

THE QUALITY OF CRITICAL CARE SERVICE MANAGEMENT IN SOUTH AFRICAN HOSPITALS



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ABSTRACT

The purpose of this study is to determine the quality of critical care service management in South African hospitals. A combined qualitative and quantitative research strategy, in accordance with the Council for Health Service Accreditation of Southern Africa (COHSASA) programme, was utilised. The hospitals implement the national standards during the preparatory phase, after having entered into an agreement with COHSASA. This is followed by an external survey phase where the hospital's compliance with the standards is evaluated. The critical care service is one of the professional services included in the accreditation programme. Their performance is compared with selected other professional services and their compliance with the core elements is also evaluated. The critical care services in South Africa are compliant with the national standards - their standard of equipment and patient interaction is commendable. The deficiencies are mainly within the quality improvement programmes that require further development and refinement.

OPSOMMING

Die doel met hierdie studie is om die gehalte van die bestuur van kritiekorgdienste in Suid-Afrikaanse hospitale te bepaal. 'n Gekombineerde kwalitatiewe en kwantitatiewe navorsingstrategie, ingevolge COHSASA se akkrediteringsprogram, word nagevolg. Die betrokke hospitaal wat 'n ooreenkoms met COHSASA aangegaan het, implementeer die standaard tydens die voorbereidingsfase. Hierna volg die eksterne evalueringsfase om die hospitaal se voldoening aan die standaard te bepaal. Die kritiekorgdienste is een van die professionele dienste wat by die akkrediteringsprogram ingesluit is. Hul prestasie word vergelyk met enkele ander professionele dienste. Vervolgens is hul prestasie betreffende die kernelemente in die program beoordeel. Die kritiekorgdienste in Suid-Afrikaanse hospitale voldoen aan die nasionale standaard - dit is veral die toerusting en pasiënt-interaksie wat vermelding verdien. Die leemtes lê hoofsaaklik in die gehalteverbeteringsprogramme wat verdere ontwikkeling en verfyning benodig.

INTRODUCTION

Quality refers to excellence within a given service and excellence is described by means of standards and criteria

in accordance with the expectations of the different role-players - the patient, service providers and funders. These standards can be structure, process or outcome based. Compliance with standards can be evaluated by the service providers themselves in an informal manner, or within a formalised accreditation system. Accreditation is a process whereby national standards are set and compliance with these standards is evaluated. Generic national standards are formulated by the professions and services at large, and implemented by the specific health care institutions or services, followed by external evaluation by peers. This article focuses on the quality of critical care service management in accordance with the national accreditation programme of the Council for Health Service Accreditation of Southern Africa (COHSASA).

There are many factors impacting on the quality of service delivery. Certain facilities, equipment, structures and systems need to be in place to enable quality health care to be practised and delivered. The process of service delivery is influenced by the practitioners themselves and the way in which they practise health care, which should be directed by clinical and managerial guidelines. There are several dimensions of quality which relate mainly to accessibility, equity, acceptability, efficiency, appropriateness/applicability, and safety and professional/technical competency. These factors and dimensions need to be considered when the quality of service management and delivery are assessed and evaluated.

The Council for Health Service accreditation was initiated in 1993 with the formulation of national standards by various expert groups, with the implementation of these standards in six pilot hospitals who agreed to participate on a voluntary basis. The assistance of an international consultant was utilised during this period. COHSASA was registered as a not-for-gain organisation in October 1995. To date 76 health care facilities have entered COHSASA's hospital accreditation programme of which twenty eight have been awarded accreditation status and another twelve are due for final evaluation by the Technical Committee in due course (Whittaker, 1998). COHSASA represents a national collaborative effort between the state, private industry, consumers and health professionals. The programme aims to assist participating hospitals to comply with professional organisational standards which define systems and processes that the various professional bodies believe should be in place.

The critical care service is one of the professional services that are assessed within the hospital accreditation programme. It appears as if the critical care services compare very favourably with the other professional services. The research question is therefore formulated as follows: what is the quality of critical care service management in South African hospitals? The purpose with this research is to evaluate the quality of critical care service management within the COHSASA programme. A total of 61 critical care

services have been evaluated within the accreditation programme of which most (N=55) are part of private hospitals.

