Policy Brief
Summary
Addressing Medical Errors in the Lebanese Healthcare System
K2P Policy Briefs bring together global research evidence, local evidence and context-specific knowledge to inform deliberations about health policies and programmes. It is prepared by synthesising and contextualizing the best available evidence about the problem and viable solutions through the involvement of content experts, policymakers and stakeholders.
K2P Policy Brief Summary

Addressing Medical Errors in the Lebanese Healthcare System
Authors
Fadi El-Jardali, Lamya El Bawab & Racha Fadlallah

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Merit Review
The K2P Policy Brief undergoes a merit review process. Reviewers assess the brief based on merit review guidelines.

Acknowledgements
The authors wish to thank the K2P core team and the Ministry of Public Health for their support. We are grateful to the key stakeholders that we interviewed during the process of developing this K2P Policy Brief. They provided constructive comments and suggestions and provided relevant literature.

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Key Messages

What’s the problem?
While there has been an increase in the reporting of medical errors in Lebanon, the associated implications and debates about causes, responsibilities and accountabilities are ill-informed, and in many cases, not leading to real improvement in patient safety practices. Problems at the system, organizational and professional levels are contributing to the incidence of medical errors and the associated suboptimal responses.

What do we know about four elements of an approach to addressing the problem?

Element 1: Enhance clinical governance through the integration of evidence-based clinical guidelines, education and training of providers, and conducting audits and performance appraisals

Evidence-based clinical guidelines
→ Eight systematic reviews supported the implementation of evidence-based practices for higher quality of care since they significantly improve skills, knowledge and attitudes of providers.

Education and training of providers
→ Four systematic reviews found that the inclusion of quality improvement and patient safety education in curricula of trainees and medical students enhanced their knowledge, skills and attitudes towards quality improvement and patient safety as well as improved their engagement in quality improvement projects.

→ An overview of 39 systematic reviews found that continuing medical education (ranging from educational meetings to more expansive learning activities) improves physicians’ knowledge, attitudes, behaviors and performances as well as patient health outcomes.

→ An overview of 26 systematic reviews on continuing medical educational techniques found that interactive methods (audit/feedback, interactive education, academic detailing and reminders) were the most effective at improving performance and patient health outcomes, followed by clinical practice guidelines.
→ Four systematic reviews found that team-training can meaningfully improve providers’ knowledge and attitudes, teamwork processes, clinical care processes and patient outcomes, including adverse events, mortality and morbidity.

→ Two systematic reviews found that leadership walk rounds, interdisciplinary rounding, and comprehensive unit-based safety program (CUSP) had the most positive impact on improving patient safety climate and patient outcomes.

**Audit and feedback**

→ An overview of systematic reviews, a meta-analysis, a systematic review and a critical review of the literature found that audit and feedback is an effective tool to improve clinical performance of healthcare providers.

→ One systematic review found that audit and feedback can improve quality of care by 10%.

→ Two systematic reviews and 1 meta-analysis specified that feedback is most effective if provided by a supervisor or a colleague, delivered more than once (preferably in written format), frequent, individualized and includes specific goals and action plans.

**Performance appraisal**

→ Seven systematic reviews found that multi-source feedback (MSF) (or 360 degree evaluation) enhances physician performance and reflects on where change is required in their practices. Another 8 systematic reviews found that MSF also enhances non-technical competencies such as communication, interpersonal, collegiality, humanism and professionalism skills.

→ Two systematic reviews found that MSF is the most appropriate and practical method to adopt in terms of time and cost-effectiveness.

→ One systematic review and 4 primary studies found that performance appraisal improves quality of care and ensures continuous education of healthcare providers.

→ Several single studies found an association between provider re-certification and improved clinical outcomes and quality of care.
Element 2: Develop and implement policies that promote anonymous incident reporting at the organizational and national level

→ At organizational level: 1 systematic review and 2 primary studies found that non-punitive reporting of adverse events and near misses significantly encourages increased reporting of adverse events and helps healthcare organizations focus more on errors at the system level rather than blaming individuals.

→ One systematic review and 9 studies found that non-punitive reporting of adverse events helps organizations learn from their incidents and failures in the delivery of care and forms part of a loop that encourages investigation and continuous monitoring.

→ At national level: 3 primary studies found that anonymous national incident reporting systems can improve delivery of care and patient safety.

Element 3: Revise and update current accreditation systems to ensure patient safety goals, indicators and training requirement are explicit in the standards and integrated in the contractual arrangements

→ Five systematic reviews found evidence that health care accreditation promotes change and professional development, increases staff engagement and communication, improves organizational efficiency, encourages multidisciplinary team building, promotes positive changes in organizational culture, and enhances leadership and staff awareness about continuous quality improvement.

→ Four systematic reviews found that relying on performance indicators, that are supposed to be collected when auditing for compliance with accreditation standards, improves the overall patient safety and quality of care delivered.

→ Eleven systematic reviews concluded that pay for performance (P4P) strategies lead to moderate enhancements in quality.

Element 4: Empower patients to enhance quality of care and patient safety

→ Four systematic reviews found that patient empowerment fosters an increase in shared decision-making and increases the efficiency of the healthcare system.
→ Five systematic reviews found that involving patients improves healthcare organization performance and patient safety.
→ Eight primary studies found that forming patient advisories and ombudsman programs empower patients.

