



THE UNIVERSITY OF  
NEW SOUTH WALES



CENTRE FOR CLINICAL GOVERNANCE RESEARCH

# A REVIEW OF HEALTH SECTOR ACCREDITATION RESEARCH LITERATURE



## HEALTH SECTOR ACCREDITATION RESEARCH LITERATURE REVIEW AND SELECTED CITATIONS

*The Centre for Clinical Governance Research in Health undertakes strategic research, evaluations and research-based projects of national and international standing with a core interest to investigate health sector issues of policy, culture, systems, governance and leadership*

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## **1. Introduction**

This paper provides a review of health sector accreditation research literature. The literature was examined to identify published articles, reports or documents concerned with research into health sector accreditation. Literature that are descriptions, commentaries or discussions about health sector accreditation was excluded. A comprehensive literature search has been undertaken, and the results analysed. Available citations and information about health accreditation organisations have been included as appendixes (see Appendix 1).

## **2. Method**

The research used a multi-method strategy and was conducted from March to May 2007. A similar research strategy has been used previously in other literature searches (Travaglia and Braithwaite 2006; Bak et al. 2004a; Bak et al 2004b). In conducting the search, where possible, complete references were downloaded into Endnote, a database referencing program, for subsequent assessment.

The first search strategy was a rigorous interrogation of three electronic bibliographic databases. Literature was examined from the Medline database from 1950, EMBASE from 1980 and nursing and allied health literature from CINAHL from 1982.

The second search strategy involved consultation with health sector accreditation agencies to identify additional materials. The strategy involved searching their websites and, where possible, through discussion with key agency personnel.

The third search strategy involved a “snowballing” technique of following up key references (discussion papers, articles or reports) via the internet and search engines. The Web-of-science, Google Scholar and Scirus internet search engines were employed to locate documents. The internet literature from 1966 or since inception was searched.

### **2.1 Search strategy one**

The initial search utilised the broad keywords such as “quality”, “quality assurance”, “quality indicators” and “quality of health care”. These keywords produced a large number and wide range of references, the majority of which were not relevant to the task. For example, a search in Medline with these terms returned a result of over 2,900,000 items. After exploration and testing two key search terms – “accreditation” and the “Joint Commission on Accreditation of Healthcare Organizations” or “JCAHO” – were identified as relevant to the task. Within each of the databases the search terms were searched separately. When combined the search identified 33,935 references.

Within the results obtained a further narrowing was undertaken by searching for those references associated with “research”. That is, “accreditation and research” and “JCAHO and research”. This identified 3,921 references, which with the removal of duplicates left a total of 3,029.

An analysis of the abstracts of these references was conducted. This identified 58 studies specific to accreditation research. The remainder were discussion or commentary pieces about accreditation or clinical research. The search terms and their results are outlined in the following table (Table 1).

**Table 1: Search results from the first search strategy**

SEARCH OPERATIONS	DATABASE RESULTS: NUMBERS OF ARTICLES			TOTAL
	MEDLINE	EMBASE	CINAHL	
1. Accreditation	8,590	11,735	2,655	23,424
2. JCAHO	5,648	578	4,285	10,511
3. Total of 1. and 2.				33,935
4. Accreditation and research	2,135	1,054	166	3,355
5. JCAHO and research	314	79	173	566
6. Combining totals from 4. and 5.				3,921
7. Removing duplicates from 6.				3,029
8. Analysis of 7. (accreditation research literature)				58

## 2.2 Search strategy two

The second search covered the following twenty-two national agencies and one international organisation (Table 2; see Appendix 2 for details). A number of the agencies' websites were in their native language and were either relatively inaccessible or contained no articles of interest; these are marked with an asterisk (\*). The Irish Health Services Accreditation Board (IHSAB), the United Kingdom CHKS and Australian Council on Healthcare Standards (ACHS) provided details on their respective websites about accreditation research activities in which they are engaged. From this group one published document was retrieved.

The International Society for Quality in Health Care (ISQua) convened in October 2005 a 'Research Working Group' (RWG) to collate information from member agencies about accreditation research. This group reported research having been completed, in progress or being planned by their member agencies. The following agencies are currently conducting, but have yet to report publicly about their research: ACHS, IHSAB, Australian General Practice Accreditation Limited (AGPAL), Haute Autorité de santé (HAS), Italian Society for Quality of Health Care, JCAHO, Canadian Council on Health Services Accreditation (CCHSA), and the Spanish organisation Fundación Avedis Donabedian (FAD).

**Table 2: Agencies contacted in the second search strategy**

COUNTRY	AGENCY
International	The International Society for Quality in Health Care (ISQua)
Argentina*	Technical Institute for Accreditation of Healthcare Organisations
Australia	Australian General Practice Accreditation Limited (AGPAL)
Australia	Australian Council on Healthcare Standards (ACHS)
Brazil*	Consórcio Brasileiro de Acreditação (CBA)
Canada	Community Health Accreditation Body
Canada	Canadian Council on Health Services Accreditation (CCHSA)
France	Haute Autorité de santé (HAS)
Germany*	KTQ (Kooperation für Transparenz und Qualität im Gesundheitswesen GmbH)
India	National Accreditation Board for Hospitals & Healthcare Providers (NABH)
Ireland	Irish Health Services Accreditation Board (IHSAB)
Italy*	Italian Society for Quality of Health Care (ITAES)
Japan*	Japan Council for Quality Health Care
Malaysia	Malaysian Society for Quality in Health (MSQH)
Netherlands	Netherlands Institute for Accreditation of Hospitals (NIAZ)
New Zealand	Quality Health New Zealand
Poland*	Centrum Monitorowania Jakości w Ochronie Zdrowia
Portugal*	Instituto da Qualidade em Saude (IQS)
Spain*	Fundación Avedis Donabedian (FAD)
Southern Africa	Council of Health Service Accreditation South Africa (COHSASA)
United Kingdom	CHKS
United States	Joint Commission on Accreditation of Healthcare Organizations (JCAHO)
United States	Commission on Accreditation of Rehabilitation Facilities (CARF)

### 2.2.1 Search strategy three

The “snowballing” technique identified an additional 7 documents. These included organisational reports and documents, and peer reviewed articles.

## 3. Findings

The final number of documents relating to accreditation and research, incorporating academic articles and organisational reports, was 66. This literature can be categorised in two ways:

1. Calls for research studies into accreditation; and,
2. Research into the impact or effectiveness of accreditation.

### 3.1 Calls for research studies into accreditation

The literature is populated by writers calling for research into accreditation (for example, in recent years there have been calls from Øvretveit and Gustafson 2003; Pomey et al. 2005; and, Shaw 2003). Others have reiterated the request (Bak et al. 2004a; Baker and Dunn 2006; Fernandopulle et al. 2003; Mays 2004; Øvretveit 2005; Shaw 2001). Commentators make the case that the evidence to support the claims of accreditation programs is lacking. The following comments are typical of the concern expressed:

“Many countries are embarking on accreditation programs without any evidence that they are the best use of resources for improving quality and no evidence about the effectiveness of different systems and ways to implement them.” (Øvretveit and Gustafson 2003: 759)

Other authors with more specific interest are more direct:

“While there is a great deal of rhetoric about accreditation in the radiologic sciences, research to support either type of accreditation within the radiologic sciences is absent.” (Baker and Dunn 2006: 128)

### 3.2 Research into the impact or effectiveness of accreditation programs

The impact or effectiveness of accreditation programs has been researched with a variety of focuses and to varying degrees. Ten categories of research were identified (Table 3). These are summarised below. In addition, the studies have been reviewed and their main characteristics are reported in appendixes (see Appendix 3).

**Table 3: Categories of research on the impact or effectiveness of accreditation programs**

CATEGORY
3.3.1 Professions' attitudes to accreditation
3.3.2 Promote change
3.3.3 Organisational impact
3.3.4 Financial impact
3.3.5 Quality measures
3.3.6 Program assessment
3.3.7 Consumer views or patient satisfaction
3.3.8 Public disclosure
3.3.9 Professional development
3.3.10 Surveyor issues

### 3.3.1 Professions' attitudes to accreditation

Some studies have examined the health professions' attitudes to accreditation. These present contrasting views of professional attitudes, with both support for and criticism about accreditation programs expressed.

In an assortment of studies health professionals supported or were in agreement about their respective accreditation standards (Baker, Morrone and Gable 2004; Casamassion and Wilson 1999; Gough and Reynolds 2000; Macfarlane, Tavabie and Descombe 2003; Reznich and Mavis 2000; Scanlon and Hendrix 1998). However, all studies with one exception, which recorded improvement due to accreditation (Gough and Reynolds 2000), did not attempt to examine the impact of the programs.

Other research reports health professionals' critical perspectives on accreditation. These studies suggest that health professionals hold concerns about their respective accreditation programs, including: the program is difficult and time consuming for the organisation to use (Stoelwinder 2004; Verstraete, van Boeckel, Thys and Engelen 1998); the program is perceived to add little value to patient care (Fairbrother and Gleeson 2000; Stoelwinder 2004); there are high (direct and indirect) costs of the program (Fairbrother and Gleeson 2000); there is a perceived lack of consistency amongst assessors (Grenade and Boldy 2002); and there are problems with accreditation standards (Pongpirul et al. 2006). One further study, an Indian study, examined stakeholder views about the proposed introduction of an accreditation program. This work identified both support for, and caution about, the proposed program (Nandraj, Khot, Menon and Brugha 2001).

Professionals from rural health services have been asked their reasons for failing to participate in an accreditation program (Brasure, Stensland and Wellever 2000; Casey and Klingner 2000). The most significant barriers identified were cost (Brasure, Stensland and Wellever 2000) and difficulty in meeting standards and collecting data (Casey and Kingner 2000).

### **3.3.2 Promote change**

The activity of preparing and undergoing accreditation has been shown to promote change in health organisations (Duckett 1983; Scrivens, Klein and Steiner 1995; Juul et al. 2005; Pomey, Contandriopoulos, Francois and Bertrand 2004). A study in Australia monitored for two years a group of 23 hospitals which applied for accreditation and then compared them with those which had not. The accredited hospitals showed significant change in six areas, most notably in nursing organisation and safety (Duckett 1983). Research in one organisation revealed changes instigated by accreditation as it provided an opportunity for health professionals to reflect on organisational practices. The organisation then reportedly changed policy, decision making behaviours and introduced a continuous quality program (Pomey, Contandriopoulos, Francois and Bertrand 2004). Similarly, participating in an accreditation program and a randomised clinical trial led to significant improvements in both the dissemination and quality of clinical guidelines (Juul et al. 2005). A review of the development of several accreditation programs noted their convergence and widespread impact both on individual organisations and at a system level (Scrivens, Klein and Steiner 1995).

### **3.3.3 Organisational impact**

The organisational impact of accreditation programs remains unclear. One study failed to identify any differences between accredited and non-accredited (rehabilitation) programs (Mazmanian, Kreutzer, Devany and Martin 1993). Another study found improved outcomes when a (trauma) health service was accredited (Simons et al. 2002). A review of accredited hospitals in France showed no significant differences in accreditation decisions according to their status and size (Daucourt and Michel 2003). However, a trend was identified that the larger hospitals received more numerous and serious recommendations.

A study reported enhancements to patient care through three organisational strategies introduced as a result of participating in an accreditation program (Sheahan 1999). The strategies were a patient communication strategy, an evaluation strategy and a quality improvement strategy. A participative management style and organisational support for the accreditation process has been shown to affect the outcome positively (Peterson 2003). There is a large-scale study currently in progress examining the relationship between accreditation and organisational performance (Braithwaite et al. 2006).

### **3.3.4 Financial impact**

The financial costs of accreditation for organisations is an under researched area. There are contrasting assessments made in the few studies that have been conducted. Two studies judged the costs as high for an individual organisation and questioned whether accreditation was an appropriate use of resources (Fairbrother and Gleeson 2000; Rockwell, Pelletier and Donnelly 1993). Examining an accreditation program in a developing country, the overall



financial viability of the program and costs for individual organisations was noted as unsustainable (Bukonda et al. 2003). Another study noted the costs incurred in participating in accreditation, and argued that these should be viewed as an essential investment (Mihalik, Scherer and Schreter 2003).

Recent work examined the costs for a specific health service (methadone treatment sites). It concluded there were no significant financial differences for organisations of different size and location (Zarkin, Dunlap and Homsy 2006). However, the study also reported that per-patient accreditation costs were substantially larger for small and rural organisations compared to medium to large and urban locations.

### **3.3.5 Quality measures (incorporating clinical indicators, quality indicators, clinical guidelines or clinical performance measures)**

Quality measures incorporate items defined as clinical indicators, quality indicators, or clinical performance measures. The relationship between quality measures and accreditation is complex. In some work there does not appear to be a direct relationship between the two. No relationship is generally found between a specified quality measure and accreditation outcome (Dean Beaulieu and Epstein 2002; Grasso, Rothschild, Jordan and Jayaram 2005; Griffith, Knutzen and Alexander 2002; Miller et al. 2005). One study showed that improved compliance with accreditation standards had little or no effect on clinical indicator performance (Salmon, Heavens, Lombard and Tavrow 2003). A weak relationship between accreditation and quality measures was identified in one instance (Hadley and McGurrin 1988). In a similar vein, a relationship did hold for health plan scores when compared with accreditation (Dean Beaulieu and Epstein 2002). However, in the same study, the link between accreditation and patient-reported measures of quality and satisfaction was found to be unrelated.

For some time accreditation agencies have been developing, implementing and monitoring quality measures in health care organisations. While not always an essential part of their respective accreditation programs, some quality measures have been shown to improve care outcomes in health organisations (Collopy 2000; Collopy et al. 2000; Gabriele et al. 2006; Silver, Geis and Bateman 2004; VanSuch et al. 2006; Williams et al. 2005; Williams et al. 2006). Similarly, participation in an accreditation program and a randomised clinical trial promoted improvement in a quality measure, in this instance a clinical guideline (Juil et al. 2005). However, another study found the effects of quality improvement activities were often small and inconsistent (Borenstein et al. 2004). An important argument has been made that different quality measures, developed and implemented in different ways, should not be expected to promote similar outcomes (Gross, Braun, Kritchevsky and Simmons 2000).

Conflicting findings hold in comparing accredited and non-accredited hospital quality indicator performance. Quality indicator results from hospitals that voluntarily participate with quality improvement organisations could not be differentiated from those hospitals that do not participate (Snyder and Anderson 2005). Similarly, no difference could be found between accredited hospitals, non-accredited hospitals and nursing homes for medication errors (Barker et al. 2002). However, another study revealed that accredited hospitals performed better on a range of quality indicators than did non-accredited hospitals, albeit that there was considerable variation of performance within the accredited hospitals (Chen, Rathore, Radford and Krumholz 2003).

### **3.3.6 Program assessment**

Accreditation programs have been assessed and researched for their validity (Cunha and Feldman 2005; Gillon, Buetow, Wellingham and Talboys 2003; Gough and Reynolds 2000; Grasso, Rothschild, Jordan and Jayaram 2005; Hampel and Hastings 1993; Huda et al. 2002; Hurst 1997; Jain and Willett 2006; Kreig 1996; Reznich and Mavis 2000). The findings from this research are inconsistent. Accreditation programs in six studies were deemed to be credible (Gillon Buetow, Wellingham and Talboys 2003; Gough and Reynolds 2000; Hampel and Hastings 1993; Hurst 1997; Kreig 1996; Reznich and Mavis 2000). The validity of accreditation programs was questioned in other cases and authors have argued for the need for improvements in or clarification to standards (Cunha and Feldman 2005; Gough and Reynolds 2000; Huda et al. 2002; Hurst 1997; Jain and Willett 2006). In one instance, the validity of an accreditation program as a measure of patient safety was questioned, based on its failure to identify a highly error prone medication usage system (Grasso, Rothschild, Jordan and Jayaram 2005).