TERMINOLOGY

Quality

Quality refers to the features or characteristics of excellence (stated in the form of standards and criteria) and the degree of compliance with pre-determined standards.

Critical care service management

A critical care service is one of the professional services within a hospital offering health care to the compromised patient. Critical care service management is the comprehensive health care service for the compromised patient consisting of the following elements: philosophy/objectives, management and staffing, staff development and education, operational policies/procedures, facilities and equipment, patient interaction and quality improvement.

Accreditation

Accreditation is a process whereby national standards are set and compliance with them is evaluated by means of a formalised process comprising of internal evaluation by the health care service staff themselves during the preparatory phase, followed by an external evaluation by peers during the survey phase. A computerised calculation of results is done, followed by an evaluation of these results by a Technical Committee. On compliance with the standards, the accreditation status is awarded to the health care service by the Accreditation Board of the Council for Health Service Accreditation of Southern Africa (COHSASA). Accreditation certificates are valid for one to three years.

RESEARCH STRATEGY AND METHOD

A combined quantitative and qualitative research strategy is followed in accordance with the formalised accreditation process as developed and implemented by the Council for Health Service Accreditation of Southern Africa (COHSASA), consisting of an internal and external evaluation survey (Whittaker & Muller, 1997).

Applying the principles as described by Lincoln and Guba (1985) ensures the trustworthiness of the evaluation survey. The truth-value of the results (credibility, applicability, confirmability and reliability) is increased by the following measures:

- a formalised accreditation system and process;
- prolonged engagement by the staff where the preparatory phase takes twelve to eighteen months and the staff are continuously involved in the interpretation and implementation of the standards;
- the surveyors are professional experts who are familiar with the standards and spend at least three days in the hospital during a survey;
- a combination of evaluation strategies are used by the surveyors to assess compliance with standards;

- a structured verification process is followed by the surveyors during the external survey whereby the non/partially compliant, as well as those standards exceeding compliance, are verified by a second surveyor;
- a formalised process of internal and external validation of results is followed: a baseline assessment by the staff of the hospital, followed by a validation of these results by COHSASA staff, as well as continuous validation by the facilitator during the implementation of the standards;
- the external survey results are validated by the hospital staff with the opportunity of challenging any results and motivations which could result in a focus survey by the same or other surveyors;
- the external results are discussed and validated by the Technical Committee of COHSASA;
- the final results are discussed and validated by the Board of Directors of COHSASA;
- the standards are continuously updated to make provision for content validity of standards (the fifth revised version is available);
- a comprehensive computerised system is used for the calculation of results to exclude human error in this regard;
- international collaboration with the International Society of Quality in Health Care during the annual international conferences where the accreditation of health services is one of the interest groups and the principles, process methods and problems related to accreditation are discussed.

The accreditation process follows a sequential and formalised process with a health service entering into a voluntary contractual agreement with COHSASA, entertaining a preparatory phase followed by the external survey phase.

Preparatory phase

After having entered into the formal agreement with COHSASA, a baseline survey is performed by the staff followed by a validation survey by COHSASA. The standards are then implemented in preparation for the external survey. A formalised process of facilitation is followed whereby the hospital is assisted with the implementation of the standards. The preparatory phase takes approximately twelve to eighteen months, depending on different factors impacting on the process and the capacity of the health care service to implement the standards. Approximately six weeks prior to the external survey, another internal evaluation is conducted by the hospital staff to determine the progress. The results of both the baseline and pre-external surveys are calculated and forwarded to the team of external surveyors.

External survey phase

Peer group evaluation is done by a team of external surveyors, based on the national standards and guidelines provided in terms of the accreditation programme. The surveyors not only provide an objective, external opinion regarding compliance with standards, but because of their

experience they are also in a position to compare a specific health care facility with the larger group of health care organisations as a uniform set of standards are utilised, thereby providing the facility with information about how it compares within its peer group. The surveyors may also provide advice to the health care organisation when poor compliance has been achieved, which adds an educational and capacity building dimension to the accreditation process. The surveyors are trained in the principles of peer group evaluation and must complete at least two surveyor-training sessions, which include the beginner's course, as well as the advanced training programme where mock surveys are conducted. The surveyors also need to comply with the principles of credibility as experts in the particular fields being surveyed by them.