**What implementation considerations need to be kept in mind?**

→ Insufficient expertise and resources, lack of information on instructions and data collection, and technical issues like setting sustainable standards may hinder implementation of audit and feedback in healthcare organizations.
→ Ability of providers to give feedback and degree of trust in the formative nature of assessment may hinder attainment of positive behavioral changes.
→ Availability of expert faculty, competing curricular/service demands, and institutional culture may affect implementation of patient safety and quality improvement in medical curriculum.
→ Healthcare providers' workload, poorly designed incident reporting systems, and a “punitive” environment may discourage filling of incident reports.
→ Lack of national quality and patient safety policies that set out goals for quality and patient safety, clarify roles and responsibilities and identify incentives and non-incentives may hinder implementation of initiatives across healthcare systems.
→ Selection of performance indicators that are valid, reliable, applicable and relevant to accreditation, standardization of the methods of collection and reporting systems and establishment of systems to counter data manipulations
→ Costs of training employees, hiring new personnel and involving patients in quality improvement and patient safety initiatives
→ Patients' refusal to be involved in shared decision making and quality improvement
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The Problem
While there has been an increase in the reporting of medical errors in Lebanon, the associated implications and debates about causes, responsibilities and accountabilities are ill-informed, and in many cases, not leading to real improvement in patient safety practices. Problems at the system, organizational and professional levels are contributing to the incidence of medical errors and the associated suboptimal responses.

Size of the Problem
In Lebanon, data regarding the exact number of reported errors is missing. However, in the past few years, media started to play a role in shedding light on some of the medical errors and sentinel events in Lebanese healthcare organizations. A study conducted by El-Jardali et al., 2015, found that between 2012 and 2013, media topics related to patient safety and medical errors mostly reported stories of patients’ deaths due to medical errors during or after surgeries, deaths due to healthcare organizations’ refusal to admit patients who are not financially covered, deaths because organizations lack appropriate equipment or do not have enough beds to accommodate emergency patients and deaths due to the weak dispatch system to transfer patients from one organization to another (El-Jardali et al., 2015).

Another study found that between 1996 and 2013, more than a thousand complaints related to medical malpractice were filed to the Order of Physicians (Al-Salim, 2014). Investigations conducted by the Order of Physicians focused mostly on physicians as the main actors in preventable medical errors (Al-Salim, 2014), whereas majority of errors occur as the result of failures of complex healthcare systems and not individual negligence or incompetence, as emphasized by the Institute of Medicine (Kohn et al., 2000).

Staffing, punitive responses to error and communication breakdown have been found to be major factors influencing patient

“Medical error is defined as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim. Errors can include problems in practice, products, procedures and systems.” (Smeby et al., 2015; QuIC, 2000)

Background to Policy Brief
A K2P Policy Brief brings together global research evidence, local evidence and context-specific knowledge to inform deliberations about health policies and programs. It is prepared by synthesizing and contextualizing the best available evidence about the problem and viable solutions and options through the involvement of content experts, policymakers and stakeholders.

The preparation of the Policy Brief involved the following steps:
1) Selecting a priority topic according to K2P criteria
2) Selecting a working team who deliberates to develop an outline for the policy brief and oversee the litmus testing phase.
3) Developing and refining the outline, particularly the framing of the problem and the viable elements
4) Litmus testing by conducting one to one interviews with up to 15 selected policymakers and stakeholders to frame the problem and make sure all aspects are addressed.
5) Identifying, appraising and synthesizing relevant research evidence about the problem, elements, and implementation considerations
6) Drafting the brief in such a way as to present concisely and in accessible language the global and local research evidence.
7) Undergoing merit review
8) Finalizing the Policy Brief based on the input of merit reviewers, translating into Arabic, validating translation, and disseminating through policy dialogues and other mechanisms.
safety in Lebanon (El-Jardali et al., 2014a; Hamdan & Saleem, 2013; Alahmadi, 2010; El-Jardali et al., 2010; Bodur & Filiz, 2009).

**Underlying Factors**

The underlying factors of the problem stem from the health system arrangements in place.

At the governance level, and despite the presence of accreditation, there is still no explicit national policy for quality improvement and patient safety that sets out goals and indicators, clarifies roles and responsibilities and identifies incentives and non-incentives across the entire healthcare spectrum (El-Jadali and Fadlallah, 2015). In addition, there are no legislative requirements for healthcare organizations to implement specific quality improvement systems (such as incident reporting systems) or report on a national set of standardized performance indicators (El-Jardali and Fadlallah, 2015).

Despite the success of the accreditation system in Lebanon, particularly for hospitals and primary health care centers, still the accreditation program does not cover other providers of care such as polyclinics, long-term care, diagnostic facilities and laboratories and mental health institutes (both in public and private sector). The current hospital accreditation process has some gaps including outdated standards, non-renewal of accreditation “status” on a regular basis, absence of mechanisms to ensure quality is sustained post-accreditation and lack of certified national auditors. Having said this, the MOPH is currently revising the hospital accreditation program with plans in place to revamp the accreditation standards and update them.

Within health care organizations, there are gaps and dysfunctions in the area of clinical governance, specifically clinical audit, education and training of providers in quality improvement and patient safety, and performance appraisals.

Clinical auditing and documentation are not adequately performed in the Lebanese healthcare sector with no accurate assessment of performances and processes (Jamali et al., 2010). Also, the use of evidence-based clinical practice in healthcare organizations is still limited (Maroun et al., 2010).