Two descriptive studies examined the development or implementation of accreditation programs in developing countries (Bukonda et al. 2003; Whittaker, Green-Thompson, McCusker and Nyembezi 2000). In one the milestones achieved and challenges facing the program were detailed (Bukonda et al. 2003). In the other, an overview of the program and its development was presented (Whittaker, Green-Thompson, McCusker and Nyembezi 2000).

An argument has been made in favour of specialised organisations that perform accreditation and establish standards for healthcare delivery, at least in the United States (Viswanathan and Salmon 2000). While leaving open the question as to whether such accrediting organisations are ensuring high quality healthcare, the authors express support for the range of specialised accrediting organisations and programs. The difficulties experienced by an accrediting organisation in the United Kingdom have also been examined. The study suggested that there was an imbalance between setting and implementing the standards of the accreditation program (Jain and Willett 2006).

### **3.3.7 Consumer views or patient satisfaction**

Although the relationships between consumer views or patient satisfaction and accreditation remain largely unexplored issues, the limited work that has taken place found no relationships (Dean Beaulieu and Epstein 2002; Heuer 2004; Greco, Sweeney, Brownlea and McGovern 2001). An examination of the relationship between not-for-profit hospital accreditation scores and patient satisfaction ratings found no association, either summatively or formatively (Heuer 2004). Similarly, patient-reported measures of quality and satisfaction between accredited and non-accredited health plans could not be differentiated (Dean Beaulieu and Epstein 2002).

Patients' and health professionals' views about compliance with accreditation standards have been compared. While differing in specific details, the satisfaction rank order correlations for the two groups have been found to be very similar (Durieux, Bissery, Gasquet and Coste 2004). A survey of patients during the accreditation of general practices showed patients scored practice issues (access, availability and information availability) lower than doctors' interpersonal skills (Greco, Sweeney, Brownlea and McGovern 2001).

### **3.3.8 Public disclosure**

A study examined the impact of accreditation outcome and public disclosure. The work by Ito and Sugawara (2005), conducted in Japan, reported several findings: accreditation scores were positively related to public disclosure of hospital accreditation reports; public hospitals were significantly more likely to publicly disclose than private hospitals; larger hospitals were significantly more likely to participate in public disclosure than smaller hospitals; and disclosing hospitals scored higher than non-disclosing hospitals on measures of patient focused care and efforts to meet community needs.

### **3.3.9 Professional development**

A link between accreditation programs and the development of health professionals has been established. The association has been shown to be positive (Dickison, Hostler, Platt and Wang 2006; McCleish 2002; Tracey, Arroll and Richmond 1998). However, dissenting findings are noted (Gropper 1996).

Health professionals training in an accredited education program were more likely to pass a credentialing exam than their colleagues in a non-accredited program (Dickison, Hostler, Platt and Wang 2006). Extending this finding, an accreditation program had a small but beneficial impact on the ongoing professional education of health (medical) professionals (Tracey, Arroll and Richmond 1998). Accreditation affiliation of a health education program has been shown to have a positive influence on individuals seeking professional organisation membership (McCleish 2002).

The accreditation of a health program appears unrelated to professional performance (Gropper 1996). No distinction between the conduct of health professionals who trained or did not train in an accredited program could be distinguished in the first year. Counter-intuitively, in the second year the performance of those who trained in a non-accredited program was assessed to be better than their colleagues from accredited programs.

### **3.3.10 Surveyor issues**

Research into health care accreditation surveyors is limited. One study examined the skills and qualities of surveyors and the challenges they faced when undertaking accreditation surveys (Hurst 1997). A comparative study examined the similarities and differences of surveyors across six accreditation programs (Bohigas et al. 1998). A more recent Thai study, which also considered the opinions of health professionals, demonstrated that both groups shared a similar prioritising of concerns. The surveyors focused more attention on care related items than did the health professionals, who were focused on multidisciplinary process related problems associated with the program (Pongpriul et al. 2006).

## **4 Discussion and conclusion**

Although we searched in a multi-method, comprehensive manner, electronic research indexing is generally problematic and we may have missed some key literature. Searching relevant accreditation bodies' websites and personally contacting agencies to gather data yielded additional references and information of value.

The necessity for an empirically grounded, comprehensive evidence base for accreditation has long been recognised. Without this the varying positive and negative views about accreditation will remain anecdotal, influenced by ideology or preferences, and driven by such biases.

This review of health care accreditation research literature reveals a complex picture. There are mixed views and inconsistent findings. Only in two categories were consistent findings recorded: promote change and professional development. Inconsistent findings were identified in five categories: the professions' attitudes to accreditation; organisational impact; financial impact; quality measures; and program assessment. In the remaining three categories – consumer views or patient satisfaction; public disclosure; and surveyor issues – we did not find sufficient studies to draw conclusions.

A positive note to emerge from this search has been the identification of a number of national health care accreditation organisations and researchers presently engaged in empirical activities. There seems to be purposeful work leading towards constructing an extensive evidence base.

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## 6 Appendix 1: Selected citations and abstracts

Bak P, Bocker B, Muller WD, Lohstrater A, Smolenski UC. Certification and accreditation systems as an instrument of quality management in the rehabilitation (part 1) identification of most widely used systems. *Physikalische Medizin Rehabilitationsmedizin Kurortmedizin*. 2004a;14(5):243-8.

Purpose: In times of scarcity of resources due to demographic development and increasing demand on rehabilitation services quality assurance is gaining importance for allocation decisions. Since quality assurance became a legal obligation, health care facilities are widely using international certification and accreditation systems for proving quality of services delivered. Despite the importance of this problem, only poor evidence has been provided yet in terms of effectiveness of implementation of QM systems. The purpose of this study was to identify certification and accreditation systems most frequent cited in the literature. Methods: A systematic literature search was undertaken to identify relevant articles for this review using electronic databases MEDLINE, EMBASE, SERFILE, PubMed, PEDro and Web of Science from 1980 to date. In addition, internet searching machines Google, Excite and Yahoo as well as not listed journals abstracts and proceedings were searched to approach further information. Identified cites were proved for relevance using standardised algorithm and assigned to medical specialties. Absolute amount of citations was used as criterion for five systems. Additionally most cited European system, a nation-wide one and the most frequently associated with rehabilitation were selected. Results: A total of 134 relevant publications were identified. Eight accreditation and certification systems were identified: DIN EN ISO, JCIA, JCAHO, EFQM, visitation models (visitatje, VIP, TOPAS), CARF, KTQ and DEGEMED. 228 citations could be assigned to the identified systems, 32 of them were relevant to rehabilitation. Conclusions: The application of certification and accreditation systems is rapidly gaining importance in rehabilitation and other health care sectors as a proof of the quality of services delivered. Further research is needed to improve evidence in terms of measurable benefit of accreditation and certification of health care providers for patients and other stakeholder. Especially experimental studies are needed to prove the positive influence of such systems and other sets of indicators on outcomes of rehabilitation.

Bak P, Bocker B, Muller WD, Lohstrater A, Smolenski UC. Certification and accreditation systems as an instrument of quality management in the rehabilitation (part 2) - characteristics of most widely used systems. *Physikalische Medizin Rehabilitationsmedizin Kurortmedizin*. 2004b;14(6):283-90.

Purpose: Since quality assurance became a legal obligation, health care facilities are widely using international certification and accreditation systems for proving quality of services delivered. Despite the importance of this problem, only poor evidence of effectiveness of implementation of such QM systems in terms of functional health has been provided to date. The purpose of this study was to investigate the most widely used certification and accreditation systems in terms of their efficacy in improving the functional outcome of the rehabilitation from the patients perspective. Methods: A systematic literature search was undertaken to identify relevant articles for this review using electronic databases MEDLINE, EMBASE, SERFILE, PubMed, PEDro and Web of Science from 1980 to date. In addition, internet searching machines Google, Excite and Yahoo as well as not listed journals abstracts and proceedings were searched to approach further information. A standardised set of criteria was used to investigate if, and to what amount, the implementation of the identified QM-systems can influence patients functional health due to treatment in rehabilitation facilities. Results: Eight accreditation and certification systems identified as the most frequently used (DIN EN ISO, JCIA, JCAHO, EFQM, visitation models (visitatje, VIP, TO-PAS), CARF, KTQ and DEGEMED) were characterised in terms of their outcomes in rehabilitation according to the ICF. There is a poor evidence that the implementation of QM systems under investigation would have a positive influence on patients functional health or deliver an economic benefit. None of the identified systems seems to be especially appropriate for outcome-based optimising of rehabilitation process. Conclusions: The application of certification and accreditation systems is rapidly gaining importance in rehabilitation facilities as a proof of the quality of services delivered. Further research is needed to improve evidence in terms of measurable benefit of accreditation and certification of health care providers for patients and other stakeholder. Especially experimental studies are needed to prove the positive influence of such systems and other sets of indicators on functional and economic outcomes of rehabilitation.

Baker S, Dunn D. Accreditation: The hallmark of educational quality. *Radiologic Technology*. 2006 Nov-Dec;78(2):123-30.

CONTEXT: Although accreditation issues have received attention over time, an accurate examination of accreditation has been absent within the radiologic science literature. OBJECTIVE: Using a literature review format, this review will define accreditation, provide a historical review of accreditation and purposes, identify the types of accreditation, discuss the major issues related to accreditation and explain how accreditation has affected the radiologic sciences. RESULTS: Although there is a great deal of rhetoric about accreditation in the radiologic sciences, research to support a particular type of accreditation within the radiologic sciences is absent. SUMMARY: Accreditation programs continuously are reviewed and changed, and accreditation organizations constantly strive to improve quality. In the past, the radiologic sciences have been influenced by accreditation decisions. The potential for future accreditation decisions affecting the radiologic sciences profession is possible.

Baker SS, Morrone AS, Gable KE. Allied health deans' and program directors' perspectives of specialized accreditation effectiveness and reform. *Journal of Allied Health*. 2004;33(4):247-54.

Criticisms, calls for change, and recommendations for specialized accreditation improvement have been made by individuals or groups external to the daily operations of allied health educational programs, frequently as opinion pieces or articles lacking a research foundation. While there is a great deal of concern related to specialized accreditation, little input has been provided from those within, and integral to, allied health educational programs affected by specialized accreditation standards. The purpose of this study was to explore the perspectives of selected allied health deans and program directors regarding specialized accreditation effectiveness and reform. Survey research was used to study perspectives of allied health deans and program directors located in four-year colleges and universities and in academic health centers and medical schools. Surveys were mailed to program directors offering programs in clinical laboratory sciences and medical technology, nuclear medicine technology, occupational therapy, physical therapy, radiation therapy, and radiography. Simultaneously, allied health deans located within these institutions were surveyed. A total of 773 surveys were mailed and 424 valid responses were received, yielding a response rate of 55%. The results affirmed the role of accreditation as an effective system for assuring quality in higher education. The role of specialized accreditation in improving the quality of allied health programs was clearly articulated by the respondents. Respondents voiced strong opposition to governmental or state-level requirements for accountability and emphasized the vital role of peer evaluators. Significant differences in deans' and program directors' perspectives related to specialized accreditation were evident. Whereas deans and program directors agreed with the purposes of specialized accreditation, they expressed less support for the process and effectiveness, and critique and reform, of specialized accreditation. Within those categories, deans were in greater support of critique and reform efforts related to specialized accreditation, while program directors were more supportive of the purpose, process, and effectiveness of specialized accreditation.

Barker K, Flynn E, Pepper G, Bates D, Mikeal R. Medication errors observed in 36 health care facilities. *Archives of Internal Medicine*. 2002 September 9, 2002;162(16):1897-903.

Background Medication errors are a national concern. Objective To identify the prevalence of medication errors (doses administered differently than ordered). Design A prospective cohort study. Setting Hospitals accredited by the Joint Commission on Accreditation of Healthcare Organizations, nonaccredited hospitals, and skilled nursing facilities in Georgia and Colorado. Participants A stratified random sample of 36 institutions. Twenty-six declined, with random replacement. Medication doses given (or omitted) during at least 1 medication pass during a 1- to 4-day period by nurses on high medication-volume nursing units. The target sample was 50 day-shift doses per nursing unit or until all doses for that medication pass were administered. Methods Medication errors were witnessed by observation, and verified by a research pharmacist (E.A.F.). Clinical significance was judged by an expert panel of physicians. Main Outcome Measure Medication errors reaching patients. Results In the 36 institutions, 19% of the doses (605/3216) were in error. The most frequent errors by category were wrong time (43%), omission (30%), wrong dose (17%), and unauthorized drug (4%). Seven percent of the errors were judged potential adverse drug events. There was no significant difference between error rates in the 3 settings ( $P = .82$ ) or by size ( $P = .39$ ). Error rates were higher in Colorado than in Georgia ( $P = .04$ ). Conclusions Medication errors were common (nearly 1 of every 5 doses in the typical hospital and skilled nursing facility). The percentage of errors rated potentially harmful was 7%, or more than 40 per day in a typical 300-patient facility. The problem of defective medication administration systems, although varied, is widespread.

Bohigas L, Brooks T, Donahue T, *et al.* A comparative analysis of surveyors from six hospital accreditation programmes and a consideration of the related management issues. *International Journal for Quality in Health Care*. 1998 February 1, 1998;10(1):7-13.

**Purpose.**To gather data on how accreditors manage surveyors, to compare these data and to offer them to the accreditors for improvement and to the scientific community for knowledge of the accreditation process and reinforcement of the credibility of these processes. **Data source.**The data were gathered with the aid of a questionnaire sent to all accreditors participating in the study. **Results.**An important finding in this comparative study is the different contractual relationships that exist between the accreditors and their surveyors. **Conclusion.**Surveyors around the world share many common features in terms of careers, training, work history and expectations. These similarities probably arise from the objectives of the accreditors who try to provide a developmental process to their clients rather than an 'inspection'. **Keywords:** accreditation, health policy, international comparisons

Braithwaite J, Westbrook J, Pawsey M, *et al.* A prospective, multi-method, multi-disciplinary, multi-level, collaborative, social-organisational design for researching health sector accreditation. *BMC Health Services Research*. 2006;6:113.

**BACKGROUND:** Accreditation has become ubiquitous across the international health care landscape. Award of full accreditation status in health care is viewed, as it is in other sectors, as a valid indicator of high quality organisational performance. However, few studies have empirically demonstrated this assertion. The value of accreditation, therefore, remains uncertain, and this persists as a central legitimacy problem for accreditation providers, policymakers and researchers. The question arises as to how best to research the validity, impact and value of accreditation processes in health care. Most health care organisations participate in some sort of accreditation process and thus it is not possible to study its merits using a randomised controlled strategy. Further, tools and processes for accreditation and organisational performance are multifaceted. **METHODS/DESIGN:** To understand the relationship between them a multi-method research approach is required which incorporates both quantitative and qualitative data. The generic nature of accreditation standard development and inspection within different sectors enhances the extent to which the findings of in-depth study of accreditation process in one industry can be generalised to other industries. This paper presents a research design which comprises a prospective, multi-method, multi-level, multi-disciplinary approach to assess the validity, impact and value of accreditation. **DISCUSSION:** The accreditation program which assesses over 1,000 health services in Australia is used as an exemplar for testing this design. The paper proposes this design as a framework suitable for application to future international research into accreditation. Our aim is to stimulate debate on the role of accreditation and how to research it.