On completion of the external survey, a report is submitted by the surveying team to COHSASA, who finalises the report and calculation of results. A transparent process of validation is followed whereby the health service management gets the opportunity to comment or react to the report. The surveyors have to justify in writing any non/partial compliance, as well as those standards and criteria exceeding compliance. When there are discrepancies between the views of the surveyors and staff of the health care service on any ratings allocated or motivations given, this is verified by the COHSASA facilitators and surveyors. The report is then submitted to a Technical Committee who recommends the status of accreditation to the COHSASA Board. When there are very serious or serious limitations impacting on the quality of health service delivery, that particular hospital or health service receives six months to address the problems after which a focus survey is conducted. On compliance with the standards the accreditation status is awarded, the duration of which can range between one to three years.

Quantitative and qualitative analysis

The standards and criteria are set in the form of a standards manual/evaluation instrument. Compliance with the standards is evaluated and the surveyor allocates a rating. This rating can be one of the following four: non-compliance, partial compliance, compliant and exceed compliance. The surveyor in the case of non/partial-compliance with standards conducts a further qualitative evaluation. The degree of seriousness is determined, which could be very serious, serious, moderate or mild. The surveyor also determines the impact of the non/partial compliancy, which could be applicable to patient care, legality, staff and patient safety or efficiency. The surveyor therefore utilises both quantitative and qualitative methods of analysis. A computerised calculation (a statistical programme developed by COHSASA) is done by the programme administrators of COHSASA and the final rating could range between 0-40 which is considered to be non-compliant, 41- 80 which represents partial compliancy, and 81-120 as compliant. A score obtained higher than 120 implies that the standard exceeds compliance. A computerised weighting system is included in the statistical programme to ensure reliability of results. When the non/partial com-

pliance with a criterion is rated as very serious impacting on patient care or legality, this will impact on the results of that standard by means of a weighted deduction and calculation.

Evaluation strategies

The surveyor utilises different evaluation strategies to assess compliance with the different standards and criteria. These strategies include individual and/or group interviews with service providers and patients, direct and indirect observation where the surveyor also follows the route of the patient (e.g. from admission to discharge/transfer) involving the principle of a simulated patient experience. Document analysis also forms a significant part of the evaluation. The surveyor has to validate or cross check the compliance with standards between the different professional services (e.g. whether the pharmaceutical drug control policies are implemented in the clinical units), as well as between the managerial, professional and support services (e.g. whether the personnel policies are being implemented at operational or grass root levels). The external survey is conducted by at least three surveyors and the average time spent is three days (which includes the evaluation of night duty services when applicable).

Core service elements

The COHSASA standards comprise of core elements that are assessed in every health care institution or service. These core service elements relate to the management of the service, health and safety in accordance with the related legislation, resuscitation services, infection control and sterile services, the food, domestic, laundry and maintenance services, as well as the health record system. National expert groups formulate national standards and criteria for these core service elements and these standards have been reviewed once and the third revised set of standards is in the final phase of completion.

Professional service elements

Apart from the core service elements that are assessed, the different professional services are also assessed. These include in-patient clinical/medical services (both medical and surgical), the anaesthetic or theatre services, the nursing and pharmaceutical services. The different specialities that are offered in that particular health care service are also assessed, which could be critical care service, obstetric/maternity, psychology, laboratory, physiotherapy and many other services. The national professional groups for the professional service elements have set national standards. The critical care service standards have been developed by a group of intensivists and approved by the National Critical Care Society.

Health service standards: common areas

There are certain common areas in all the services that are assessed based on the national standards. These common areas include the philosophy/objectives of that service/speciality, the staffing composition, as well as the management and development of the staff, operational

policies and procedures required in that speciality, the patient interaction and lastly the quality improvement programme. Although the focus of the accreditation programme at this stage is therefore on structure and process standards, the assessment of outcome will follow as soon as the different clinical indicators have been developed. The quality improvement programme does make provision, however, for that particular service to monitor outcome of service delivery.