Training of healthcare providers in quality improvement and patient safety in healthcare organizations is not optimal (El-Jardali et al., 2012). In addition, Continuing Medical Education (CME) is not as effective as it should be. For instance, although the Order of Physicians advises physicians to seek CME, physicians rarely undertake any kind of CME (Assaad-Khalil et al., 2013). When it comes to implementing new practices that are introduced at CMEs, resources to do so are often not available. Another challenge concerns the curriculum of medical students which focuses mostly on disease diagnosis and management, and less on proper management of healthcare systems and quality improvement (Natafqi et al., 2011). In addition, re-licensing of providers is not required by the
MoPH. This is exacerbated by the absence of systems for performance appraisal in both national and clinical governance bodies (El-Jardali et al., 2009).

Finally, it is important to note that patients lack knowledge about their rights when it comes to medical errors (Morcos, 2015a), and it is sometimes difficult for them to prove that they have been the victim of a medical error.

At the **financing level**, incentive systems that link contractual agreement, regulations, accreditation status, and performance indicators are still underutilized in Lebanon (El-Jardali and Fadlallah, 2015). These are important in order to encourage health care organizations (both public and private sector) and health personnel to engage in quality improvement and patient safety initiatives (El-Jardali and Fadlallah, 2015).

Up till 2014, contractual agreement by the MOPH linked reimbursement solely to accreditation status, which was unfair since hospitals that were placed in the same accreditation category were reimbursed the same even if they were not homogeneous (Ammar et al, 2013). In April 2014, the MOPH declared the establishment of a new financing arrangement for services provided by contracted private and public hospitals (MOPH, 2014). However, the new arrangement does not include measures and outcomes that reflect hospitals’ actual performances (El-Jardali et al, in-preparation).

While accreditation of hospitals is a pre-requisite for contracting and financial reimbursement by MOPH (El-Jardali et al., 2011), other third party payers do not link contractual agreements with healthcare organizations to accreditation status or attainment of specific quality and patient safety indicators.

At the level of primary healthcare (PHC), a performance-based contracting system which includes centers that pass accreditation is being developed (El-Jardali and Fadlallah, 2015). The latter is important to encourage implementation of accreditation standards in PHC centers, which in turn has positive implications on quality of care.

At the **delivery level**, a patient safety culture is still not instilled in the day to day operations of healthcare organizations. This is promoting a punitive environment within health organizations, and is the reason why healthcare providers hesitate to report medical errors (El-Jardali et al., 2011; Sirriyeh et al., 2010). In addition, training of providers on how to lead, implement and follow up on quality improvement and patient safety initiatives is not optimal in health care organizations (El-Jardali and Fadlallah, 2015). For instance, ensuring hands-on skills on how to apply patient safety standards and goals remains a main challenge (El-Jardali et al., 2012; El-Jardali et al., 2011). This is exacerbated by the absence of explicit accreditation standards for training of providers in quality improvement and patient safety (El-Jardali et al., 2012).

Another challenge relates to shortages in staffing and work overload, both of which negatively affect patient outcomes and safety (El-Jardali et al., 2010). Finally, miscommunication within and across healthcare institutions is
leading to adverse events especially when it comes to handoffs and reporting on medical errors (El-Jardali et al., 2010). This is due to problems at the organizational level such as poor teamwork, unclear instructions of procedures and lack of central information repositories (Foster & Manser, 2012; Segall et al., 2012; Baldwin et al., 2011; Riesenberge, 2009).

**Elements of a comprehensive approach to address the problem**

**Element 1** Enhance clinical governance through the integration of evidence-based clinical guidelines, education and training of providers, and conducting audits and performance appraisals

Evidence-based clinical guidelines, education and training of providers, audits and performance appraisals are key components of clinical governance. Compelling evidence from numerous systematic reviews has demonstrated the effectiveness of each of these interventions in improving quality of care and patient safety in healthcare organizations. Key findings from systematic reviews are presented in the table below.

<table>
<thead>
<tr>
<th>Category of finding</th>
<th>Element 1</th>
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<tbody>
<tr>
<td><strong>Benefits</strong></td>
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<tr>
<td><strong>Evidence-based guidelines</strong></td>
<td>8 systematic reviews encourage the implementation of evidence-based practices for higher quality of care since they significantly improve skills, knowledge and attitudes of providers (Scurlock-Evans et al., 2014; Ubbink et al., 2013; Dizon et al., 2012; Flodgren et al., 2012; Lugtenberg et al., 2009; Menon et al., 2009; Flores-Mateo &amp; Argimon, 2007; Bahtsevani et al., 2004).</td>
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<tr>
<td><strong>Education and training</strong></td>
<td>4 systematic reviews found that inclusion of quality improvement (QI) and patient safety educations in curricula of trainees and medical students were well received by learners, and enhanced their knowledge, skills and attitudes towards quality improvement and patient safety as well as improved their engagement in quality improvement projects (Kirkman, 2015; Wong 2010; Nie et al, 2011; Boonyasai, 2007). An overview of 39 systematic reviews found that continuing medical education (CME) does improve physician performance and patient health outcomes, with more reliably positive effects on physician performance than on patient health outcomes. CME activities that are more interactive, use more methods, are longer, involve multiple exposures, and are focused on outcomes considered important by physicians lead to more positive</td>
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### Category of finding

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<td>outcomes (Cervero et al, 2015).</td>
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An overview of 26 systematic reviews on educational techniques found that interactive methods (audit/feedback, interactive education, academic detailing and reminders) were the most effective at improving performance and patient health outcomes followed by clinical practice guidelines. (Bloom, 2005).