Bukonda N, Tavrow P, Abdallah H, Hoffner K, Tembo J. Implementing a national hospital accreditation program: the Zambian experience. *International Journal for Quality in Health Care*. 2003 February 1, 2003;14(suppl\_1):7-16.

**Objectives.** This study describes the development of the Zambia Hospital Accreditation Program from 1997 to 2000. Ten major milestones are presented and discussed, as are challenges to the program. **Design.** Data were collected through a review of written documents, interviews with major stakeholders, hospital visits, and discussions with implementers. **Main outcome measures.** Zambia has successfully developed hospital standards that are relevant and potentially achievable by its hospitals. Half of Zambia's 79 hospitals have received educational surveys, and 12 have also received the full accreditation survey. Significant improvement in compliance with standards occurred in overall scores, and in seven out of 13 functional areas. However, the program has stalled due to lack of sufficient funds, lack of legal standing for the Zambia Health Accreditation Council, difficulties in retaining qualified surveyors, and indecision on how to handle accreditation results. In addition, serious resource constraints in hospitals and the need for ongoing facilitation have hindered their full participation in the program. It is estimated that the program costs about US\$10 000 per hospital to complete the cycle. **Conclusions.** Having a developing country sustain an accreditation program requires dedicated funds, government and donor commitment, continual adaptation, ongoing technical assistance to hospitals, and a functioning accreditation body. In Zambia, the accrediting Council was stymied by a heavy workload, lack of legitimacy and budget authority, and the government's indecision on incentives and feedback. Long delays arose between accreditation surveys and feedback of written results. Zambia has now begun to include some accreditation standards in performance audits and is considering decentralizing survey functions.

Casamassimo PS, Wilson S. Opinions of practitioners and program directors concerning accreditation standards for postdoctoral pediatric dentistry training programs. *Pediatric Dentistry*. 1999 Sep-Oct;21(6):354-8.

**PURPOSE:** This study was performed to assess opinions of program directors and practitioners about the importance and necessary numbers of experiences required by current accreditation standards for training of pediatric dentists. **METHODS:** A 32-item questionnaire was sent to all program directors of ADA-accredited postdoctoral pediatric dentistry training programs and to a random sample of 10% of the fellow/active membership of the American Academy of Pediatric Dentistry. **RESULTS:** An overall response rate of 56% was obtained from the single mailing. Practitioners and program directors differed significantly ( $P < \text{or} = 0.05$ ) only in their opinions about the number of submucosal and intravenous sedation cases required for proficiency of eight experiences surveyed. The two groups differed significantly in 3 of 12 areas in terms of importance attributed for practice of contemporary pediatric dentistry: initiating and completing a research paper, biostatistics/epidemiology, and practice management. Program directors had little difficulty obtaining required experiences, and program dependence on Medicaid did not negatively affect quality of education. **CONCLUSION:** Practitioners and program directors agreed on the importance of most experiences and activities required by current accreditation standards.

Chen J, Rathore SS, Radford MJ, Krumholz HM. JCAHO accreditation and quality of care for acute myocardial infarction. *Health Affairs*. 2003 Mar-Apr;22(2):243-54.

We examined the association between JCAHO accreditation of hospitals, those hospitals' quality of care, and survival among Medicare patients hospitalized for acute myocardial infarction. Hospitals not surveyed by JCAHO had, on average, lower quality (less likely to use aspirin, beta-blockers, and reperfusion therapy) and higher thirty-day mortality rates than did surveyed hospitals. However, there was considerable variation within accreditation categories in quality of care and mortality among surveyed hospitals, which indicates that JCAHO accreditation levels have limited usefulness in distinguishing individual performance among accredited hospitals. These findings support current efforts to incorporate quality of care in accreditation decisions.

Collopy BT. Clinical indicators in accreditation: an effective stimulus to improve patient care. *International Journal for Quality in Health Care*. 2000 Jun;12(3):211-6.

The Australian Council on Healthcare Standards (ACHS) established the Care Evaluation Program (CEP) of clinical performance measures in its accreditation program to increase the clinical component of that program and to increase medical practitioner involvement in formal quality activities in their health care organizations. From the introduction of a set of generic indicators in 1993 the program expanded through all of the various medical disciplines and from January 2000 there will be 18 sets (well over 200 indicators) in the program. More than half of Australia's acute hospitals (covering the majority of patient separations) are monitoring the indicators and reporting clinical data twice yearly to the ACHS. In turn they receive a 6-monthly feedback of aggregate and peer comparative results. The ACHS policy had no specific requirement for a set number of indicators to be monitored and it was not mandatory to achieve any specific data threshold to be accredited. However, where an organization's results differed unfavorably from those of its peers some action was expected. Qualitative information is also sent to the CEP and this has enabled a determination of the effectiveness of the indicators. There is documented evidence of improved management and numerous examples of improved patient outcomes. The program remains unique in the scope of the medical disciplines covered and in the formal provider involvement with indicator development. Both the clinical component of accreditation and clinician involvement in quality activities have been increased in an educational process. However, not all of the indicators are of equal value and a reduction in the number of indicators to a 'core' group of the most reliable and responsive ones is in process.

Collopy BT, Williams J, Rodgers L, Campbell J, Jenner N, Andrews N. The ACHS Care Evaluation Program: a decade of achievement. *Journal of Quality in Clinical Practice*. 2000 Mar;20(1):36-41.

In 1989 the Australian Council on Healthcare Standards (ACHS) embarked on a programme to develop acute health care clinical indicators in conjunction with the Australian medical colleges. Through a carefully structured stepwise process this collaboration established a 'World first' in 1993 with the introduction of the first set of indicators into the ACHS Accreditation programme. The programme remains unique in the formal involvement of

providers in the development process and in the scope of the clinical areas covered in acute health care. From the year 2000 there will be 18 sets (and over 200 indicators) from which health care organisations (HCOs) can choose to monitor the major services they provide. There remains no compulsion to address a specific number of indicators. The growth of the programme has been considerable with more than half of the nations' acute HCOs reporting their clinical indicator data (twice yearly) and it provides a reflection of the care given for the majority of patient separations in acute care. This reporting process allows HCOs to receive feedback on the aggregate results together with comparative peer group information for each indicator they address. In addition to numerous publications in peer reviewed journals an annual aggregate report, 'the Measurement of Care in Australian Hospitals' is published. It reports both qualitative and quantitative data on all indicator sets for the preceding year. Validity of the indicators is strengthened each year with a review process and reliability and reproducibility of the data can now be demonstrated. The clinical response to the indicators has been overwhelming and there is now documented evidence of numerous actions taken by HCOs to improve both the processes and the outcomes of patient care. The nation wide database can be expected to reflect trends in care over the next few years. The process of indicator refinement, however, will continue and it is likely that a reduction in the total number of indicators will occur with a core group of the more 'robust' indicators remaining. Further directions in indicator development are likely to be in the area of multidisciplinary care and in the assessment of longer-term outcomes. In addition to measures of the quality of care, hopefully, in time, health care providers will also take part in the establishment of measures of the appropriateness of that care.

Cunha I, Feldman L. Nursing service assessment: identification of process criteria in hospital accreditation programs. *Revista Brasileira de Enfermagem*. 2005 Jan-Feb;58(1):65-9.

Efforts to ensure quality in healthcare, to elaborate patterns and criteria have been a challenge in Brazil. This study aimed to identify the process of evaluation criteria applied to the nursing services adopted by Accreditation programs, and classify them in administrative, assistential and teaching research attributions. The study was exploratory, descriptive and quantitative. Collected data from 7 companies accredited by the National Accrediting Organization led into 8 models, which were divided into A, B and C groups. Seventy-nine criteria were identified; 32 from assistential, 32 administrative and 15 teaching-research processes. The nursing service was evaluated with focus in the C group. A small amount of assistential and learning research in A and B groups, showing that an increase in criteria would be necessary in order to obtain more accurate measuring.

Daucourt V, Michel P. Results of the first 100 accreditation procedures in France. *International Journal for Quality in Health Care*. 2003;15(6):463-71.

Purpose. To identify the areas of needed improvement that were most frequently identified in the first 100 accredited hospitals by the French Accreditation College (FAC) according to the standards manual. To compare the outcomes of accreditation procedures according to the status and size of the accredited hospitals. Data sources. We analyzed the first 100 summaries of accreditation reports available on the website of the Agence Nationale d'Accreditation et d'Evaluation en Sante (ANAES). Data extraction. Data were collected on hospitals, accreditation processes, and outcomes (decisions of the FAC). For each decision, we assessed the relationship with accreditation manual criteria, and analyzed their distribution by chapter. Results of data synthesis. Among the 100 accredited hospitals (40 public, 43 private, 17 mixed), nine were accredited without recommendations for improvement, 47 with recommendations, 40 with reservations, and four with major reservations. All of them received requests for improvement. No significant difference was found concerning the FAC decisions according to status and size of hospitals, although there was a trend that the larger the hospital, the more numerous and more serious the decisions of the FAC. The main topics addressed by decisions were those given high priority by the FAC (information given to patients and its traceability on patient records, and signing of prescriptions for medication). Conclusion. Despite wide heterogeneity in the summaries on accreditation and in FAC decision-making, this study provides an initial insight into common quality defects and ANAES priorities for hospitals in France.

Dean Beaulieu N, Epstein AM. National Committee on Quality Assurance health-plan accreditation: predictors, correlates of performance, and market impact. *Medical Care*. 2002 Apr;40(4):325-37.

CONTEXT: Accreditation of health care organizations has traditionally been considered a building block of quality assurance. However, the differences between accredited and nonaccredited health plans and the impact of accreditation on plan enrollment are not well understood. OBJECTIVES: To determine the characteristics of

plans that have submitted to accreditation review, the performance of accredited plans on quality indicators and the impact of accreditation on enrollment. DESIGN: The databases containing 1996 data on health plans' National Committee on Quality Assurance (NCQA) accreditation status, organizational characteristics, Health Plan Employer Data and Information Set (HEDIS) scores, and patient-reported quality and satisfaction scores were linked to compare accredited health plans to nonaccredited plans. We also combined longitudinal data sets (1993-1998) on accreditation and health plan enrollment. MAIN OUTCOME MEASURES: Mean performance of accredited and nonaccredited plans on HEDIS measures and patient-reported measures of quality; health plan enrollment changes. RESULTS: Accredited plans have higher HEDIS scores but similar or lower performance on patient-reported measures of health plan quality and satisfaction. Furthermore, a substantial number of the plans in the bottom decile of quality performance were accredited suggesting that accreditation does not ensure high quality care. Receipt of accreditation has been associated with increased enrollment in the early years of the accreditation program; however, plans denied NCQA accreditation do not appear to suffer enrollment losses. CONCLUSION: NCQA accreditation is positively associated with some measures of quality but does not assure a minimal level of performance. Efforts now underway to incorporate plan performance on HEDIS into criteria for accreditation seem warranted.

Dickison P, Hostler D, Platt TE, Wang HE. Program accreditation effect on paramedic credentialing examination success rate. *Prehospital Emergency Care*. 2006 Apr-Jun;10(2):224-8.

OBJECTIVES: Program accreditation is used to ensure the delivery of quality education and training for allied health providers. However, accreditation is not mandated for paramedic education programs. This study examined if there is a relationship between completion of an accredited paramedic education program and achieving a passing score on the National Registry Paramedic Certification Examination. METHODS: We used data from the National Registry Paramedic Certification Examination for calendar year 2002. Successful completion (passing) of the examination was defined as correctly answering a minimum of 126 out of 180 (70%) of the questions and meeting or exceeding the individual subtest passing scores. Accredited paramedic training programs were certified by the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP) on or before January 1, 2002. Candidates reported demographic characteristics including age, gender, self-reported race and ethnicity, education, and employer type. We examined the relationship between passing the examination and attendance at an accredited paramedic training program. RESULTS: A total of 12,773 students completed the examination. Students who attended an accredited program were more likely to pass the examination (OR = 1.65, 95% CI: 1.51-1.81). Attendance at an accredited training program was independently associated with passing the examination (OR = 1.58, 95% CI = 1.43-1.74) even after accounting for confounding demographic factors. CONCLUSION: Students who attended an accredited paramedic program were more likely to achieve a passing score on a national paramedic credentialing examination. Additional studies are needed to identify the aspects of program accreditation that lead to improved examination success.

Fairbrother G, Gleeson M. EQulP accreditation: feedback from a Sydney teaching hospital. *Australian Health Review*. 2000;23(1):153-62.

The Australian Council on Healthcare Standards' new Evaluation and Quality Improvement Program (EQulP) accreditation model reflects the worldwide trend towards incorporating continuous quality improvement and patient-focused care goals into hospital/health service accreditation. We conducted a post-EQulP feedback survey among senior clinical and managerial staff at a Sydney teaching hospital and identified significant levels of negative feedback among respondents. Principal concerns were related to perceptions that the process was unnecessarily unwieldy and that it offered little value in terms of patient care delivery for the significant amount of human resources it consumed.

Gabriele P, Malinverni G, Bona C, *et al*. Are quality indicators for radiotherapy useful in the evaluation of service efficacy in a new based radiotherapy institution? *Tumori*. 2006 Nov-Dec;92(6):496-502.

AIMS AND BACKGROUND: A number of documents assess the need for quality assurance in radiotherapy, which must be constantly monitored and possibly improved. In this regard, a system that confirms the quality of a department has been suggested and quality indicators have been used to improve the quality of the service. The National Health Service (Istituto Superiore di Sanita) approved a National Research Project to increase the quality of radiotherapy. The aim of the present study was to analyze the practical feasibility and efficacy of the

quality indicators elaborated by the National Health Service study group in a radiotherapy unit. **PATIENTS AND METHODS:** The voluntary accredited program was carried out by the Radiotherapy Department of IRCC in Candiolo from June to August 2002. We analyzed 8 of the 13 indicators according to the National Health Service Project. For this purpose, 133 consecutive patients treated in our Unit were analyzed, and the results are reported according to the appropriate indicator (number of staff related to patients treated, waiting list, case history accuracy, multidisciplinary approach, number of treatment plans performed by CT, number of fields per fraction, number of portal imaging performed per overall treatment, and patient satisfaction). **RESULTS:** The number of professional staff related to the number of patients treated was easy to calculate and it could be the basis for further evaluation. The overall waiting time was 55.4 days, and it changed for different radiotherapy goals. We obtained 80% conformity in case-history accuracy. The number of multidisciplinary consultations performed ranged between 50% and 100%. The number of CT plans was about 1.6 +/- 0.9 plans per patient. The mean number of fields performed per day and per patient is 3.5 +/- 1.7 and was in agreement with the fact that more than 50% of treatments in our Center were performed with conformal radiotherapy. An average of 16.7 +/- 10.0 portal imaging per case was performed. The percentage of patient satisfaction with the staff obtained a very high compliance. **CONCLUSIONS:** The self evaluation promoted by the National Health Service Project allows the monitoring of the activities of the service in order to assess critical factors and it can be the starting point to improve the quality of the service and to compare national and international quality assurance results.

Gillon M, Buetow S, Wellingham J, Talboys S. A practical approach to quality improvement: the experience of the RNZCGP practice standards validation field trial. *New Zealand Medical Journal*. 2003 Nov 21;116(1186):U682.