Sampling and realisation

A total of 76 hospitals have entered the COHSASA accreditation programme of whom 28 have been awarded accreditation status and many are in the final post-survey process prior to accreditation. All the critical care services that have been assessed are included in this study which amounts to 61 of whom 55 are in private hospitals and 6 are in public hospitals. The inclusion criteria are as follows:

- hospitals that have entered into a formal agreement with COHSASA;
- the hospitals and critical care services who have completed the external survey where computerised results are available;
- all three categories of critical care units, as classified by the South African Society of Anaesthetists, are included.

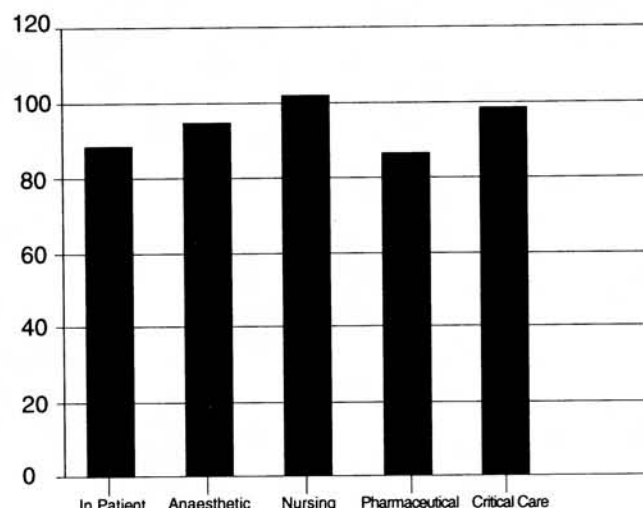
RESULTS

The results of the evaluation survey on the quality of critical care service management in South African hospitals, are presented by means of an overall comparative performance where the quality of critical care service management is compared with four other selected professional services, being in-patient clinical services (medical and surgical services in the hospitals), the anaesthetic/theatre services, as well as the nursing and pharmaceutical services. These professional services were selected based on the fact that they are assessed in all the hospitals that have entered the COHSASA programme. The critical care service management is assessed in terms of the difference between the initial baseline assessments and the final external survey results. This is followed by a general analysis of the quality of critical care service management in terms of their overall performance in the different standards applicable to the management of critical care services.

Overall comparative performance

The quality of critical care service management compares very favourably with the other professional services (see figure one). The nursing services have the highest score of 103, followed by the critical care services with a rating of 97,8. The anaesthetic services have an overall total of 94, followed by the in-patient clinical services scoring 89 and the pharmaceutical services with 88. These professional services are all compliant with the standards.

Figure 1: Overall Comparative Performance Professional Services (N=61)



Critical care service performance: comparison between baseline and external surveys

When the hospital has entered into a formal contractual agreement with COHSASA, the standards manual is given to management. A COHSASA facilitator assists the staff with the interpretation of the standards and continuous empowerment regarding the principles of quality improvement is done. A hospital-based quality improvement committee is elected with one overall co-ordinator for the programme. A baseline internal assessment is conducted by the staff, validated by COHSASA staff, followed by the external assessment and survey approximately 18 months later. Table one reflects the significant improvement of these two assessments. Only four critical care units were compliant (obtained an overall score of at least 80) during the baseline survey as opposed to the external survey score of compliancy by all the critical care units (N=61). The baseline assessment revealed an overall partial compliancy by 39 units, with an average total score of 64,3 opposed to the external average score of 97,8 (compliant) by the units in the external survey. The range of scoring during the baseline survey of 49-87 in the different criteria has also improved significantly to 83-117 during the external survey.