2 systematic reviews examined strategies to promote culture of patient safety and found that leadership walk rounds, interdisciplinary rounding, and comprehensive unit-based safety program (CUSP) had the most positive impact on patient safety climate and patient outcome (Morello et al, 2012; Weaver et al, 2013a).

4 systematic reviews found that team-training can meaningfully improve participant knowledge or attitudes, teamwork processes, clinical care processes and even patient outcomes, including adverse events, mortality and morbidity across a range of clinical contexts (Weaver et al, 2013b; Schmutz and Manser, 2013; Buljac-Samardzic et al, 2010; Weaver et al, 2010). Reported effect sizes were larger for bundled team-training interventions that incorporated tools and organizational changes to support sustainment and transfer of teamwork competencies into daily practice (Weaver et al, 2013b).

### Audit and feedback

An overview of systematic reviews, a meta-analysis, a systematic review and a critical review of the literature found that audit and feedback is an effective tool to improve clinical performance of healthcare providers (Johnson & May, 2015; Ivers et al., 2012; Hysong, 2009; Lu et al., 2008).

1 systematic review found that audit and feedback can improve quality of care by 10 % (Ivers et al., 2014).

2 systematic reviews and 1 meta-analysis specified that feedback is most effective when baseline adherence to recommended practice is low, it is provided by a supervisor or a colleague, delivered intensively and more than once (preferably in written form), individualized, and includes specific goals and action plans (Ivers et al., 2014; Ivers et al., 2012; Hysong, 2009).

### Performance appraisal

7 systematic reviews found that the Multisource Feedback (MSF) or 360 degree evaluation tool enhances physician performance and reflects on where change is required in their practice (Donnon et al., 2014; Ferguson et al., 2014; Al Khalifa et al., 2013; Saedon et al., 2012; Miller & Archer, 2010; Wilkinson et
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<td>In MSF, physicians usually complete a self-evaluation instrument and receive feedback from a number of sources including medical colleagues, preceptors or supervisors and non-physician coworkers (e.g. pharmacists, nurses) as well as their patients.</td>
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<td></td>
<td>8 systematic reviews found that MSF also enhances non-technical competencies, e.g. communication, interpersonal and professionalism skills (Donnon et al., 2014; Ferguson et al., 2014; Al Khalifa et al., 2013; Saedon et al., 2012; Miller &amp; Archer, 2010; Wilkinson et al., 2009; Overeem at al., 2007; Jamtvedt et al., 2006).</td>
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<td></td>
<td>1 systematic review found that provider performance appraisal enhances quality of care, patient safety, and continuous performance development through continuing education of employees, helping employees develop new skills, attracting and retaining appropriate and qualified providers, and creating trust and better communication between providers and management (Hamilton et al., 2007).</td>
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<td>Several single studies found an association between provider re-certification and improved clinical outcomes and quality of care (Gallagher et al., 2014; Hawkins et al., 2013; Nora, 2013; WHO, 2008). In addition, systematic reviews found that multisource feedback (MSF) can be used to support re-licensing (Ferguson et al., 2014; Al Khalifa et al., 2013), and suggested that CME credits can be linked to re-certification (Bloom, 2005).</td>
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**Potential harms**

|                     | 1 systematic review found that evidence-based practice is thought to decrease therapeutic autonomy and thus reduce motivation to implement it (Scurlock-Evans et al., 2014). |
|                     | 1 systematic review found that even when evidence-based practice is implemented, it does not always mean that high quality evidence is being used, which may affect the quality of care provided (Scurlock-Evans et al., 2014). |
|                     | 1 systematic review found that lack of training in providing feedback and lack of trust in the formative nature of assessment had a negative effect on behavioural change in physician’s performance (Saedon et al., 2012). |
|                     | 1 systematic review found that provider performance appraisal is sometimes viewed by providers as a threat to sorting out poor performance which creates fear in the working environment; thus support by managers is necessary to create a culture that encourages performance appraisal (Hamilton et al., 2007). |
|                     | 1 systematic review found that multisource feedback lacks rigor, |
### Category of finding

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| **Cost and/or cost effectiveness in relation to the status quo**         | 1 systematic review and 5 studies found that implementing evidence-based practices reduces costs on healthcare organizations (Black et al., 2015; Pedro-Gomez et al., 2012; Considine & McGillivray, 2010; Peterson et al., 2008; Fineout-Overholt et al., 2005; Bahtsevani et al., 2004).  
   2 systematic reviews found that multisource feedback is the most appropriate and practical method to adopt in terms of time and cost effectiveness (Ferguson et al., 2014; Overeem et al., 2007).  
   1 study found that performance appraisal incurs high costs on smaller firms; however, this can be solved if larger firms provide them with the appraisal tools and resources needed (De Kok & Uhlancer, 2001). |
| **Uncertainty regarding benefits and potential harms** (so monitoring and evaluation could be warranted if the approach element were pursued) | 2 systematic reviews found that even though evidence-based practice is embraced by healthcare workers and organizations, its implementation is still scarce (Scurlock-Evans et al., 2014; Ubbink et al., 2013).  
   1 systematic review found that the effects of audit and feedback vary widely from an apparent negative to very large positive effect (Jamtvedt et al., 2006).  
   2 systematic reviews and 1 overview of systematic reviews found that studies are not always clear about the effectiveness of audit and feedback (Johnson & May, 2015; Ferguson et al., 2014; Ivers et al., 2014). 2 systematic reviews mentioned that MSF alone did not always result in performance change since physicians do not always know how to assess and analyze data collected from feedbacks (Ferguson et al., 2014; Saedon et al., 2012).  
   1 systematic review supported the use of MSF as a tool for performance improvement, but reported difficulties in identifying its long term impact and effectiveness on education and quality of care (Overeem et al., 2007).  
   1 systematic review mentioned that although MSF leads to performance improvement, many factors such as individual factors, the context of feedback, and the presence (or absence) of facilitation have effects on the magnitude of the response (Miller & Archer, 2010). |
Element 2: Develop and implement policies that promote anonymous incident reporting at the organizational and national level