**AIM:** This paper describes the development, implementation and validation of general practice standards, supported by a continuous quality improvement (CQI) process that teaches practice teams how to work together to identify and enhance the quality of care they provide. **METHODS:** Practice standards were developed through consensus by key stakeholders in general practice, pre-tested in four practices, and refined and piloted in 20 practices throughout New Zealand during 1999. A further field trial was undertaken to validate the standards and test the process of practice assessment. During 2000-2001, 74 practices volunteered to be assessed against the standards. Sixty one general practitioners, practice nurses and practice managers, nominated from independent practitioner associations (IPAs) or primary care organisations (PCOs), were trained to undertake the assessments. **RESULTS:** On five of 13 variables, no statistically significant differences at the 0.05 level were identified between the practices in the field trial and a random sample of practices studied by Kljakovic. The Royal New Zealand College of General Practitioners (RNZCGP) standards were found to have excellent face validity and content validity, and good construct validity. Internal consistency was fair. Lessons from the evaluation have informed an improved version of the practice assessment tool. **CONCLUSIONS:** The validation field trial provided the RNZCGP with a framework and tool for an accreditation process based on the principles of CQI. The tool offers patients and other stakeholders a credible measure of quality and safety at the practice level through a process bridging quality control and quality improvement.

Grasso BC, Rothschild JM, Jordan CW, Jayaram G. What is the measure of a safe hospital? Medication errors missed by risk management, clinical staff, and surveyors. *Journal of Psychiatric Practice*. 2005 Jul;11(4):268-73.

Research in the last decade has identified medication errors as a more frequent cause of unintended harm than was previously thought. Inpatient medication errors and error-prone medication usage are detected internally by medication error reporting and externally through hospital licensing and accreditation surveys. A hospital's rate of medication errors is one of several measures of patient safety available to staff. However, prospective patients and other interested parties must rely upon licensing and accreditation scores, along with varying access to outcome data, as their sole measures of patient safety. We have previously reported that much higher rates of medication errors were found when an independent audit was used compared with rates determined by the usual process of self-report. In this study, we summarize these earlier findings and then compare the error detection sensitivity of licensing and accreditation surveys with that of an independent audit. When experienced surveyors fail to detect a highly error prone medication usage system, it raises questions about the validity of survey scores as a measure of safety (i.e., lack of medication errors). Replication of our findings in other hospital settings is needed. We also recommend measures for improving patient safety by reducing error rates and increasing error detection.



Greco M, Sweeney K, Brownlea A, McGovern J. The practice accreditation and improvement survey (PAIS). What patients think. *Australian Family Physician*. 2001 Nov;30(11):1096-100.

**BACKGROUND:** The Practice Accreditation and Improvement Survey (PAIS) is an endorsed instrument by the Australian General Practice Accreditation Limited (AGPAL) for seeking patient views as part of the accreditation of Australian general practices. **METHOD:** From September 1998 to August 2000, a total of 53,055 patients completed the PAIS within 449 general practices across Australia, which is about 8% of all Australian general practices. The validity and reliability of the PAIS instrument was assessed during the study. Patient views were also analysed via 27 items relating to doctors' interpersonal skills, access, availability and patient information. **RESULTS:** PAIS was found to have sound validity and reliability measures. Patient evaluations showed a range of scores for the 27 items (69-91%). Lower scoring areas were issues about access, availability and availability of information for patients. **DISCUSSION:** Users of general practice rate the doctors' interpersonal skills (capability) more highly than other practice service issues (capacity). There is, in patients' views, much more room for improving these capacity aspects of general practice. **CONCLUSION:** Future research should explore how practices act on the results of patient feedback, and which practice based strategies are more effective in raising standards of care from a patient's perspective.

Grenade L, Boldy D. The accreditation experience: views of residential aged care providers. *Geriatrics*. 2002;20(1):5-9.

The new approach to accreditation for residential aged care facilities, with its emphasis on appropriate management systems and continuous quality improvement, is intended to be an improvement on the previous one based on standards monitoring. Whilst all Western Australia (WA) facilities have now been accredited and the implementation appears to have gone relatively smoothly, there is a general feeling that the residential aged care sector is under considerable pressure. This is a report on the first phase of a study, the aim of which was to review the implementation of the accreditation process in WA from the perspective of service providers, as revealed in a series of interviews involving thirty participants. All respondents indicated positive aspects (e.g. ensuring high standards of care for residents, improved management). However, important limitations were identified, such as excessive demands on staff, a lack of consistency amongst assessors and the cost to facilities.

Griffith JR, Knutzen SR, Alexander JA. Structural versus outcomes measures in hospitals: a comparison of Joint Commission and Medicare outcomes scores in hospitals. *Quality Management in Health Care*. 2002;10(2):29-38.

Outcomes performance measures are increasingly important in health care. The Joint Commission on Accreditation of Healthcare Organizations (Joint Commission) continues to rely on structure and process measures based on accepted good practice. One of the first tasks in moving to a more outcomes-oriented approach is to compare the two measurement approaches. This article compares seven non-federal general hospital performance measures derived from Medicare against Joint Commission scores. Joint Commission measures are generally not correlated with outcome measures. The few significant correlations that appear are often counterintuitive. We conclude that a potentially serious disjuncture exists between the outcomes measures and Joint Commission evaluations.

Hadley T, McGurrin M. Accreditation, certification, and the quality of care in State hospitals. *Hospital and Community Psychiatry*. 1988 July 1, 1988;39(7):739-42.

Data on 216 state psychiatric hospitals were analyzed to determine whether accreditation by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) or certification by the Health Care Financing Administration (HCFA) were related to seven hospital characteristics generally accepted as reflecting quality of care. The characteristics were average cost per patient, per diem bed cost, total staff hours per patient, clinical staff hours per patient, percent of staff hours provided by medical staff bed turnover, and percent of beds occupied. While a majority of the hospitals had either JCAHO accreditation, HCFA certification, or both, analysis revealed a weak relationship between accreditation or certification status and the indicators of quality of care. Accredited or certified hospitals were, however, more likely to have higher values on specific indicators than hospitals without accreditation.

Hampel MJ, Hastings MM. Assessing quality in nursing home dementia special care units: a pilot test of the Joint Commission protocol. *Journal of Mental Health Administration*. 1993;20(3):236-46.

Dementia is a serious and growing public health problem in the United States. Nearly 60% of nursing home residents are estimated to be cognitively impaired. Currently about 10% of nursing homes have special care units for residents with serious dementia including Alzheimer's disease. This research evaluates a protocol developed by the Joint Commission on Accreditation of Healthcare Organizations to assess the capability of special care units to provide quality care. The protocol was pilot tested through the use of two separate evaluations of diverse special care units in metropolitan Chicago. In comparing the two separate surveys from each site, data analysis revealed a high rate of correlation between these two evaluations at three distinct levels. The standards used, their intent, and the survey process were considered sound by those who tested the protocol and by those who were evaluated by it.

Heuer AJ. Hospital accreditation and patient satisfaction: testing the relationship. *Journal for Healthcare Quality*. 2004 Jan-Feb;26(1):46-51.

This article describes a study that examines the relationship between two principal measures of institutional healthcare quality: accreditation scores and independently measured patient-satisfaction ratings. This study involved a retrospective review and comparison of summative and selected categorical hospital accreditation scores from the Joint Commission on Accreditation of Healthcare Organizations and independently measured patient satisfaction ratings. A total of 41 acute care, 200-plus bed, not-for-profit hospitals in New Jersey and eastern Pennsylvania were included. Correlation and multiple-regression statistical methods were employed. The results revealed no relationship between these quality indicators on a summative level and no meaningful pattern categorical relationships. This finding suggests a disassociation between these two quality indicators, thus supporting the use of a balanced scorecard approach to hospital quality management. The study also revealed certain shortcomings in these two quality indicators, relating to insufficient score variability, which should be considered by those using such data to manage quality outcomes.

Huda W, Sajewicz AM, Ogden KM, Scalzetti EM, Dance DR. How good is the ACR accreditation phantom for assessing image quality in digital mammography? *Academic Radiology*. 2002 Jul;9(7):764-72.

**RATIONALE AND OBJECTIVES:** The purpose of this study was to evaluate the American College of Radiology (ACR) accreditation phantom for assessing image quality in digital mammography. **MATERIALS AND METHODS:** Digital images were obtained of an ACR accreditation phantom at varying mAs (constant kVp) and varying kVp (constant mAs). The average glandular dose for a breast with 50% glandularity was determined for each technique factor. Images were displayed on a 5 mega-pixel monitor, with the window width and level settings individually optimized for viewing the fibers, specks, and masses in the ACR phantom. Digital images of the ACR phantom were presented in a random manner to eight observers, each of whom indicated the number of objects visible in each image. **RESULTS:** Intraobserver variability was greater than interobserver variability for the detection of fibers and specks, but the reverse was true for the detection of masses. As the mAs increased, the number of fibers visible increased from less than one at 5 mAs to all six being visible at 80 mAs. The corresponding number of visible specks increased from 12 to 24, and the number of visible masses increased from 1.25 to about four. Above 26 kVp, object visibility was constant with increasing x-ray tube voltage. Reducing the x-ray tube voltage to 24 kVp, however, reduced the number of visible fibers from six to five, the number of visible specks from 24 to 21.1, and the number of visible masses from four to 3.1. Observer performance was approximately constant for average glandular doses greater than 1.6 mGy, so that the range of lesion detectability in the ACR phantom occurs at doses lower than those normally encountered in clinical practice. **CONCLUSION:** The current design of the ACR phantom is unsatisfactory for assessing image quality in digital mammography.

Ito H, Sugawara H. Relationship between accreditation scores and the public disclosure of accreditation reports: a cross sectional study. *Quality & Safety in Health Care*. 2005 Apr;14(2):87-92.

**OBJECTIVE:** To examine the association between accreditation scores and the disclosure of accreditation reports. **DESIGN:** A cross sectional study. **SETTING:** Hospitals participating in an accreditation programme in

Japan. PARTICIPANTS: 547 of the 817 hospitals accredited by the Japan Council for Quality Health Care (JCQHC) by January 2003. MAIN OUTCOME MEASURES: Data on participation in public disclosure of accreditation reports through the JCQHC website were obtained from the JCQHC database. Comments on the disclosure were obtained using a questionnaire based survey. RESULTS: A total of 508 (93%) of the participating hospitals disclosed their accreditation reports on the JCQHC website. Public hospitals were significantly more committed to public disclosure than private hospitals, and larger hospitals were significantly more likely to participate in public disclosure than smaller hospitals. Accreditation scores were positively related to the public disclosure of hospital accreditation reports. Scores for patient focused care and efforts to meet community needs were significantly higher in actively disclosing hospitals than in non-disclosing hospitals. Among the large hospitals, scores for safety management were significantly higher in hospitals advocating disclosure than in non-disclosing hospitals. CONCLUSIONS: There was a positive correlation between accreditation scores and public disclosure. Our results suggest that the public disclosure of accreditation reports should be encouraged to improve public accountability and the quality of care. Future studies should investigate the interaction between public disclosure, processes and outcomes.

Jain N, Willett KM. Maintaining standards in surgical training: how effective is accreditation by the specialist advisory committee in the United Kingdom? *Journal of Bone and Joint Surgery* 2006 January 1, 2006;88-B(1):111-5.

In order to assess the efficacy of inspection and accreditation by the Specialist Advisory Committee for higher surgical training in orthopaedic surgery and trauma, seven training regions with 109 hospitals and 433 Specialist Registrars were studied over a period of two years. There were initial deficiencies in a mean of 14.8% of required standards (10.3% to 19.2%). This improved following completion of the inspection, with a mean residual deficiency in 8.9% (6.5% to 12.7%). Overall, 84% of standards were checked, 68% of the units improved and training was withdrawn in 4%. Most units (97%) were deficient on initial assessment. Moderately good rectification was achieved but the process of follow-up and collection of data require improvement. There is an imbalance between the setting of standards and their implementation. Any major revision of the process of accreditation by the new Post-graduate Medical Education and Training Board should recognise the importance of assessment of training by direct inspection on site, of the relationship between service and training, and the advantage of defining mandatory and developmental standards.

Juul AB, Glud C, Wetterslev J, *et al.* The effects of a randomised multi-centre trial and international accreditation on availability and quality of clinical guidelines. *International Journal of Health Care Quality Assurance* 2005;18(4-5):321-8.

PURPOSE: To examine the availability and quality of clinical guidelines on perioperative diabetes care in hospital units before and after a randomised clinical trial (RCT) and international accreditation. DESIGN/METHODOLOGY/APPROACH: Interventional "before-after" study in 51 units (38 surgical and 13 anaesthetic) in nine hospitals participating in a RCT in the greater Copenhagen area; 27 of the units also underwent international accreditation. FINDINGS: The proportion of units with guidelines increased from 24/51 (47 percent) units before to 38/51 (75 percent) units after the trial. Among the 27 units without guidelines before the trial, significantly more accredited units compared to non-accredited units had a guideline after the trial (9/10 (90 percent) compared to 5/17 (29 percent)). The quality of the systematic development scale and the clinical scales improved significantly after the trial in both accredited units (both  $p < 0.001$ ) and in non-accredited units (both  $p < 0.02$ ). The improvement of the systematic development scale was significantly higher in accredited than in non-accredited units ( $p < 0.01$ ). ORIGINALITY/VALUE: The combination of conducting both the DIPOM Trial and international accreditation led to a significant improvement of both dissemination and quality of guidelines on perioperative diabetic care.

Macfarlane F, Tavabie A, Desombre T. Accredited professional development: a qualitative study of the feasibility, acceptability and practicality of a new scheme for CPD. *Education for Primary Care*. 2003;14(3):302-9.

The Royal College of General Practitioners has launched an Accredited Professional Development (APD) programme to prepare GPs for revalidation. This paper describes an evaluation of the APD pilot programme run within the Kent, Surrey and Sussex GP Deanery area. Interviews were undertaken with a sample of 20 participants to identify their views on the feasibility, acceptability and practicability of the programme. APD is based on a facilitated, distance-learning approach using a structured programme targeted at the areas described in the RCGP document Good Medical Practice for General Practitioners. The research demonstrates that GPs

are extremely supportive of the programme, valuing the flexible, learner-centred style of the teaching and learning. However, it is recognised that such an approach may not suit traditional learners. Participants were very positive about the structure of APD and the quality of its learning materials, but indicated that the role of the facilitator was crucial to its success. Facilitators were concerned about the time involvement of their role and indicated that without proper funding it would be unsustainable.

Mazmanian PE, Kreutzer JS, Devany CW, Martin KO. A survey of accredited and other rehabilitation facilities: education, training and cognitive rehabilitation in brain-injury programmes. *Brain Injury*. 1993 Jul-Aug;7(4):319-31.

Although it is routinely acknowledged that cognitive rehabilitation therapy comprises a major part of the services provided to survivors of brain injury, there continues to be no general consensus regarding the methods and training of those who provide cognitive rehabilitation services. This survey of 398 head-injury rehabilitation facilities includes information on which disciplines are providing and supervising cognitive rehabilitation therapy, which therapy formats are used, and a first attempt to define the costs and providers for cognitive therapy staff training in Commission on Accreditation of Rehabilitation Facilities (CARF) approved and other (non-CARF) facilities. The education and training of junior and senior staff members is compared, and respondents suggest changes in the education and training of those who provide cognitive rehabilitation therapy. The results of this survey suggest no significant differences in the organization and delivery of cognitive rehabilitation therapy in CARF and non-CARF programmes. They indicate that cognitive rehabilitation therapy and the education and training of providers deserve further study and definition, given the widespread provision of cognitive rehabilitative services.

McCleish JM. Relationships between Accreditation Affiliation, Definitions, and Tools used to assess Critical Thinking as a Learning Outcome in Schools of Nursing [Ph.D.]. Iowa: Iowa State University, 2002.