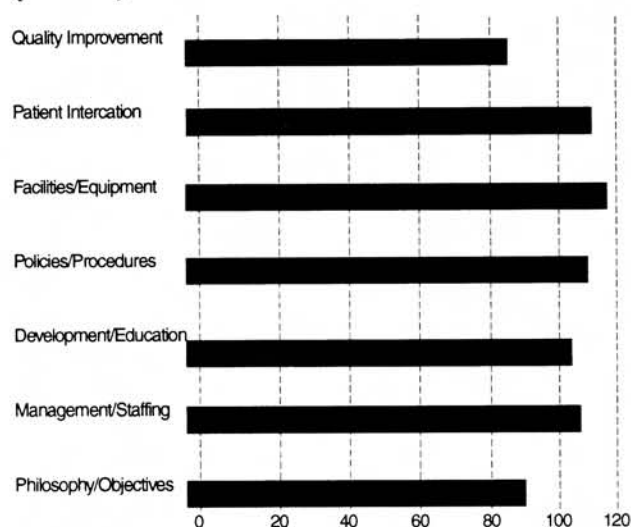
**Table 1
Critical Care Service Performance:
Comparison between baseline and
external surveys (N=61)**

	Compliant	Partially C	Average Score	Range
Baseline Survey	4	39	64.3	49-87
External Survey	61	0	97.8	83-117

Overall critical care service performance

The management of critical care services is divided into the seven different areas and the quality of each area in terms of overall performance, is briefly described (see figure two).

Figure 2: Overall Criticare Service Performance (N=63)



a) Philosophy/objectives

Philosophies and objectives serve as the fundamental guide or direction of a service or organisation. The standard related to philosophy and objectives reads as follows: The critical care service has a philosophy, strategy and objectives to meet the needs of the people served. This standard is assessed by seven criteria focusing on the written philosophy with specified content, written objectives focusing on updating of clinical knowledge and competency, continuous assessment and review of the service in a participative and decentralised manner.

The overall external survey score of the critical services in this standard is 90, which implies that the units are compliant. Although an effort has been made to formulate the philosophy and objectives, they tend to be only partially compliant (N=30) in terms of process and content thereof. The principle of collective participation by all the staff to facilitate ownership for these philosophies and objectives and to also improve the level of teamwork in the unit, requires attention. This can be attributed to the fact that most of the hospitals included in this study are within the private sector where the medical practitioners are in private practice and don't have the time to become involved in the general management of the critical care unit. Where there is a specific medical director accountable for the clinical and managerial outcomes of the unit, the principle of participative decision-making is adhered to.

b) Management and staffing

The staffing of a critical care service is obviously a very crucial aspect that could impact on the quality of the service delivery. Standard: The critical care service is managed and staffed to provide a safe service and is co-ordinated with other related departments and services of the hospital. Compliance with this standard is assessed by 29 different criteria focusing on management autonomy (including financial management), directed by an authorised medical practitioner with a deputy, the provision of a

24 hour consultancy service and the continuous availability of a medical practitioner. The criteria also relate to the nursing staff establishment in terms of specialised training, nurse : patient ratio, the availability of intensive care medical technologists, specified ancillary and support services. General personnel legalities relating to the principles of organisation, employment, written job descriptions, a performance appraisal system, records and statistics, as well as adequate communication by means of meetings, are stated in the criteria.

The overall performance of the critical care units is a score of 104. Although the critical care units are generally well staffed, the majority of units (N=38) don't meet the criteria of at least 50% of the nursing staff being intensive care qualified and registered as such with the South African Nursing Council. It appears as if this criterion is not realistic in South Africa with only 3500 qualified and registered intensive care nurses available of whom a significant number are employed as medical representatives and case managers, thus not practising as intensive care nurses. Multi-disciplinary meetings are not held in many units (N=18). The principle of participative and multi-disciplinary management within the critical care services are not well understood and implemented. The principle of decentralised financial management is almost non-existent (N=51).

c) Staff development and education

This standard requires that a formalised staff development and education programme for the critical care service is in place. This standard is assessed by 20 different criteria focusing on the orientation and induction programmes, as well as a formalised system of continuous education of staff. The relationship between the critical care service and the rest of the human resource programme of the hospital, has to be clear. Not only clinical updating and empowerment is necessary, but also the general principles of decentralised service management, occupational health and safety and research need to be included in these programmes. The critical care service needs to be able to justify the formalised system by means of appropriate record keeping and statistical analysis of educational outcomes.

