Castellana, 141
(Edificio Cuzco IV)
28046 Madrid
Tel.: +34 917 498 046

BOGOTÁ (COLOMBIA)
Carrera 7A 123-24, Of.503
Bogotá - Colombia
Tel: +57 1 744.99.76
FAX: +57 1 755.00.31

fad@fadq.org

www.fadq.org

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