The purpose of this study was to explore the relationship of definitions of critical thinking and the use of critical thinking measurement tools with accreditation affiliation in baccalaureate nursing programs. In addition, other aspects of the programs, including program type, other nursing degrees offered, public versus private status, membership in professional nursing organizations, contributing factors towards selection of an accrediting agency, and geographical accreditation region of the program were investigated to determine which characteristics are associated with their selection of accrediting agencies.

A sample of 330 baccalaureate nursing programs accredited by the Commission on Collegiate Nursing Education (CCNE), the National League for Nursing Accrediting Commission (NLNAC), or both was sent a survey prepared and piloted by the researcher. One hundred fifty-four surveys were returned; 153 were usable surveys, for a response rate of 46%.

Findings indicated that there were significant relationships between accreditation affiliation and membership in professional nursing organizations and between accreditation affiliation and major contributing factors used to select accrediting agencies. No relationship was noted between accreditation affiliation and type of baccalaureate nursing program, other degrees offered, public or private status, geographical accrediting region, extent of agreement with selected definitions of critical thinking, or types of tools used to assess critical thinking. Additional significant findings indicated there is a difference among factors contributing to selection of an accrediting agency, there is a relationship between types of tools used to assess critical thinking and definitions of critical thinking, and there is a relationship between types of tools used to assess critical thinking and reports of growth in critical thinking abilities. Other findings indicated there is no consensus among nursing programs regarding definitions of critical thinking, there is no agreement overall regarding tool types, and there is no reported growth in critical thinking over time among baccalaureate nursing programs.

Miller MR, Pronovost P, Donithan M, *et al.* Relationship between performance measurement and accreditation: implications for quality of care and patient safety. *American Journal of Medical Quality*. 2005 Sep-Oct;20(5):239-52.

This study examined the association between the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) accreditation scores and the Agency for Healthcare Research and Quality's Inpatient Quality Indicators and Patient Safety Indicators (IQIs/PSIs). JCAHO accreditation data from 1997 to 1999 were matched with institutional IQI/PSI performance from 24 states in the Healthcare Cost and Utilization Project. Most institutions

scored high on JCAHO measures despite IQI/PSI performance variation with no significant relationship between them. Principal component analysis found 1 factor each of the IQIs/PSIs that explained the majority of variance on the IQIs/PSIs. Worse performance on the PSI factor was associated with worse performance on JCAHO scores ( $P=.02$ ). No significant relationships existed between JCAHO categorical accreditation decisions and IQI/PSI performance. Few relationships exist between JCAHO scores and IQI/PSI performance. There is a need to continuously reevaluate all measurement tools to ensure they are providing the public with reliable, consistent information about health care quality and safety.

Nandraj S, Khot A, Menon S, Brugha R. A stakeholder approach towards hospital accreditation in India. *Health Policy Planning*. 2001, 2001;16(suppl\_2):70-9.

Accreditation has been recommended as a mechanism for assuring the quality of private sector health services in low-income countries, especially where regulatory systems are weak. A survey was conducted in Mumbai, India, in 1997-98 to elicit the views of the principal stakeholders on the introduction of accreditation and what form it should take. There was a high level of support for the classical features: voluntary participation, a standards-based approach to assessing hospital performance, periodic external assessment by health professionals, and the introduction of quality assurance measures to assist hospitals in meeting these standards. Hospital owners, professional bodies and government officials all saw potential - though different - advantages in accreditation: for owners and professionals it could give them a competitive edge in a crowded market, while government officials reckoned it could increase their influence over an unregulated private market. Areas of disagreement emerged; for example, hospital owners were opposed to government or third party payment bodies having a dominant role in running an accreditation system. The growing strength of a health service user representative lobby in Mumbai is an additional reason why this would be a suitable place for piloting such a system. The biggest obstacle to introducing accreditation in poorly resourced settings, such as India, is in how to finance it. The provisional support of the principal stakeholders for such a development, demonstrated in this study, will require a commitment from government and policymakers if the potential benefits of accreditation to the health of the population are to be realised.

Peterson CA. Management, faculty, and accreditation outcomes: a survey of physical therapy faculty and program directors. *Journal of Physical Therapy Education*. 2003 Fall;17(2):22-31.

**Background and Purpose.** The purpose of this study was to identify which faculty variables—a more participative management style, faculty participation in accreditation, faculty support of the Commission on Accreditation in Physical Therapy Education (CAPTE) accreditation process, and faculty commitment to implementing the plans delineated in the accreditation documentation—were associated with accreditation outcome. The theoretical framework was grounded in 3 bodies of literature: management theory (Rensis Likert's systems approach to management), higher education culture, and accreditation. **Subjects.** The population for this study was all program directors (56% response rate of 181 questionnaires mailed) and faculty (50.4% response rate of 1,708 questionnaires mailed) of CAPTE-accredited-physical therapy programs in the United States. **Methods.** Two questionnaires were developed and disseminated to program directors and faculty. The program director questionnaire collected the accreditation outcome data and background information. The faculty questionnaire collected data on management style, participation, perceptions of accreditation, and background information. **Results.** Multiple regression yielded significant positive associations between accreditation outcome and participative management as well as faculty support of the accreditation process. Negatively associated were accreditation outcome and faculty commitment to implementation. Bivariate correlations demonstrated the following positive associations: (1) faculty participation and faculty years of experience; (2) faculty support of the accreditation process and (a) number of self-studies completed and (b) sex (females); (3) manager years of experience and (a) accreditation outcome, (b) number of self-studies completed, and (c) faculty years of experience; (4) number of self-studies completed and faculty experience; and (5) faculty years of experience and program longevity. **Discussion and Conclusion.** The findings of this study indicate that the manager is the most important entity in achieving a successful accreditation outcome. Managers who are perceived as participative, have more years of experience, have written more self-studies, and whose faculty support the accreditation process are likely to have more positive accreditation outcomes.

Pomey MP, Contandriopoulos AP, Francois P, Bertrand D. Accreditation: a tool for organizational change in hospitals? *International Journal of Health Care Quality Assurance* 2004;17(2-3):113-24.

Examines the dynamics of change that operated following preparations for accreditation. The study was conducted from May 1995 to October 2001 in a university hospital center in France after the introduction in 1996 of mandatory accreditation. An embedded explanatory case study sought to explore the organizational changes: a theoretical framework for analyzing change was developed; semi-structured interviews, focus groups, and questionnaires addressed to the hospital's professionals were used and documents were collected; and qualitative and quantitative analyses were carried out. Professionals from clinical and medico-technical departments participated most. Preparations for accreditation provided an opportunity to reflect non-hierarchically on the treatment of patients and on the hospital's operational modalities by creating a locus for exchanges and collegial decision making. These preparations also led to giving greater consideration to results of exit surveys and to committing procedures to paper, and were a key opportunity for introducing a continuous quality program.

Pongpirul K, Sriratanaban J, Asavaroengchai S, Thammatach-Aree J, Laoitthi P. Comparison of health care professionals' and surveyors' opinions on problems and obstacles in implementing quality management system in Thailand: a national survey. *International Journal for Quality in Health Care*. 2006 Oct;18(5):346-51.

OBJECTIVE: To explore problems and obstacles of hospitals in Thailand implementing quality management systems according to the hospital accreditation (HA) standards. DESIGN: Questionnaire survey. SETTING: Thirty-nine hospitals in all 13 regions of Thailand. PARTICIPANTS: A total of 728 health care professionals and 41 surveyors of the national accreditation program. MAIN OUTCOME MEASURES: Health care professionals' and surveyors' opinions on problems and obstacles in 24 items representing Thailand HA standards. RESULTS: The response rates were 94.9 and 73.2% in health care professionals and surveyors, respectively. More than 90% of both groups thought that there had been problems in the items such as 'quality improvement (QI) activities' and 'integration and utilization of information'. The items considered by health care professionals as major obstacles included 'adequacy of staff' (34.6%) and 'integration and utilization of information' (26.6%), for example. For surveyors, 'integration and utilization of information' was ranked highest as presenting a major obstacle (43.9%), followed by 'discharge and referral process' (31.7%) and 'medical recording process' (29.3%). The rank orders for the 24 items as problems and major obstacles were similar in both groups (Spearman's rank correlation 0.436,  $P = 0.033$  and 0.583,  $P = 0.003$ , respectively). Surveyors had a higher degree of concern and paid more attention to care-related items than health care professionals. CONCLUSIONS: Health care professionals have been facing many problems with multidisciplinary process-related issues of the accreditation standard, whereas surveyors might have had some difficulties in conveying the core QI concepts to them. The findings might be explained by the effects of health care reform on the underlying accreditation principles. One of the strategies to respond to the situation was presented.

Reznich CB, Mavis BE. Pilot test of family medicine faculty development fellowship accreditation guidelines. *Family Medicine*. 2000 Nov-Dec;32(10):709-19.

BACKGROUND: We conducted a pilot test of accreditation guidelines for family medicine faculty development fellowship programs from September 1997 to March 1999. The accreditation guidelines included 8 application categories with 27 requirements and 5 self-study criteria. The process included completion of the accreditation application and self-study and a site visit. We selected 6 sites for participation in the pilot test, and 5 sites completed all steps. The results indicated that, while fellowship faculty felt that the requirements and criteria were valid for determining quality of faculty development fellowship programs, the process was time-consuming and could be shortened. Redundancy between information supplied on the application and on the self-study was also noted. Six recommendations were included in the final report, including streamlining the accreditation process, developing guidelines for probationary status, and considering alternatives to accreditation, such as peer review.

Simons R, Kasic S, Kirkpatrick A, Vertesi L, Phang T, Appleton L. Relative importance of designation and accreditation of trauma centers during evolution of a regional trauma system. *Journal of Trauma-Injury Infection & Critical Care*. 2002;52(5):827-34.

**Background :** Improved survival after injury has been demonstrated with trauma system implementation and designation of trauma centers. Local designating health authorities or national verification (United States) or accreditation (Canada) programs audit trauma center performance. The relative importance of designation versus accreditation with respect to improved outcomes is not clear. The purpose of this study was to measure outcomes within a single regional trauma system after designation of trauma centers and to compare outcomes in the one accredited center to the nonaccredited centers., **Methods :** Data from three trauma centers were studied. All were large, university-affiliated regional medical centers, integrated into a regional trauma system and served by a single ambulance service. The study period was 1992 to 1999, immediately after trauma center designation in 1991. The British Columbia Trauma Registry was used to identify trauma patients, mechanism of injury, length of stay, case mix, case volume, acuity, pediatric caseload, and proportion of transfers at each center. A questionnaire was circulated to each hospital to determine the level of institutional support and programmatic development for trauma. The Trauma Registry was used to calculate z scores (TRISS methodology) for each center and TRISS-adjusted mortality odds ratios between institutions. Differences in covariables were controlled for in subgroup analysis., **Results :** Two centers (hospitals A and C) had a high trauma caseload; one (hospital B) had a small and diminishing caseload. Only one center (hospital A) developed a trauma program consistent with Canadian accreditation criteria; z scores for center A were consistently better than at hospital B or C and survival odds ratios were significant. This finding applied to the total trauma population, blunt adult trauma patients (whether or not transfers and hip fracture patients were excluded), and in the more severely injured blunt trauma subgroups. There were no differences between hospitals for the relatively small number of patients with penetrating trauma., **Conclusion :** Differences between hospitals were apparent from the outset of the trauma system. However, designation as a trauma center does not appear to necessarily improve survival in large regional medical centers. Development of a trauma program and commitment to meeting national guidelines through the accreditation process does appear to be associated with improved outcome after injury.

Tracey J, Arroll B, Richmond D. Changes in CME uptake caused by reaccreditation. *New Zealand Medical Journal*. 1998 Apr 10;111(1063):118-20.

**AIM:** To determine whether the requirements of the reaccreditation programme of the Royal New Zealand College of General Practitioners (RNZCGP) have changed the amount and type of continuing medical education (CME) done by the participating general practitioners. **METHOD:** A written questionnaire was sent to 200 randomly selected general practitioners doing the RNZCGP reaccreditation programme. **RESULTS:** The response rate was 82%. Although almost half the general practitioners had been motivated to spend more time on CME by the reaccreditation programme, for most this was a small increase. However, there was a trend towards selection of higher quality courses and towards increasing the time spent on educational activities more likely to result in changed behaviour. **CONCLUSION:** The RNZCGP reaccreditation programme is having beneficial effects on the CME activities of many of the participating general practitioners.

VanSuch M, Naessens J, Stroebel R, Huddleston J, Williams A. Effect of discharge instructions on readmission of hospitalised patients with heart failure: do all of the Joint Commission on Accreditation of healthcare organizations heart failure core measures reflect better care? *Quality & Safety in Health Care*. 2006;15(6):414-7.

**Background:** Most nationally standardised quality measures use widely accepted evidence-based processes as their foundation, but the discharge instruction quality component of the United States standards of Joint Commission on Accreditation of Healthcare Organizations heart failure core measure appears to be based on expert opinion alone. **Objective:** To determine whether documentation of compliance with any or all of the six required discharge instructions is correlated with readmissions to hospital or mortality. **Research design:** A retrospective study at a single tertiary care hospital was conducted on randomly sampled patients hospitalised for heart failure from July 2002 to September 2003. **Participants:** Applying the Joint Commission on Accreditation of Healthcare Organizations criteria, 782 of 1121 patients were found eligible to receive discharge instructions. Eligibility was determined by age, principal diagnosis codes and discharge status codes. **Measures:** The primary outcome measures are time to death and time to readmission for heart failure or readmission for any cause and time to death. **Results:** In all, 68% of patients received all instructions, whereas 6% received no instructions. Patients who received all instructions were significantly less likely to be readmitted for any cause ( $p=0.003$ ) and for heart failure ( $p=0.035$ ) than those who missed at least one type of instruction. Documentation of discharge instructions is correlated with reduced readmission rates. However, there was no association between documentation of discharge instructions and mortality ( $p=0.521$ ). **Conclusions:** Including discharge instructions among other evidence-based heart failure core measures appears justified.

Viswanathan HN, Salmon JW. Accrediting organizations and quality improvement. *American Journal of Managed Care*. 2000 Oct;6(10):1117-30.

This paper reviews the various organizations in the United States that perform accreditation and establish standards for healthcare delivery. These agencies include the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), the National Committee for Quality Assurance (NCQA), the American Medical Accreditation Program (AMAP), the American Accreditation HealthCare Commission/Utilization Review Accreditation Commission (AAHC/URAC), and the Accreditation Association for Ambulatory HealthCare (AAAHC). In addition, the Foundation for Accountability (FACCT) and the Agency for Healthcare Research and Quality (AHRQ) play important roles in ensuring the quality of healthcare. Each of the accrediting bodies is unique in terms of their mission, activities, compositions of their boards, and organizational histories, and each develops their own accreditation process and programs and sets their own accreditation standards. For this reason, certain accrediting organizations are better suited than others to perform accreditation for a specific area in the healthcare delivery system. The trend toward outcomes research is noted as a clear shift from the structural and process measures historically used by accrediting agencies. Accreditation has been generally viewed as a desirable process to establish standards and work toward achieving higher quality care, but it is not without limitations. Whether accrediting organizations are truly ensuring high quality healthcare across the United States is a question that remains to be answered.

Whittaker S, Green-Thompson RW, McCusker I, Nyembezi B. Status of a health care quality review programme in South Africa. *International Journal for Quality in Health Care*. 2000 June 1, 2000;12(3):247-50.