The critical care services scored a total of 103 in this element. Although the units tend to be overall compliant with this standard, many units (N=32) do not comply with the specified content related to occupational health and safety, research and performance appraisal to be included in the training programmes. This could be due to the high workload within the units and the focus of in-service and continuous education on clinical aspects. There is also a lack of general resources for continuous education such as access to an information and library service (N=22). Evidence is required that the professional nurses who are not qualified as intensive care nurses undergo special in-service education programmes focusing on critical care nursing and this is not the case (N=28) which could lead to liability problems and litigation, especially with the new equity employment and skills development legislation of the country.

d) Policies and procedures

This standard requires that policies and procedures for the critical care services are in place in accordance with 32 criteria. These policies and procedures relate to the process of participation and ownership in policy formulation, as well as to selected prescribed topics/interactions to ensure safety and high quality of critical care service delivery. These topics focus on clinical interactions (e.g. admission criteria, administration of parenteral fluids and other medications, resuscitation, laboratory tests and specimens, infection control, donor organs, etc.) as well as on certain administrative issues (e.g. the ordering of drugs/medication, management of visitors, informed consent, etc.)

The units achieved a total score of 106. Although many policies and procedures have been developed in written format, it is clear that they have not always been fully implemented and known by the staff. The policies required relating to admission and transfer criteria, ordering of stock and medicine and other general management-related activities, are mainly partially compliant (N=36). Many clinical policies and procedures are also lacking, e.g. policies on obtaining blood and other laboratory specimens, tracheotomies, high frequency or critical interactions such as resuscitation (N=18). These deficiencies not only impact on patient care but also on legality, which could result in litigation cases.

e) Facilities and equipment

The facilities and equipment is another crucial aspect in critical service delivery. Standard: There are adequate facilities and equipment to ensure safe and legal practice within the critical care services. Compliance with this standard is measured by means of 26 criteria focusing on the following:

- physical layout and design of the unit, nursing station, office space, sleeping quarters for doctor, quiet areas/tea room for staff, kitchen, cleaning room, counselling facilities and waiting room for family members/visitors and isolation facilities;
- safe storage of equipment and consumables;
- separate refrigerator for storage of blood and medicine;
- lighting, emergency lighting, safety precautions, electronic devices;
- maintenance and safe use of all biomedical devices and equipment;
- life support/emergency equipment, oxygen, medicine supplies;
- maintenance and replacement programmes/contracts;
- appropriate education of staff to use equipment.

The highest score of 117 was obtained in this standard. The general quality of the facilities and equipment in the critical care units is extremely high. The deficiencies mainly focus on supplementary structural aspects such as lack of counselling facilities (N=24). It is very distressing though that many units (N=18) cannot supply evidence of a reliable maintenance and replacement programme for the medical equipment, but rely on reactive crisis man-

agement in this regard. This could lead to serious liabilities and litigation.

f) Patient interaction

Quality interactions with patients take place, in accordance with 16 different criteria, focusing mainly on the nursing care and interaction. The criteria make provision for the allocation of nursing staff in accordance with the specified ratios, the rights of patients with special reference to patient privacy, dignity, cultural differences, communication problems, and counselling needs. Multi-disciplinary consultation between care givers, compliance with clinical guidelines/protocols, emergency procedures/intervention and evidence-based practice within the professional-ethical framework of the professionals, are considered as attributes of quality care in these units. Specified legal requirements need to be adhered to with specific reference to record keeping, transfer of patients from the unit and emergency interventions.

An average score of 108 was achieved in this area. The main deficiencies relate to the absence of clinical protocols/guidelines for critical care interactions (N=16). It appears as if the professional staff are of the opinion that written guidelines for interaction are not necessary due to the level of education. The fact that so many nurses working in the units are not registered or qualified as intensive care nursing specialists, necessitates the availability of these protocols to ensure safe and quality service delivery. Due to the nature of private practice by the medical practitioners, there could also be many different ways of treatment and care by the individual practitioners which also necessitates written protocols to avoid confusion and conflict in the unit.

g) Quality improvement

A quality improvement programme is a formalised comprehensive programme focusing on the monitoring and evaluation of those interactions that impact on critical care services, based on written standards, with evidence of remedial action taking place to address deficiencies. A formalised quality improvement programme is maintained in accordance with 15 criteria. These criteria focus on the full quality cycle (formulation of standards, monitoring/evaluation and remedial action) to be developed and implemented in the critical care service in a participatory and multi-disciplinary or collective manner.