Incident reporting can be implemented within healthcare organizations and at a national level. One systematic review found that when an incident reporting system is introduced at the organizational level, there is significant increase in the number of reported adverse events and near misses (Parmelli et al., 2012). Another systematic review found that non-punitive reporting of adverse events and near misses helps organizations learn from their incidents and failures in the delivery of care and encourages investigation and continuous monitoring (Seys et al., 2012).

Three studies found that national anonymous incident reporting systems played a great role in detecting errors at the micro level to improve delivery of care and patient safety at the national level such as raising awareness, doing research, audits, training initiatives, curriculum changes, and developing specific guidelines (Warm & Edwards, 2012; Mahajan, 2010; Hutchinson et al., 2009). The Malaysian national incident reporting system was created to provide information regarding patient safety for improvement, learning and system redesign purposes. The system allows the reporting of mandatory “must-report” incidents and of other voluntary incidents, generates alerts, disseminates lessons learnt from investigation of adverse events and generates best practices from the recommendations provided (Bin Abdul Rahman et al., 2013).

The evidence in the literature suggest that a national quality policy would influence the implementation of quality improvement (QI) strategies and systems in healthcare organizations, especially if they were specific enough and provide information on the quality activities that are needed for an integral system (Legido-Quigley et al, 2008; Lombarts, 2009; Spencer and Walshe, 2009). In a survey of 24 European countries, the existence of a statutory legal requirement to implement QI strategies for healthcare systems and organizations was reported as being the most important incentive for supporting progress in the development of QI initiatives (Spencer and Walshe, 2009).

Table 2 Key findings from systematic reviews and single studies

<table>
<thead>
<tr>
<th>Category of finding</th>
<th>Element 2</th>
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<tbody>
<tr>
<td>Benefits</td>
<td>Incident reporting within healthcare organizations</td>
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<td></td>
<td>A systematic review found that, when an incident reporting system is introduced, there is significant increase in the number of reported adverse events and near misses (Parmelli et al., 2012).</td>
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<td></td>
<td>A systematic review and 9 studies found that non-punitive reporting of adverse events and near misses helps organizations learn from</td>
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their incidents and failures in the delivery of care and encourages investigation and continuous monitoring (Seys et al., 2012; Warm & Edwards, 2012; Bigham et al., 2011; Mahajan, 2010; Conway et al., 2010; Conway et al., 2009; Smith, 2007; Olsen et al., 2007; La Pietra et al., 2005; Rothschild et al., 2005; Lawton & Parker, 2002).

2 studies reported that incident reporting focuses less on the individual who makes the error and more on the organizational factors that set up the conditions for an error to occur (Mahajan, 2010; Meurier, 2000).

A systematic review found that incident reporting is most used and most efficient to determine trends (Manias, 2013).

**National incident reporting**

3 studies on national anonymous incident reporting systems, such as those available in England and Wales, found that these systems play a great role in detecting errors at the micro level to improve the delivery of care and patient safety at the national level such as raising awareness, doing research, audits, training initiatives, curriculum changes, and developing specific guidelines. These health information frameworks also help in the development and the prioritization of preventive and corrective strategies (Warm & Edwards, 2012; Mahajan, 2010; Hutchinson et al., 2009).

A study found that the Vermont Oxford Network, an internet-based system for sharing data about outcomes and care in neonatal division by healthcare providers and patients’ families, helped strengthen inter-hospital relations and provide a glimpse into the complex cause of error, which can help improve quality of care and reduce error when assessed at a systems level (Suresh et al., 2004).

<table>
<thead>
<tr>
<th>Potential harms</th>
<th>Not reported by any of the systematic reviews</th>
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<tbody>
<tr>
<td><strong>Cost</strong> and/or cost effectiveness in relation to the status quo</td>
<td>1 study concluded that reporting systems are cost-effective (Barach &amp; Small, 2000)</td>
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<td><strong>Uncertainty</strong> regarding benefits and potential harms (so monitoring and evaluation could be warranted if)</td>
<td>1 systematic review and 2 studies found that detection rates of errors remain low, even when health professionals receive regular trainings about the importance of submitting incident reports (Manias, 2013; Olsen et al., 2007; Sari et al., 2007). 1 systematic review indicated that once an incident is reported, there is a need for organizations to develop schemes that protect their providers (the one who committed the error and the frontline</td>
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<td>the approach element were pursued)</td>
<td>providers) and provide them with emotional support to overcome the impact of the event (Seys et al., 2012).</td>
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**Element 3** Revise and update current accreditation systems to ensure patient safety goals, indicators, and training requirement are explicit in the standards and integrated in the contractual arrangements.