This paper provides an overview of an accreditation programme for health care facilities in South Africa. It traces the origin of COHSASA (The Council for Health Service Accreditation of Southern Africa) which began as a pilot programme in 1992, to its current status as the only accreditation body in the country. There are brief descriptions of its structure, how it is governed, and how standards were developed and organized. The authors sketch a background of the unique socio-political context and legal developments within which the programme operates in South Africa and how the programme is contributing towards the new government's intention to provide equitable and quality health care to all its citizens. There is an outline of the principles on which the COHSASA programme is based and the structure and process of the programme. The programme incorporates an integrated, multi-disciplinary, continuous quality improvement approach with special emphasis on capacity building of hospital staff when necessary. The paper refers to groundbreaking research in Kwa-Zulu Natal where the impact of accreditation is being measured in a randomized control trial. It points to the benefits of accreditation being perceived in both public and private sectors of health care in South Africa and outlines some of the results of the program's implementation.

Williams SC, Schmaltz SP, Morton DJ, Koss RG, Loeb JM. Quality of care in U.S. hospitals as reflected by standardized measures, 2002-2004. *New England Journal of Medicine*. 2005;353(3):255-64.

**BACKGROUND:** In July 2002, the Joint Commission on Accreditation of Healthcare Organizations implemented standardized performance measures that were designed to track the performance of accredited hospitals and encourage improvement in the quality of health care. **METHODS:** We examined hospitals' performance on 18 standardized indicators of the quality of care for acute myocardial infarction, heart failure, and pneumonia. One measure assessed a clinical outcome (death in the hospital after acute myocardial infarction), and the other 17 measures assessed processes of care. Data were collected over a two-year period in more than 3000 accredited hospitals. All participating hospitals received quarterly feedback in the form of comparative reports throughout the study. **RESULTS:** Descriptive analysis revealed a significant improvement ( $P < 0.01$ ) in the performance of U.S. hospitals on 15 of 18 measures, and no measure showed a significant deterioration. The magnitude of improvement ranged from 3 percent to 33 percent during the eight quarters studied. For 16 of the 17 process-of-care measures, hospitals with a low level of performance at baseline had greater improvements over the subsequent two years than hospitals with a high level of performance at baseline. **CONCLUSIONS:** Over a two-year period, we observed consistent improvement in measures reflecting the process of care for acute myocardial infarction, heart failure, and pneumonia. Both quantitative and qualitative research are needed to explore the reasons for these improvements. Copyright copyright 2005 Massachusetts Medical Society.



Williams SC, Watt A, Schmaltz SP, Koss RG, Loeb JM. Assessing the reliability of standardized performance indicators. *International Journal for Quality in Health Care*. 2006 Jun;18(3):246-55.

**OBJECTIVE:** . To investigate the reliability of self-reported standardized performance indicators introduced by the Joint Commission on Accreditation of Healthcare Organizations in July 2002 and implemented in approximately 3400 accredited US hospitals. The study sought to identify the most common data quality problems and determine causes and possible strategies for resolution. **DESIGN:** Data were independently reabstracted from a random sample of 30 hospitals. Reabstracted data were compared with data originally abstracted, and discrepancies were adjudicated with hospital staff. Structured interviews were used to probe possible reasons for abstraction discrepancies. **RESULTS:** The mean data element agreement rate for the 61 data elements evaluated was 91.9%, and the mean kappa statistic for binary data elements was 0.68. The rate of agreement for individual data elements ranged from 100 to 62.4%. The mean difference between calculated indicator rates was 4.88% (absolute value) and the range of differences was 0.0-13.3%. Symmetry of disagreement among original abstractors and reabstractors identified eight indicators whose differences in calculated rates were statistically unlikely to have occurred through random chance ( $P < 0.05$ ). **CONCLUSION:** Although improvement in the accuracy and completeness of the self-reported data is possible and desirable, the baseline level of data reliability appears to be acceptable for indicators used to assess and improve hospital performance on selected clinical topics.

## Appendix 2: Health service accreditation organisations

Nationality	Organisation	Description	Website
International	The International Society for Quality in Health Care (ISQua),	ISQua, The International Society for Quality in Health Care, is a non-profit, independent organisation with members in over 70 countries. ISQua works to provide services to guide health professionals, providers, researchers, agencies, policy makers and consumers, to achieve excellence in healthcare delivery to all people, and to continuously improve the quality and safety of care.	<a href="http://www.isqua.org">http://www.isqua.org</a>
Argentina	Technical Institute for Accreditation of Healthcare Organisations	Unable to be read	<a href="http://www.itaes.org.ar">www.itaes.org.ar</a>
Australia	Australian General Practice Accreditation Limited (AGPAL)	<p>AGPAL, and its subsidiary company QIP, are the leading providers of quality improvement that support primary care practice teams to increase efficiency, reduce risk and stay current with trends and best practice.</p> <p>AGPAL stands for Australian General Practice Accreditation Limited. AGPAL is a not for profit organisation, which is run by the general practice profession and operated nationally. AGPAL provides accreditation services to over 85% of General Practices in Australia.</p> <p>QIP stands for Quality in Practice Pty Ltd and is a subsidiary of AGPAL. QIP was formed in late 2000 to provide consultancy services to the health sector in areas of accreditation and quality improvement. QIP is able to draw on the systems and expertise of AGPAL. The company is currently engaged in the accreditation and improvement processes for:</p> <ol style="list-style-type: none"> <li>1. Optometrists</li> <li>2. General Practices</li> </ol>	<a href="http://www.qip.com.au">www.qip.com.au</a>

		<p>3. Australian Divisions of General Practice          4. Aboriginal Medical Services          5. Medical Deputising Services</p> <p>QIP/AGPAL is also involved in discussions with other primary care providers.</p>	
	Australian Council on Healthcare Standards (ACHS)	<p>The Australian Council on Healthcare Standards (ACHS) is an independent, not-for-profit organisation, dedicated to improving the quality of health care in Australia through continual review of performance, assessment and accreditation.</p> <p>Established in 1974, after many years of pioneering work from a range of health care professionals including members of the Australian Medical Association, medical colleges and the Australian Hospital (now Healthcare) Association, the ACHS has maintained its position as the principal independent authority on the measurement and implementation of quality improvement systems for Australian health care organisations.</p> <p>Standards for evaluation, assessment and accreditation are determined by a council drawn from peak bodies in health and representatives of the Commonwealth Government, State Governments and consumers.</p>	<a href="http://www.achs.org.au">www.achs.org.au</a>
Brazil	Consórcio Brasileiro de Acreditação.	Unable to be read	<a href="http://www.cbacred.org.br">www.cbacred.org.br</a>
Canada	Community Health Accreditation Body	Community Organizational Health Inc. (or COHI) is committed to fostering quality, innovation and learning within health and social services organizations. COHI owns and administers the quality improvement and accreditation program called Building Healthier Organizations (BHO).	<a href="http://www.cohi-soci.ca">www.cohi-soci.ca</a>
	Canadian Council on Health Services	CCHSA plays a unique role in the delivery of health and social services by assisting health service organizations, across Canada and	<a href="http://www.cchsa.ca">www.cchsa.ca</a>

	Accreditation	<p>internationally, examine and improve the quality of care and service they provide to their clients.</p> <p>Continuous quality improvement is the pivotal motivation for participating in accreditation. Organizations that seek accreditation understand there is always room for growth. CCHSA clients want to improve their standards and services and are committed to raising the bar to strive for higher quality service.</p>	
France	Agence Nationale d'Accréditation et d'Evaluation en Santé (ANAES)		<a href="http://www.anaes.fr">www.anaes.fr</a>
France	Haute Autorité de santé (HAS)	<p>The Haute Autorité de santé (HAS) - or French National Authority for Health - was set up by the French government in August 2004 in order to bring together under a single roof a number of activities designed to improve the quality of patient care and to guarantee equity within the healthcare system. HAS activities are diverse. They range from assessment of drugs, medical devices, and procedures to publication of guidelines to accreditation of healthcare organisations and certification of doctors. All are based on rigorously acquired scientific expertise. Training in quality issues and information provision are also key components of its work programme.</p> <p>HAS is not a government body. It is an independent public body with financial autonomy. It is mandated by law to carry out specific missions on which it reports to Government and Parliament. It liaises closely with government health agencies, national health insurance funds, research organisms, unions of healthcare professionals, and patients' representatives.</p> <p>HAS has been built on 3 founding principles: a very broad field of action, which means that it can compare a range of healthcare initiatives; a high degree of scientific rigour; and independence.</p>	<a href="http://www.has-sante.fr">www.has-sante.fr</a>
Germany	KTQ (Kooperation	Unable to be read.	<a href="http://www.ktq.de">www.ktq.de</a>

	für Transparenz und Qualität im Gesundheitswesen GmbH)		
India	National Accreditation Board for Hospitals & Healthcare Providers (NABH)	National Accreditation Board for Hospitals & Healthcare Providers (NABH) is a constituent board of Quality Council of India, set up to establish and operate accreditation programme for healthcare organizations. the board is structured to cater to much desired needs of the consumers and to set benchmarks for progress of health industry. The board while being supported by all stakeholders including industry, consumers, government, have full functional autonomy in its operation.	<a href="http://www.qcin.org">www.qcin.org</a>
Ireland	Irish Health Services Accreditation Board (IHSAB)	The Irish Health Services Accreditation Board was formally established via Statutory Instrument on the 1st of May 2002. The primary purpose of IHSAB is to establish, continuously review and operate an Accreditation scheme for the Irish health system within a quality improvement framework.	<a href="http://www.ihsab.ie">www.ihsab.ie</a>
Italy	Italian Society for Quality of Health Care	Unable to be read	<a href="http://www.siquas.it">www.siquas.it</a>
Japan	Japan Council for Quality Health Care	Unable to be read	<a href="http://jcqhc.or.jp/html/index.htm">http://jcqhc.or.jp/html/index.htm</a>
Malaysia	Malaysian Society for Quality in Health (MSQH)	Malaysian Society for Quality in Health or better known as MSQH is a professional not-for-profit organisation registered under the Registrar of Society (ROS) in 17 <sup>th</sup> October 1997. It was the brainchild of the Ministry of Health Malaysia in collaboration with the Association of Private Hospitals of Malaysia and the Malaysian Medical Association.  MSQH is dedicated to improving the quality of the nation's healthcare	<a href="http://www.msqh.com.my">www.msqh.com.my</a>

		<p>through voluntary accreditation. The Malaysian Hospital Accreditation Standards are intended to stimulate continuous, systematic improvement in an organisation's performance and the outcomes of care.</p> <p>The Malaysian Hospital Accreditation Standards, which are at par with international standards are recognized and acknowledged benchmarks for healthcare facilities. Hospitals are able to use the standards as a tool to ensure the continuous and systematic improvement of delivery of care, organisation-wide.</p> <p>MSQH is a member of International Society for Quality in Health Care (ISQua). We are also affiliated with the ISQua Accreditation Council Federation, a federated structure that oversees in Programs for Healthcare Accreditation worldwide. The MSQH is also a member of the Accreditation Federation Council which comprises of representatives from WHO, World Bank, the International Hospital Federation (IHF) and national accreditation bodies from the US, Canada, New Zealand, France, UK, Spain, Japan, Finland, Netherlands and South Africa.</p>	
<p>Netherlands</p>	<p>Netherlands Institute for Accreditation of Hospitals (NIAZ)</p>	<p>The NIAZ is the Netherlands Institute for Accreditation of Hospitals. Through accreditation, the NIAZ aims to stimulate hospitals to improve the quality of the organisation of health care and in quality assurance. Furthermore, a NIAZ accreditation certificate guarantees the accountability of hospitals for both internal and external stakeholders.</p> <p>In December 1999, the Teaching Hospital in Maastricht (<i>academisch ziekenhuis Maastricht</i>) became the first health care organisation to receive the NIAZ accreditation certificate. In the meantime more than twenty hospitals have acquired accreditation.</p> <p>Even though the 'Z' in NIAZ stands for hospitals (<i>ziekenhuizen</i>), it is also possible for health care organisations to participate in the NIAZ accreditation programme, for instance, mental health care institutions, nursing and retirement homes, dialysis centres, physiotherapy practices, GP practices and private clinics. One mental health care institution has already acquired partial accreditation and a number of health care organisations, for instance a nursing home and some</p>	<p><a href="http://www.niaz.nl">www.niaz.nl</a></p>

		private clinics, have also submitted applications.	
New Zealand	Quality Health New Zealand	Quality Health New Zealand is this country's leading Standards and Performance Assessment Agency for Health and Disability Services. We have been providing assessment and quality improvement services in the health sector since 1990, surveying public hospitals and health services, private surgical hospitals and clinics, continuing care hospitals and rest homes, hospices, mental health services, disability support services, and Maori and community health services.	<a href="http://www.qualityhealth.org.nz">www.qualityhealth.org.nz</a>
Poland	Centrum Monitorowania Jakosci w Ochronie Zdrowia	Unable to read	<a href="http://www.cmj.org.pl">www.cmj.org.pl</a>
Portugal	Instituto da Qualidade Saude (IQS)	Unable to read	<a href="http://www.iqs.pt">www.iqs.pt</a>
Spain	Fundación Avedis Donabedian (FAD)	Unable to be read	<a href="http://www.fadq.org">www.fadq.org</a>
Southern Africa	Council of Health Service Accreditation South Africa (COHSASA)	COHSASA assists health care facilities to meet quality standards and maintain those standards once they have been achieved. Through its quality improvement methods, our organisation empowers health care professionals to measure themselves against these quality standards and monitor the improvements. Our work shows us that strictly applied quality improvement methods can improve patient safety and quality of care by guiding interventions, monitoring progress and identifying improvements. We also identify impediments or blocks in the improvement process and develop strategies to overcome these. COHSASA provides data on the quality of health service provision to governing authorities so that it can be used for strategic decisions. In the past 12 years over 600 facilities have entered the COHSASA	<a href="http://www.cohsasa.co.za">www.cohsasa.co.za</a>

		programme.	
United Kingdom	CHKS	<p>Established in 1989, CHKS is the UK's leading provider of comparative information and quality improvement services for healthcare professionals. Working throughout England, Wales, Scotland and Northern Ireland, our clients include over 80% of NHS acute trusts, as well as primary care organisations, strategic health authorities, the independent healthcare sector and other related organisations such as NICE and NHS Institute for Improvement and Innovation.</p> <p>CHKS provides information products, accreditation and consultancy services to enable clinicians and managers to improve patient care and to manage their healthcare services more efficiently and effectively. Our services focus on performance benchmarking, corporate governance, financial efficiency, quality assurance, clinical effectiveness and patient reported outcomes.</p> <p>Through the acquisition of the <b>Health Quality Service (HQS)</b>, the longest established healthcare accreditation organisation in Europe, we have the expertise to combine clinical benchmarking information with reviewing and improving systems and processes, to link healthcare practice to health outcomes.</p> <p>With an active research division, formerly known as <b>CASPE Research</b>, CHKS has extensive experience in reviewing healthcare practice, developing and implementing clinical and outcome indicators, assuring the quality of routine data sources, and evaluating clinical audit programmes. Having worked with many external organisations, such as the Department of Health, World Health Organisation (WHO) and King's Fund, we remain at the centre of healthcare research and evaluation.</p> <p>CHKS accreditation programmes are based on the concept that high quality patient care depends on robust and regularly monitored organizational systems and processes. Through clear and concise standards statements, supported by comprehensive guidance and references, they describe what all organizations should be striving to achieve excellence.</p>	<a href="http://www.chks.co.uk">www.chks.co.uk</a>
USA	Joint Commission	The Joint Commission evaluates and accredits nearly 15,000 health	<a href="http://www.jointcommission.org">www.jointcommission.org</a>