This requires the following:

- a written Quality Improvement Programme (QIP) for the critical care services at large (where there is more than one critical care unit in the hospital), within the framework of the hospitals' quality improvement programme;
- critical care service and unit-based standards are formulated, implemented, monitored and evaluated to provide collective/multi-disciplinary outcomes;
- the establishment of a formalised system (Quality Improvement Committee) with evidence of multi-disciplinary clinical audit meetings, annual quality improvement

reports submitted to the management as well as to the professional service providers at unit level (evidence of both top/down approaches);

- a formalised peer review system is in place focusing on both the clinical as well as managerial dimensions within the critical care service;
- a critical care audit system (documentation) is in place with evidence of remedial action taking place to address problems;
- a formalised system of negative incident-reporting in a multi-disciplinary manner is in place;
- the generic quality improvement standards within the hospital are also implemented in the critical care services.

The quality improvement standard obtained the lowest average score of 83 due to a lack of general insight into the principles of quality improvement in a multi-disciplinary and collective manner. The high workload in the units could attribute to this where time is a major problem. There is very little evidence of formalised quality improvement programmes focusing on both clinical and managerial outcomes. The quality of critical care services is based on "gut feeling". Most of the units (48) are partially compliant in this standard.

General deficiencies

The general deficiencies in the survey analysis impacting on the quality of critical care service management in South African hospitals, focus mainly on the following:

- lack of a comprehensive and formalised quality improvement programme developed and implemented by the multi-disciplinary team to evaluate the collective clinical and managerial outcomes in the unit;
- the philosophies and objectives are partially compliant in terms of the participative process required in the formulation and review thereof, as well as in terms of addressing the specified content;
- the principle of decentralised financial management in the critical care services have not yet realised;
- continuous staff education is not very well formalised and valid in terms of certain legal requirements;
- the principle of multi-disciplinary meetings and participative decision-making is lacking;
- selected crucial policies and procedures are lacking which could lead to legal liabilities;
- there is a lack of a formalised maintenance and replacement system for the equipment in the units.

CONCLUSIONS

The following conclusions are relevant:

- the critical care services are compliant (external surveys) with the national standards;
- there is a significant improvement between the baseline assessments and external surveys;
- the critical care services in South Africa are very well equipped, but lack (partially compliant) a formalised proactive maintenance and replacement programme for the equipment leading to possible legal problems / litigation;

- although the quality of patient interactions appear to be good, the lack of clinical guidelines could jeopardise the clinical outcomes of patient care;
- the formalisation of quality improvement programmes in the critical care services are inadequate;
- the critical care service management tends to focus on individual decision-making by service providers as opposed to the participative and multi-disciplinary approach that is required.

CONCLUDING REMARKS AND RECOMMENDATIONS

The critical care service in a hospital is a high-risk service, which requires reliable and valid systems in place to enable quality service delivery. These services should therefore comply substantially with the structure and process standards of COHSASA. Although the critical care services are overall compliant with the standards, there are many deficiencies impacting on patient care, efficiency and legality that need to be addressed. The following general recommendations are applicable:

- continuous empowerment of the staff and capacity building within the services focusing on the principles of participative and multi-disciplinary management, which includes the empowerment relating to the formalisation of a quality improvement programme in the service and units resulting in the measurement of collective outcomes;
- formulation of national clinical guidelines/protocols for the different professional care givers or service providers;
- sensitisation of staff towards various management related legal requirements (such as occupational health and safety issues, skills development, pro-active maintenance of equipment), with the development and implementation of reliable systems to avoid litigation in this regard.

I would, however, like to use this opportunity to congratulate the critical care services of South Africa with the quality of critical care service management as proven by the results.

Acknowledgement

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