Health care accreditation has emerged as one of the most influential mechanisms for assessing performance of healthcare organizations and improving quality and safety of health care services (Hirose et al, 2003; Jovanovic, 2005). Five systematic reviews found that health care accreditation promotes change and professional development, increases staff engagement and communication, improves organizational efficiency, encourages multidisciplinary team building, promotes positive changes in organizational culture and enhances leadership and staff awareness about continuous quality improvement (Ng et al, 2013; Greensfield et al, 2012 Hinchcliff, 2012; Alkhenizan et al, 2011; Greenfield, 2008).

Linking the accreditation status to incentives such as access to public funding, preferential re-imbursement, health insurance benefits, contractual agreements, or designation as a medical travel destination has been shown to be an effective mechanism for making the business case for accreditation (Mate et al, 2014; Shaw, 2004). In India, Brazil and Costa Rica, insurers and employers are increasingly relying on accreditation award as a prerequisite for provider participation in their health care reimbursement programs (Mate et al, 2014).

Similarly, there has been a rising trend in the adoption of performance measures to ensure quality and patient safety in healthcare systems (Kerr and Fleming, 2007; García-Altés et al., 2006). Four systematic reviews reported that relying on performance indicators improved the overall patient safety and quality of care delivered (Gillam et al., 2012; Alshamshan et al., 2010; Van Herk et al., 2010; Fung et al., 2008).

Revising the accreditation programs in Lebanon and creating a system of incentives that links contractual agreement, regulations, accreditation status and performance indicators is important in order to encourage health care organizations (both public and private sector) and health personnel to engage in quality improvement and patient safety initiatives. The revision of the accreditation system and contractual agreement could encompass the following:

- Develop a new governance model for the accreditation program which includes renewal of accreditation status on a regular basis;
certification and re-certification of national auditors; and the presence of mechanisms to ensure quality is sustained post-accreditation

→ Ensure patient safety goals, indicators and training requirement are explicit in the accreditation standards of hospital and primary healthcare accreditation programs

→ Scale up accreditation to cover all providers of care in the country (primary care, long term care, mental health, clinics, polyclinics, diagnostic facilities and laboratories)

→ Encourage public and private third party payers to link incentives and contractual agreements to accreditation status or attainment of specific quality and patient safety indicators

→ Further improve the new re-imbursement formula for hospitals by including measures and outcomes indicators that reflect hospital’s actual performance measures

→ Design and implement a financial arrangement for PHC (i.e. performance contracting system) that includes centers that pass accreditation.

→ Establish a national set of standardized and applicable performance indicators for mandatory reporting that is specific for hospitals and primary healthcare and link to incentives

Table 3 Key findings from systematic reviews and primary studies

<table>
<thead>
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<th>Category of finding</th>
<th>Element 3</th>
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<tbody>
<tr>
<td>Benefits</td>
<td>5 systematic reviews found evidence that health care accreditation promotes change and professional development, increases staff engagement and communication, improves organizational efficiency, encourages multidisciplinary team building, promotes positive changes in organizational culture and enhances leadership and staff awareness about continuous quality improvement (Ng et al, 2013; Greensfield et al, 2012 Hinchcliff, 2012; Alkhenizan et al, 2011; Greenfield, 2008). 1 systematic review found consistent evidence from several studies to support a positive impact of general accreditation programs on different specific clinical outcomes, including the management of acute myocardial infarction, trauma, ambulatory surgical care, infection control and pain management (Alkhenizan et al, 2011). 1 systematic review highlighted potential relationships among accreditation programs, high quality organizational processes and safe clinical care, though the authors noted that the</td>
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</table>
### Category of finding

<table>
<thead>
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<th>Element 3</th>
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<tbody>
<tr>
<td>literature is limited in terms of level of evidence and quality of studies (Hinchcliff, 2012)</td>
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<td>4 systematic reviews mentioned that relying on performance indicators that are supposed to be collected when auditing for compliance with accreditation standards, as a mean for reimbursement, improves the overall patient safety and quality of care delivered (Gillam et al., 2012; Alshamshan et al., 2010; Van Herk et al., 2010; Fung et al., 2008).</td>
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<td>11 systematic reviews concluded that pay for performance (P4P) strategies lead to moderate enhancements in quality (Eldridge &amp; Palmer, 2009; So &amp; Wright, 2012; Scott, 2009; Christianson et al., 2008; Gillam et al., 2012; Huang et al., 2013; Al-Shamsan et al., 2010; Petersen et al., 2006; van Herck et al., 2010; Mehrotra et al., 2009; and Emmert et al., 2012).</td>
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<td>2 systematic reviews of P4P programs found that P4P seemed to be more effective when measures that have more room for improvement and are easy to track were used; incentives were targeted at individual physicians or small groups; approaches relied on purely positive incentives rather than winners and losers, rewards were based on absolute performance of providers; the program was designed in collaboration with providers; and larger payments were involved (Eijkenaar et al., 2013; So &amp; Wright, 2012).</td>
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### Potential harms