	<p>of Accreditation on Healthcare Organizations (JCAHO)</p>	<p>care organizations and programs in the United States. An independent, not-for-profit organization, The Joint Commission is the nation's predominant standards-setting and accrediting body in health care. Since 1951, The Joint Commission has maintained state-of-the-art standards that focus on improving the quality and safety of care provided by health care organizations. The Joint Commission's comprehensive accreditation process evaluates an organization's compliance with these standards and other accreditation requirements. Joint Commission accreditation is recognized nationwide as a symbol of quality that reflects an organization's commitment to meeting certain performance standards. To earn and maintain The Joint Commission's Gold Seal of Approval™, an organization must undergo an on-site survey by a Joint Commission survey team at least every three years. The mission of The Joint Commission is to continuously improve the safety and quality of care provided to the public through the provision of health care accreditation and related services that support performance improvement in health care organizations.</p>	
	<p>Commission on Accreditation of Rehabilitation Facilities (CARF)</p>	<p>Founded in 1966 as the Commission on Accreditation of Rehabilitation Facilities, CARF International is an independent, nonprofit accreditor of human service providers in the areas of aging services, behavioral health, child and youth services, DMEPOS, employment and community services, and medical rehabilitation. The CARF family of organizations currently accredits approximately 5,000 providers at more than 17,000 locations in the United States, Canada, Western Europe, and South America. The Continuing Care Accreditation Commission (CCAC), based in Washington, D.C., was founded in 1985 as the nation's only accrediting body of continuing care retirement communities and aging services networks. CARF acquired CCAC in 2003. CARF Canada was launched in 2002 as a private, not-for-profit organization serving Canadian providers.</p>	<p><a href="http://www.carf.org">www.carf.org</a></p>

### Appendix 3: Characteristics of reviewed accreditation research literature

Author/ year	Category	Country and setting	Purpose	Study design, collection and analysis	Main results
Baker, Morrone and Gable (2004)	1	United States; health higher education.	To explore the perspectives of selected allied health deans and program directors regarding specialised accreditation effectiveness and reform.	Quantitative study; 59 (6 point Likert-scale) questionnaire; 773 surveys mailed; 424 responses – 55% return rate. Analysis: sum means; Cronbach's alpha; multivariate analysis; ANOVAs; independent <i>t</i> tests.	Affirmed the role of accreditation as an effective system for measuring quality in higher education.
Barker et al. (2002)	5	United States; hospitals, skilled nursing facilities.	To identify prevalence of medication errors.	A prospective cohort study. A stratified random sample of 36 institutions.  Analysis: comparison of medication rates, Tukey test used.	Medication errors were common, with a significant number (7%) of potentially harmful errors identified. Accreditation of a facility was not associated with a lower error rate.
Bohigas et al. (1998)	10	International study; surveyors.	To explore how different accreditation agencies manage surveyors.	Comparative study, with data gathered by questionnaire.	Surveyors around the world share many common features in terms of careers, training, work history and expectations.
Borenstein et al. (2004)	5	United States; managed care organisations.	An analysis that assessed the differences in performance rates between organisations with and without quality improvement activities.	Processes or outcomes from quality activities, identified from 399 organisational self-reports linked to measures in the effectiveness-of-care database of HEDIS.  Analysis: cross sectional analysis undertaken (79 activities from 50 organisations, covering 12 measures).	The effects of self-reported quality improvement activities were often small and inconsistent, and in some instances contrary to expectations.
Brasure, Stensland and	1	United States; hospitals	To explore why rural hospitals are not	Random sample survey of 299 non-accredited rural hospitals (selected	The largest factor contributing to rural hospital

Wellever (2000)		(rural).	participating in the accreditation process.	from 1996 American Hospital Association annual survey). Mail survey with telephone follow-up. 248 responses received, 92% response rate.  Analysis: multivariate probit analysis and predicted marginal probabilities.	deterrence to seeking accreditation was cost.
Bukonda et al. (2003)	6	Zambia; hospital.	To describe the experience of the development of the Zambian Hospital accreditation program.	Qualitative data from interviews, with stakeholders, and review of documents.	Serious resource constraints, both financial and expertise, have undermined the ongoing viability of the program.
Casamassion and Wilson (1999)	1	United States; dentistry.	To assess the opinions of program directors and practitioners about the importance and necessary numbers of experiences required by current accreditation standards for training of pediatric dentists.	A 32-item questionnaire was sent to all program directors of ADA-accredited postdoctoral pediatric dentistry training programs and to a random sample of 10% of the fellow/active membership of the American Academy of Pediatric Dentistry. An over-all response rate of 56%.  Analysis: comparisons using statistical tests.	Practitioners and program directors agreed on the importance of most experiences and activities required by current accreditation standards.
Casey and Klingner (2000)	1	United States; health maintenance organisations (rural) (HMOs).	To explore why two groups of HMOs that serve rural areas have chosen to apply or not to apply for National Committee for Quality Assurance accreditation, and their future plans regarding accreditation.	HMOs drawn from 1997 InterStudy HMO census; identified 182 rural HMOs, 75 accredited and 105 non-accredited; random samples of 21 accredited and 10 non-accredited HMOs; phone interviews with managers or directors, ratings using a 5 point scale.	Challenges complying with standards and information requirements identified. Accredited HMOs cited positive benefits of accreditation process; most to reapply.
Chen, Rathore, Radford and Krumholz (2003)	5	United States; hospitals.	To examine similarities and differences in health outcomes for accredited and non-	The study cohort was 134,579 patients from 4,221 hospitals. The association between quality of care, and survival for acute myocardial infarction was	Non-accredited hospitals displayed lower quality than accredited hospitals. However there was

			accredited hospitals.	examined.  Analysis: statistical tests (including chi-square tests, analysis of variance, logic regression and the Cochran-Armitage test), and a disease specific mortality prediction model for elderly patients was used. Risk adjustments were undertaken.	considerable variation in performance amongst accredited hospitals.
Collopy (2000)	5	Australia; health care organisations.	To examine the impact of clinical indicators on the behaviours of health care organisations.	A descriptive analysis, including quantitative results, using data drawn from the ACHS clinical indicator program.	Clinical indicators have become an accepted part of hospital quality improvement activities. The inclusion of clinicians in indicator development, along with regular feedback has resulted in their extensive use, and many actions to improve patient care.
Collopy et al. (2000)	5	Australia; health care organisations.	Review of the development of the AHCS quality indicator program into the accreditation program.	Information drawn from ACHS data bases.  Analysis: qualitative and quantitative presented.	A significant majority of organisations have responded to feedback on their quality indicator data to improve both the processes and outcomes of patient care.
Cunha and Feldman (2005)	6	Brazil; nursing services.	To identify the process of evaluation criteria applied to the nursing services adopted by Accreditation programs, and classify them in administrative, assistential and teaching research attributions.	An exploratory, descriptive and quantitative study involving 7 companies.	Developed 8 models by which to classify the criteria. Further research to obtain a more accurate understanding is necessary.
Daucourt and Michel (2003)	3	France; hospitals.	To compare the outcomes of	The first 100 summaries of accredited hospitals available on the website of	Despite wide heterogeneity in the summaries on

			accreditation procedures according to the status and size of the accredited hospitals.	ANAES were analysed.  Analysis: percentages and descriptive analysis presented.	accreditation and in FAC decision-making, this study provides an initial insight into common quality defects and ANAES priorities for hospitals.
Dean Beaulieu and Epstein (2002)	5, 7	United States; health plans.	To determine the characteristics of accredited plans, their performance on quality indicators and the impact on enrolment.	Linking of health plan data with accreditation status (with National Committee on Quality Assurance), organisational characteristics, employer data (from the Health Plan Employer Data and Information Set), patient-reported quality and satisfaction scores. Accredited and non-accredited plans compared.	Accreditation did not ensure high quality care. It is positively associated with some measures of quality but it does not ensure a minimal level of performance.
Dickison, Hostler, Platt and Wang (2006)	9	United States; health professionals (allied health – paramedics).	To examine if there is a relationship between completion of an accredited paramedic education program and achieving a passing score on the National Registry Paramedic Certification Examination (NRPCE).	Data were from the NRPCE of 2002 and involved 12, 773 students.  Analysis: statistical tests to determine relationship.	Students who attended an accredited paramedic program were more likely to achieve a passing score on a national paramedic credentialing examination.
Duckett (1983)	2	Australia; hospitals.	To discern the role of the Australian Council on Healthcare Standards accreditation program on changing hospitals.	Stratified random sample of 23 hospitals in the state of New South Wales, monitored for two years. These hospitals compared to other hospitals that had not applied for accreditation.  Comprehensive, semi-structured Interviews with senior staff.  Analysis: a case study of each hospital compiled and then all synthesised together.	Accredited hospitals could be differentiated by significant changes in six areas: administration and management, medical staff organisation, review systems, organisation of nursing services, physical facility and safety, hospital role definition, and planning. Most affected were nursing organisation and physical facilities and safety; least

					change was found in areas most directly associated with medical staff.
Durieux, Bissery, Gasquet and Coste (2004)	7	France; hospitals.	To compare the views of healthcare professionals and patients regarding compliance with standards of care concerning patient information.	A questionnaire was administered in short stay hospitals to 939 patients (response rate 62%) and 359 (response rate 86%) professionals, from nine wards.  Analysis: comparisons of rank order correlations for 20 standards.	While differences exist in items, the rank orders were similar in both groups.
Fairbrother and Gleeson (2000)	1, 4	Australia; hospital.	To examine attitudes of senior staff to the accreditation survey process.	A case study of a metropolitan teaching hospital. Survey of 20 items, closed and open questions, to all department heads; 200 distributed, 88 returned, 44% response rate.  Analysis: percentages with qualitative responses.	Significant levels of negative feedback received; principal concerns related to perceptions that the process is unwieldy and it offers little value for patient care delivery for the resources required.
Gabriele et al. (2006)	5	Italy; radiotherapy.	To analyze the practical feasibility and efficacy of the quality indicators elaborated by the National Health Service study group in a radiotherapy unit.	An analysis of 8 of 13 accreditation indicators involving 133 patients was carried out. A retrospective analysis and also a 19 item questionnaire sent at follow-up.  Analysis: percentages and statistical tests preformed for the different indicators.	The self evaluation promoted by the National Health Service Project allows the monitoring of the activities of the service in order to asses critical factors and it can be the starting point to improve the quality of the service and to compare national and international quality assurance results.
Gillon, Buetow, Wellingham and Talboys (2003)	6	New Zealand; health professionals (general practitioners).	To describe the development, implementation and validation of general practice standards, supported by a continuous quality improvement (CQI)	Seventy four volunteer practices were assessed in a national field trial after receiving an invitation. Assessment involved a self-assessment and visit by a external assessor.  Analysis: quantitative data on content validity, construct validity and internal	Developed a framework and assessment tool which offers patients and other stakeholders a credible measure of quality and safety at the practice level through a process bridging quality control and quality

			process that teaches practice teams how to work together to identify and enhance the quality of care they provide.	consistency were analysed using the statistical computer software package, StatsDirect. A qualitative software package, NVivo, was used to help analyse the information gathered on the feasibility of the assessment process and on assessor competence and performance.	improvement.
Gough and Reynolds (2000)	1, 6	United Kingdom; pathology laboratories.	To examine laboratories managers' and clinicians' opinions about Clinical Pathology Accreditation (CPA) and whether it had produced any significant benefits to pathology services.	An unsolicited questionnaire (15 items) mailed, post survey, to 145 laboratories; 5 point Likert scale used; 93 replies, 64 % response rate. Completed by managers (70%) and clinicians (30%). Percentages and qualitative comments provided.	Most laboratories felt accreditation by CPA had resulted in better laboratory performance with more documentation and better health and safety training procedures. A significant proportion considered accreditation to be over bureaucratic, inefficient and expensive. A concern that accreditation covered the domains of other regulatory bodies was also expressed.
Grasso, Rothschild, Jordan and Jayaram (2005)	5, 6	United States; hospital.	To compare the error detection sensitivity of licensing and accreditation surveys with that of an independent audit.	In one organisation a comparative study examining rates from the independent audit and accreditation survey.	When experienced surveyors fail to detect a highly error prone medication usage system, it raises questions about the validity of survey scores as a measure of safety.
Greco, Sweeney, Brownlea and McGovern (2001)	7	Australia; general practices.	To survey patient views on standards as part of the accreditation program.	A 27 item questionnaire was completed by over 53,000 patients from 449 general practices.  Analysis: percentages and statistical analysis presented.	Patients considered that doctors need to improve interpersonal skills, access, availability and patient information.
Grenade and Boldy (2002)	1	Australia; health	This is a report on the first phase of a study,	In-depth interviews were conducted with thirty participants.	The accreditation system is generally supported by

		professionals.	the aim of which was to review the implementation of the accreditation process in Western Australia from the perspective of service providers.	Analysis: themes and descriptive analysis presented.	service providers.
Griffith, Knutzen and Alexander (2002)	5	United States; Hospitals.	To examine the relationship between outcome measures and accreditation measures for hospitals.	Across 742 cases (non-federal general hospitals), seven performance measures (derived from Medicare) were matched against accreditation scores (JACHO).  Analysis: statistic analysis including, Pearson correlations, a comparison of means, and a two stage Heckman regression analysis.	Data show no relationship of substance, and a confusing pattern of pattern of minor and sometimes conflicting associations.  There is a potentially serious disjuncture between outcome measures and accreditation evaluations.
Gropper (1996)	9	United States; health professionals (nurses).	To examine if the accreditation of a nursing education program made a difference in the performance of its graduates.	Within one state (Maryland) the passing rates for graduates from 14 degree programs were examined.  Analysis: statistical tests undertaken.	Graduates from accredited programs do not perform better than those from non-accredited programs.
Gross, Braun, Kritchevsky and Simmons (2000)	5	United States; hospitals.	To compare clinical indicators from several systems to determine the consistency of result.	Mailed survey to a volunteer sample of 24 hospitals epidemiologists. Five systems selected, standardised data collection procedures used and subject to statistical analysis and adjusted for risk (as necessary).  Analysis: rank order comparisons and comparison charts.	It is faulty to assume that clinical indicators derived from different measurement systems will give the same rank order.
Hadley and McGurrin (1988)	5	United States; Hospitals.	To determine if accreditation is related to seven hospital characteristics generally accepted as	Data from 216 (psychiatric) hospitals examined. The characteristics examined were average cost per patient, per diem bed cost, total staff hours per patient, clinical staff hours	Analysis revealed a weak relationship between accreditation or certification status and the indicators of quality of care. Accredited or



			reflecting quality of care.	per patient, percent of staff hours provided by medical staff bed turnover, and percent of beds occupied.	certified hospitals were, however, more likely to have higher values on specific indicators than hospitals without accreditation.
Hampel and Hastings (1993)	6	United States; nursing homes.	To evaluate a protocol developed by the Joint Commission on Accreditation of Healthcare Organizations to assess the capability of special care units to provide quality care.	Comparison by testing two separate surveys at two independent sites.  Analysis: correlation analysis undertaken.	The standards used, their intent, and the survey process were considered sound by those who tested the protocol and by those who were evaluated by it.
Heuer (2004)	7	United States; hospitals.	To examine the relationship between accreditation scores and patient-satisfaction ratings.	For 41 hospitals (acute, >200 beds, not-for-profit) a retrospective review and comparison of summative and selected categorical accreditation scores (from JCAHO) and independently measured patient satisfaction ratings.  Analysis: correlation and multiple-regression statistical methods employed.	No relationships identified, suggesting a dissociation between the two items.
Huda et al. (2002)	6	United States; health professionals (radiology).	To evaluate the American College of Radiology (ACR) accreditation phantom for assessing image quality in digital mammography.	Eight observers participated in an inter-rater observational study (assessment of digital images). The results were compared for variability.	The current design of the ACR accreditation phantom is unsatisfactory for assessing image quality in digital mammography.
Hurst (1997)	6, 10	United Kingdom; hospital (small).	To examine the characteristics of health care accreditation schemes, in particular the Trent small hospital accreditation scheme	Data collected through document analysis/ literature review, 20 interviews and 38 questionnaires (147 items; 79% response rate) with stakeholders.  Analysis: descriptive and statistical	Results confirmed to-date (1997) published understanding of accreditation. The program is valued by stakeholders, who are also keen to see it

			(TSHAS).	analysis presented.	continue to evolve.
Ito and Sugawara (2005)	8	Japan; hospitals.	To examine the association between accreditation scores and the disclosure of accreditation reports.	Data collected from 547 hospitals (67%) participating in the accreditation program (total 817 hospitals accredited). A 13 item questionnaire was completed by the CEO.  Analysis: statistical analysis presented.	A positive association between accreditation scores and public disclosure established.
Jain and Willett (2006)	6	United Kingdom; health professionals (medical).	To assess the efficacy of inspection and accreditation by the Specialist Advisory Committee for higher surgical training in orthopaedic surgery and trauma.	Seven training regions with 109 hospitals and 433 Specialist Registrars were studied over a period of two years.  Analysis: statistical analysis presented.	There is an imbalance between the setting of standards and their implementation.
Juul et al.(2005)	2, 5	Denmark; Hospitals.	To examine the availability and quality of clinical guidelines on perioperative diabetes care in hospital units before and after a randomised clinical trial (RCT) and international accreditation.	Interventional "before-after" study in 51 units (38 surgical and 13 anaesthetic) in nine hospitals participating in a RCT in the greater Copenhagen area; 27 of the units also underwent international accreditation.  Analysis: statistical analysis presented.	The combination of conducting both the RTC and international accreditation led to a significant improvement of both dissemination and quality of guidelines on perioperative diabetic care.
Kreig (1996)	6	Australia; health care organisations.	To examine the ACHS accreditation program, focusing on the usefulness of the program to assist movement towards best practice, its impact on outcomes and performance, the benefit of the program, and how it could be of greater assistance.	Questionnaire survey of 248 healthcare organisations due for accreditation by ACHS in 1996. A 56% response rate for participating organisations was achieved, and a 52% rate for distributed questionnaires (663 in total returned).	A large majority of respondents agreed that the accreditation program had been of significant benefit to their organisation. The benefits covered improving communication, commitment to best practice, information available for evaluation activities and quality care activities, improved structure for quality, greater focus on consumers, supporting

					planned change, and, staff management and development.
Macfarlane, Tavabie and Descombe (2003)	1	United Kingdom; health professionals (medical).	To describe an evaluation of a pilot program to prepare general practitioners for accreditation.	Interviews with a sample of 20 participants on the feasibility, acceptability and practicability of the program.	Demonstrated that GPs are extremely supportive of the program, valuing the flexible, learner-centered style of the teaching and learning.
Mazmanian, Kreutzer, Devany and Martin (1993)	3	United Kingdom; rehabilitation facilities.	To examine the similarities and differences between accredited and non-accredited facilities.	A survey of 398 facilities, comparing disciplines providing therapy, therapy formats used, costs and providers of training.	Suggested no significant differences in the organization and delivery of cognitive rehabilitation therapy in Commission on Accreditation of Rehabilitation Facilities (CARF) and non-CARF program.
McCleish (2002)	9	United States; health professionals (nursing).	To explore the relationship of definitions of critical thinking and the use of critical thinking measurement tools with accreditation affiliation in baccalaureate nursing programs. In addition, contributing factors towards selection of an accrediting agency, and geographical accreditation region of the program were investigated to determine which characteristics are associated with their selection of accrediting	A survey was sent to 330 programs; 153, a response rate of 46%, were returned.	There were significant positive relationships between accreditation affiliation and membership in professional nursing organizations and between accreditation affiliation and major contributing factors used to select accrediting agencies. Additional significant findings indicated there is a difference among factors contributing to selection of an accrediting agency, there is a relationship between types of tools used to assess critical thinking and definitions of critical thinking, and there is a relationship between types of tools used to assess

			agencies.		critical thinking and reports of growth in critical thinking abilities.
Mihalik, Scherer and Schreter (2003)	4	United States; managed behavioural health care organisations (MBHO).	To present a model for MBHO for allocating resources and a cost analysis of expenditures for accreditation.	A model and analysis presented based on the authors' experience of participating in accreditation surveys in MBHO.	The costs associated with accreditation should be seen as a essential investment and demonstration of commitment to quality.
Miller et al. (2005)	5	United States; hospitals.	To examine the association between accreditation scores and quality and patient safety indicators.	Data accessed from JCAHO (accreditation) and AHRQ (quality indicators) and matched for 2116 institutions.  Analysis: statistical analysis including multivariate signal extraction, regression analysis, principal component analysis, multivariate linear regression, boxplots and analysis of variance, ordered linear logistic regression models, and correlations.	No significant relationships existed between JCAHO categorical accreditation decisions and quality indicators.
Nandraj, Khot, Menon and Brugha (2001)	1	India; stakeholders (hospital owners, professional bodies and governmental officials).	To elicit the view of stakeholders on the introduction of accreditation and what form it should take.	A structured questionnaire was mailed to 1157 private hospitals; 94 returned, an 8% response rate. A sub-sample of 25 (drawn from the 725 hospitals that identified their bed size) – purposively selected to represent broad geographical distribution, ownership and range of size; 19 (76%) owners/administrators agreed to participate in a semi-structured face-to-face interview.  Also interviewed, as above, were: 11 representatives from professional associations; 2 consumer organisations representatives; 6 government officials; 2 insurance company representatives; and, 2 health financiers.	A high level of support for a program (voluntary, standards based approach, periodic external assessment and quality assurance measures). The biggest obstacle identified was how to finance the program.

				Analysis: frequency tables and cross tabulations computed; content analysis of qualitative data.	
Peterson (2003)	3	United States; physical therapy programs.	To identify which faculty variables were associated with accreditation outcome of the Commission on Accreditation in Physical Therapy Education (CAPTE).	Two questionnaires were mailed to all program directors (56% response rate of 18) and faculty (50.4% response rate of 1,708) of CAPTE-accredited-physical therapy programs.	The manager is the most important entity in achieving a successful accreditation outcome. Managers who are perceived as participative, have more years of experience, have written more self-studies, and whose faculty support the accreditation process are likely to have more positive accreditation outcomes.
Pomey, Contandriopoulos, Francois and Bertrand (2004)	2	France; hospital.	To examine the dynamics of change that operated following preparations for accreditation.	An embedded case study of a university hospital. Semi-structured interviews, questionnaires and focus groups conducted with professionals.  Analysis: qualitative (Atlas TI software) and quantitative (chi-squared tests and ANOVAs) analysis conducted.	Preparations for accreditation provided an opportunity to reflect on the operation of the organisation. Enabled the introduction of a continuous quality program, greater consideration of exit surveys, and improving procedure documentation.
Pongpirul et al. (2006)	1, 10	Thailand; health professionals.	To explore problems and obstacles of hospitals implementing quality management systems according to the hospital accreditation standards.	Thirty-nine hospitals in all 13 regions of Thailand participated. A total of 728 health care professionals (response rate 94.9%), and 41 surveyors (response rate of 73.2%) of the national accreditation program, provided their opinions by completing a self-administered questionnaire containing 24 items.  Analysis: descriptive statistics and comparison of views by Spearman's rank correlation test.	Health care professionals have been facing many problems with multidisciplinary process-related issues of the accreditation standard, whereas surveyors might have had some difficulties in conveying the core QI concepts to them.

Reznich and Mavis (2000)	1, 6	United States; medical (family medicine) program.	To pilot test accreditation guidelines for family medicine faculty development fellowship programs.	Five sites participated by completing accreditation application, self-study and a site visit. Both qualitative and quantitative data collected and analysed.	While fellowship faculty felt that the requirements and criteria were valid for determining quality of faculty development fellowship programs, the process was time-consuming and could be shortened.
Rockwell, Pelletier and Donnelly (1993)	4	United States; Hospital.	To calculate the cost of the hospital preparing for and undergoing an accreditation survey.	Case study of one neuropsychiatric hospital.	Questions whether the quality of care was improved by the accreditation process and the costs constitute an appropriate use of resources.
Salmon, Heavens, Lombard and Tavrow (2003)	5	South Africa; Hospitals.	To conduct a prospective randomised trial of an accreditation program in a developing country.	A random sample of 20 public hospitals stratified by size; ten participated in the accreditation program and ten were a control group. Data were from the Council for Health Services Accreditation of Southern Africa. Data comprised measures of hospital structure and processes and 8 quality indicators (independently collected). Qualitative and quantitative comparison of data from the two groups was undertaken.	Those hospitals participating in the program improved their compliance with accreditation standards; non-participating hospitals did not. However, there was no observed improvement on the quality indicators.
Scanlon and Hendrix (1998)	1	United States; purchaser organisations and representatives from other health organisations.	To capture the views of the representatives who attended a two-day program explaining the National Committee for Quality Assurance (NCQA) and Joint Commission on the Accreditation of Healthcare Organisations accreditation programs.	Two surveys (N = 20) administered to representatives. First survey (72 questions) at the start of day one and the second (92 questions) at the end of day two. The surveys examined understanding and attitudes to the accreditation programs.  Analysis: response percentages for questions.	Purchasers have a keen interest in health plan accreditation and rely heavily on accreditation decisions when choosing which plans to offer their beneficiaries. Purchasers also desire to understand the strengths and weaknesses of the accreditation process for their own contracting purposes.

Sheahan (1999)	3	Australia; hospital.	To outline a program developed to create a care partnership between clinicians and patients in a large acute private hospital.	Both qualitative (descriptive) and quantitative (percentages) data presented.	The program helps focus the hospital on a key customer group, that is, patients.
Silver, Geis and Bateman (2004)	5	United States; medicare quality improvement organisations (QIOs).	To examine the adequacy of QIO performance national wide.	Participating organisations were Medicare beneficiaries hospitalized for conditions monitored by Centers for Medicare and Medicaid Services (acute myocardial infarction, heart failure, atrial fibrillation or stroke, or pneumonia) in Utah with reference to national trends in care.	Comparisons of 1998 and 2000 data showed improvement in 15 of 16 inpatient quality indicator performance measures.
Simons et al. (2002)	3	Canada; trauma centers.	To measure outcomes within a single regional trauma system, and to compare outcomes in the one accredited center to the non-accredited centers.	Questionnaire circulated to three hospitals. Patient data collected through a health registry.  Analysis: z scores and TRISS-adjusted mortality odds ratios conducted.	Development of a trauma program and commitment to meeting national guidelines through the accreditation process appears to be associated with improved outcome after injury.
Snyder and Anderson (2005)	5	United States; quality improvement organisations (QIOs).	To explore whether the quality of hospital care for Medicare beneficiaries improves more in hospitals that voluntarily participate with Medicare's QIOs compared with nonparticipating hospitals.	A retrospective study was conducted. Quality indicator data (15 measures) was from 4 QIOs across 4 states and one district. The medical records of approximately 750 Medicare beneficiaries per state in each of 5 clinical areas (atrial fibrillation, acute myocardial infarction, heart failure, pneumonia, and stroke) were abstracted at baseline (1998) and follow-up (2000-2001).	Hospitals that participate with the QIO program are no more likely to show improvement on quality indicators than hospitals that do not participate.
Stoelwinder (2004)	1	Australia; medical clinicians.	To explore what doctors working in hospitals want from hospital accreditation.	Qualitative data collected from 12 focus groups in 6 hospitals across Australia involving consultants, registrars and senior medical officers. Total number of participants was 72.	Doctors are unaware or sceptical of accreditation; doctors hold concerns about how safety and quality of care should be measured; and doctors perceive

				Analysis: thematic analysis conducted.	themselves to be accountable within a professional framework (self/ patient/ colleagues) not to the organisations in which they work.
Tracey, Arroll and Richmond (1998)	9	New Zealand; health professionals (medical).	To determine whether the requirements of the reaccreditation program of the Royal New Zealand College of General Practitioners (RNZCGP) have changed the amount and type of continuing medical education (CME) done by the participating general practitioners.	A written questionnaire was sent to 200 randomly selected general practitioners doing the RNZCGP reaccreditation program; response rate 82%.	The RNZCGP reaccreditation program is having beneficial effects on the CME activities of many participating general practitioners.
VanSuch et al. (2006)	5	United States; Hospital.	To determine whether documentation of compliance with any or all of the six required discharge instructions is correlated with readmissions to hospital or mortality.	A retrospective study at a single tertiary care hospital was conducted on randomly sampled patients hospitalised for heart failure; 782 participants.  Analysis: statistical tests performed.	Including discharge instructions among other evidence-based heart failure core measures appears justified.
Verstraete, van Boeckel, Thys and Engelen (1998)	1	Belgium and Netherlands; medical laboratories.		Multiple choice questionnaire administered to three laboratories; two private in Belgium, 29 and 20 responses; one hospital in Netherlands, 28 responses. Follow-up with the first laboratory one year later received 24 responses.  Analysis: percentages and comparisons by chi-square analysis.	A large majority of representatives considered that accreditation increased their workload. Two laboratories did not think accreditation improved the quality of results. A small majority preferred working in an accredited laboratory. Advantages: accreditation improved the traceability of



					work and improved procedures. Disadvantages: increased paperwork, decreased adaptability and perception that attention directed to processes rather than quality.
Viswanathan and Salmon (2000)	6	United States; accreditation organisations (JCAHO, NCQA, AMAP, AAHC/ URAC, and AAAHC).	To review organisations that perform accreditation and establish standards for healthcare delivery.	Data collection not explained. For each organisation the information provided is a description of the mission, history, description, program/ processes and standards, performance measures and perspective.	Uniqueness of each accrediting organisation and their program and standards noted. Different organisations better suited to accredit specific areas of health.
Whittaker, Green-Thompson, McCusker and Nyembezi (2000)		South Africa; Hospitals.	To provide an overview of the accreditation program in South Africa.	A descriptive study which includes the program structure, how it is governed, and how standards were developed and organised.	The program benefits the health organisations.
Williams et al. (2005)	5	United States; hospitals.	To examine the effect of feedback on hospital quality indicator performance.	For more than 3000 accredited hospitals quality of care indicators, for 18 items for acute myocardial infarction, heart failure and pneumonia were tracked over a two year period.  Analysis: statistical rates, means, trends were calculated and subjected to complex analysis.	Consistent improvement noted over the study period. Hospitals initially with low levels of performance had greater improvements than those with higher performance.
Williams et al. (2006)	5	United States; hospitals.	To investigate the reliability of self-reported standardized performance indicators introduced by JCAHO.	Re-abstracted data from a random sample of 30 hospitals compared with original data. Structured interviews held with staff to clarify differences.  Analysis: statistical rates and means were calculated and subjected to analysis.	Symmetry of disagreement among original abstractors and re-abstractors identified eight indicators whose differences in calculated rates were statistically unlikely to have occurred through random chance.
Zarkin, Dunlap and Homsí	4	United States; methadone	To estimate the costs of pursuing accreditation	Cost data from 102 sites collected. Sample chosen using a multistage,	Sites face similar costs regardless of characteristics

(2006)		treatment sites.	methadone treatment sites.	stratified randomised control sample design. Estimates of costs through statistical techniques.	such as size and location. Rural and smaller sites incur a greater burden from accreditation. Key findings: accreditation preparation costs are the majority of the cost; majority of preparation in the final months prior to survey; preparation is labour intensive; and, no significance difference in cost by accreditation outcome nor previous accreditation.
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