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<tr>
<th>Cost and/or cost effectiveness in relation to the status quo</th>
<th>Not reported by any of the systematic reviews</th>
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<tbody>
<tr>
<td>1 systematic review found that accreditation generates higher costs on healthcare organizations due to the need for provider trainings, hiring additional providers, maintenance of infrastructure and buying or upgrading equipment (Greenfield &amp; Braithwaite, 2008).</td>
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<td>4 single studies found that centers that are accredited have lower mean lengths of stay and lower charges, which results in lower cost on both the patient and the organizations (Morton et al., 2014; Kwon et al., 2013; Jafari et al., 2013; Nguyen et al., 2012).</td>
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### Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the approach element were pursued)

| 2 systematic reviews reported consistent findings for the effect of accreditation programs on promoting change, professional development and improving organizational efficiency and staff circumstances. However, inconsistent findings (with both improvements and a lack of measurable effects) were reported for professions' attitudes to accreditation, organizational impact, financial impact, quality measures and program assessment (Greenfield, 2008, Greensfield et al, 2012). |  |
Element 3

1 systematic review concluded that the lack of conclusive effect of accreditation programs on patient outcomes may simply mean that, due to the heterogeneity of study design and methods, much uncertainty remains regarding its putative effects. The complexity of hospital organizations and their heterogeneous components further add to the methodological challenge (Brubakk et al., 2015).

Element 4
Empower patients to enhance quality of care and patient safety

Four systematic reviews found that patient empowerment reduces the knowledge gap between healthcare providers and consumers, fosters an increase in agreement and shared decision-making about the use of health services and increases the efficiency of the healthcare system (Tempfer & Nowak, 2011; O'Connor et al., 2009; Nilsen et al., 2006; Crawford et al., 2002).

One way to empower patients is through educating them and their families. Two systematic reviews found that patient education material helps patients adhere and comply with clinical guidelines, improves quality of care and reduces error and readmission rates (Bes et al., 2011; McPherson et al., 2001).

Eight primary studies encouraged forming patient advisories and ombudsman programs as well as tools to empower patients (Hollister & Estes, 2013; John, 2011; Wachter, 2010; Huss et al., 2010; Persson, 2008; Bismark et al., 2006; Entwistle et al., 2005; Wagner et al., 2001).

Table 4  Key findings from systematic reviews and single studies

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<thead>
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<th>Category of finding</th>
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<tr>
<td>Benefits</td>
<td>4 systematic review and 10 studies found that patient empowerment reduces the knowledge gap between healthcare providers and consumers, which fosters an increase in agreement and shared decision-making between the two parties about health services, strategies and policies as well as broadens the acceptance of healthcare and increases the efficiency of the healthcare system and patient safety (Boivin et al., 2014; Groene et al., 2014; Davis et al., 2011; Légaré et al., 2011; Tempfer &amp; Nowak, 2011; O’Connor et al., 2009; Davis et al., 2007; Coulter et al., 2006; Davies et al., 2006; Nilsen et al., 2006; Koutantji et al., 2005; Chambers, 2003; Abelson et al., 2003; Crawford et al., 2002).</td>
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5 systematic reviews found that engaging and educating family members in shared decision-making improves quality of care.
since they will be taking care of the patient later on and, thus, reduces the possibility of adverse events and enhances patient safety due to their ability to identify medical errors that occur at healthcare organizations (Kripalani et al., 2007; Gaston & Mitchell, 2005; Nose & Barbui, 2003; Sarkisian et al., 2003; McDonald et al., 2002).

2 systematic reviews found that patient education is important specifically in preventing adverse drug events and hospital re-admissions (Spinewine et al., 2013; Miller et al., 2007).

2 systematic reviews found that patient education material helps patients adhere and comply with clinical guidelines, improves quality of care and reduces error and readmission rates (Bes et al., 2011; McPherson et al., 2001).

2 studies found that forming advisories to help patients when medical errors or patient safety mishaps occur, ensures that the voices of patients and their families are considered as policies are being developed (Wachter, 2010), and helps reduce medical errors (Entwistle et al., 2005). Advisories also divert patients away from news media coverage which is their main source of information and provides them with more accurate patient education (Entwistle et al., 2005).

Another way to empower patients is through developing ombudsmen programs:

1 study found that ombudsman programs empower patients and their families through supporting family councils by providing them with information and support as well as suggested strategies, techniques and approaches to use in addressing council concerns (Persson, 2008).

2 studies found that ombudsman programs help in continuous improvement of clinical governance issues, and in proposing new institutional reforms (Huss et al., 2010; Bismark et al., 2006).

3 studies found that ombudsman programs can have an impact on patient outcomes, where complaints are used to improve patient safety (Hollister & Estes, 2013; Bismark et al., 2006; Wagner et al., 2001).

A study found that ombudsman programs play a role when governments do not act properly or fairly or provide poor services after patients have filed complaints (John, 2011). They also help law enforcement obtain the evidence needed whenever an error occurs, and provide
healthcare organizations and state governments with efficient ways to meet patients’ needs, as well as reduce regulatory agencies’ visits (Hollister & Estes, 2013).

**Potential harms**

A cluster randomized trial found that lack of patients’ understanding of scientific literature or resource implications could lead to unrealistic decisions, and that unbalanced recruitment of patients to be involved in decision-making may under represent the views of vulnerable patients with complex conditions or those from disadvantaged socio-economic groups (Boivin et al., 2014).

**Cost and/or cost effectiveness in relation to the status quo**

2 systematic reviews found that patient involvement increased cost on healthcare organizations, mainly due to cost of compensation for their time, meal, travel expenses, coordination of patient recruitment and hiring facilitators (Domecq et al., 2014; Nilsen et al., 2006).

**Uncertainty regarding benefits and potential harms (so monitoring and evaluation could be warranted if the approach element were pursued)**

1 systematic review and 2 studies were not capable of generating a general assessment as well as a comparative analysis of the various published methods of consumer involvement in healthcare (Tempfer & Nowak, 2011; Boivin et al., 2011; Crawford et al., 2002).

2 systematic reviews found it difficult to assess the effectiveness of patient empowerment on improving health care and safety because different studies yielded different results (Tempfer & Nowak, 2011; Schwappach, 2009).

2 systematic reviews and 1 study indicated that there is no any study evaluating the impact of integration of patient involvement in healthcare services improvement (Mockford et al., 2012; Brett et al., 2011; Crawford et al., 2002).

1 systematic review pointed out that no one study evaluated the effectiveness of patient education campaigns (Schwappach, 2009).

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**Implementation considerations**

Barriers to implementation are at the patient, professional, organizational and system levels.

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<th>Level</th>
<th>Barriers</th>
<th>Counterstrategies</th>
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<td>Patient</td>
<td>Patients refusal to be involved in shared decision making and quality improvement due to their low health literacy rate and the lack of encouragement by healthcare workers to be involved (Davis et al., 2011; Wallace &amp; Sembali, 2008; Marella et al., 2007; Waterman et al., 2006; Hibbard et al., 2005)</td>
<td>Develop a program, like the United Kingdom’s INVOLVE program (INVOLVE 2015). Conduct campaigns such as the “speak up” and “it’s ok to ask” campaigns (The Joint Commission, 2015; National Institute for Health Research, 2015).</td>
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<td>Professional</td>
<td>Resistance of providers to adopt</td>
<td>Reduce complexity of guideline</td>
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<td>Organizational</td>
<td>Cost of training employees, employing new personnel and involving patients (Boivin et al., 2014; Domecq et al., 2014; Aggarwal et al., 2010; Wachter, 2010)</td>
<td>Allocate specific funds for patient safety in general and specifically for trainings, staffing and patient empowerment (Wachter, 2010; Devers et al., 2004).</td>
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<td>Availability of expert faculty, competing curricular/service demands, and institutional culture may affect implementation of patient safety and quality improvement in medical curriculum (Jones et al., 2015).</td>
<td>Quality improvement teaching programs should make the time required for trainee work-hour rules, competing demands and for faculty involvement clear. Also, dedicate a selected number of faculty staff to provide curriculum requirement (Jones et al., 2015).</td>
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<td>Insufficient expertise and resources, lack of information on instructions and data collection, lack of managerial support and organizational commitment and technical issues like setting sustainable standards may hinder implementation of appraisals and audits (Vahidi et al., 2013)</td>
<td>Intensive feedback mechanisms, effective training programs, high capacity for quality improvement, instructional support, participation of local ownership, resource commitment and rational basis for allocation and evidence-based researches for setting standards promote effectiveness of audit programs (Vahidi et al., 2013).</td>
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<td>Punitive environment in health organizations and workload discourages professionals from reporting of medical errors (Sirriyeh et al., 2010; Evans et al., 2006).</td>
<td>Promote a non-punitive environment (El-Jardali et al., 2011). Simplify incidents reports and provide feedback on data (Mahajan, 2010; Evans et al., 2006).</td>
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<td>System</td>
<td>Accountability and clarity of responsibilities and roles related to implementation of quality improvement and patient safety initiatives (El-Jardali and Fadlallah, 2015).</td>
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<td></td>
<td>Establish national quality and patient safety policies that set out goals, indicators, clarify roles and responsibilities and identify incentives and non-incentives (El-Jardali and Fadlallah, 2015).</td>
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<td>Selection of performance indicators that are valid, reliable, applicable, and relevant to accreditation, standardization of methods of collection and reporting systems and establishment of systems to counter data manipulations</td>
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<td>Use risk adjustment to even out the playing field across providers regarding severity of patient mix, supply data via an online tool to enable auditing and checks to control “gaming” behavior, and impose penalties on hospitals failing to submit accurate data (So &amp; Wright 2012). Consider establishing through public/private partnerships a national institution for measuring, monitoring and benchmarking of quality and providing guidance and support to healthcare organizations (El-Jardali et al, 2011a)</td>
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Next Steps
Next Steps

The aim of this policy brief is to foster dialogue informed by the best available evidence. The intention is not to advocate specific policy options/elements or close off discussion. Further actions will flow from the deliberations that the policy brief is intended to inform. These may include:

→ Deliberation amongst policymakers and stakeholders regarding the policy elements described in this policy brief.

→ Refining elements, for example by incorporating, removing or modifying some components
Knowledge to Policy Center draws on an unparalleled breadth of synthesized evidence and context-specific knowledge to impact policy agendas and action. K2P does not restrict itself to research evidence but draws on and integrates multiple types and levels of knowledge to inform policy including grey literature, opinions and expertise of stakeholders.
Policy Brief
Addressing Medical Errors in the Lebanese Healthcare System

Knowledge to Policy (K2P) Center
Faculty of Health Sciences
American University of Beirut
Riad El Solh, Beirut 1107 2020
Beirut, Lebanon
+961 1 350 000 ext. 2942 - 2943
www.aub.edu.lb/K2P
K2P@aub.edu.lb

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