Bangladesh

Since 2009, Bangladesh has been implementing a broad array of digital services to improve the accessibility and quality of its health care. The Ministry of Health and Family Welfare now runs a digital *District Health Information System* connecting all health facilities, down to sub-district level (about 800 in total). Facilities can upload data directly to the repository, allowing tables and charts of service data or population health status to be quickly created at facility, regional or national level. Comparison of data between time periods and geographic locations is possible, supporting evidence-based policy making. Expansion continues down to grassroots level, with a target to reach all rural 18 000 community clinics by end of 2013.

Bangladesh is also creating *electronic health records*, with every citizen being given a unique identifier. Data collection is already complete for rural areas (representing 70% of the country's population) and patient records should be available for use by health workers by the middle of 2013. Already, 5 000 tablet computers have been given to community staff and six hospitals have been networked so they can start using the eHealth system; the aim is to connect all health workers and hospitals by end of 2016.

New technologies are also expanding accessibility. Every district and sub-district hospital in Bangladesh now rosters a doctor to provide free medical advice to citizens over the telephone. Mobile phones are also being used to improve the quality of antenatal care. A pregnancy care advice service allows any woman to register her pregnancy by sending an SMS (text message), stating the date of her last menstrual period. On return, she receives her expected date of delivery and thereafter periodic SMS containing pregnancy care advice appropriate for each trimester.

Patients in eight district hospitals can now receive consultations with specialists in tertiary hospitals via video links, with the aim to connect all hospitals to the telemedicine network by the end of 2016. Eventually, the aim is to offer a telemedicine service to all community clinics, providing not just consultations but also health education to local community. Video monitoring and fingerprint biometric systems have also been successfully used to help improve workplace attendance of health service employees, particularly in remote health facilities.

Digitalisation is supporting accountability and a more patient-centred health service. Patients, relatives and visitors in 800 public hospitals are now given information about how to send an SMS to report unsatisfactory care. Texts arrive at a central clearing house where staff call the patient to better understand the complaint; they then talk to the appropriate local authorities to implement solutions to the problem.

Cambodia

In 2010, the Ministry of Health in Cambodia published its *Master Plan for Quality Improvement in Health*, establishing a set of minimum standards for quality health care. The plan aims to support a responsive health care system that continuously improves health services for all Cambodians, through a number of quality assurance and quality improvement tools.

First, the *Health Facility Assessment Tool* accredits hospitals and health centres as meeting a set of quality criteria. The tool was initially developed in 2007 and revised and updated in 2012, as part of the *Master Plan*. Regular facility surveys are conducted to ensure that appropriate medical supplies, basic equipment and infrastructure are in place, according to guidelines set out for a Minimum Package of Activities and/or an augmented Complementary Package of Activities. About 80 referral hospitals in the country are assessed annually through this tool; about 50% of the 1 004 health centres in the country were assessed from 2008 through 2011.

Second, the Ministry of Health is developing 163 *clinical practice guidelines* for common medical conditions. Guided by these, a *clinical pathways manual* is also underway which aims provide a template for patients and health care providers to pursue evidence-based best practice. The *pathways* are task-orientated care plans which detail essential steps in the care of patients with a specific clinical problem and set out expected outcomes, allowing modification to fit local circumstances.

Third, a *Health Management Information System Quality Score Card* has been implemented with the assistance of WHO. The *Score Card* aims to support the information infrastructure which underlies quality assurance efforts. Amongst other things, it assesses the extent and depth of data reporting, provides checks of internal data consistency (by cross-checking antenatal care with immunisation rates, for example), and compares indicator definitions and overall figures with other countries. While nearly 100% of the health facilities are reporting and show a good internal consistency, the *Score Card* has highlighted that some indicator definitions are based on 2008 data and may be outdated.

Fourth, with WHO assistance, the Ministry of Health developed and endorsed national policy, five year strategic plan, technical guideline and training manuals for Infection Prevention and Control. A cohort of trainers are providing on the job training for healthcare workers (HCW) in referral hospitals. Hand hygiene campaigns for HCW take place since 2010. An IPC assessment tool in health care facilities covering organisational structure, technical knowhow, human resources, surveillance, laboratory support, monitoring and evaluation, and public health links is developed and being used to perform baseline assessment of provincial hospitals. The assessment will be repeated next year and the MoH will provide a prize to the most improved hospital. With WHO technical support, the Ministryof Health has also set up a limited health care associated infection surveillance in one provincial hospital.

Last, a *Client Satisfaction Tool* surveying user experiences was developed and a baseline assessment conducted in 2011. The outcome of the assessment suggested many areas for improvement from waiting times, to costing of services and information provision. The survey will be repeated at regular intervals.

Further information is available from the Ministry of Health's National Strategy Plan for Infection Prevention and Control, 2011-15; Master Plan for Quality Improvement in Health, 2010; and Referral Hospital Assessment Tool, 2007. *(http://hiscambodia.org/public/fileupload/Referral_Hospital_Assessment_Tool_FINAL_ENGLISH_March_26_2007.doc; www.hciproject.org/sites/default/files/MOH_Cambodia_IPC_guidelines_for_health_facilities_2010.pdf)*.

China

In the early 2000s, China was aware of a number of shortcomings in its health care system, including difficulties in monitoring quality of care and holding health facilities accountable (given multiple, fragmented health care providers); adverse incentives to over-prescribe drugs and diagnostic tests; and a lack of standardised qualifications for health care staff. Together, these meant that health care quality and patient centredness were not always first and foremost in the delivery of health care.

In response to this, 2005 was declared a *Year of Hospital Management Reform*. Several initiatives began, each aiming to improve the quality of Chinese health care. The government issued guidelines restricting prescription of drugs to seven days (or three days, in the case of emergency care), and the number of diagnostic tests. It also introduced performance-related pay, where physician salaries became linked to the provision of high quality care, measured partly by an appropriate reduction in drugs prescription and tests, but also by patient satisfaction reports.

A major initiative was development of the *Chinese Hospital Quality Indicator System (*CHQIS), a joint undertaking by the National Institute of Hospital Administration and the Chinese Ministry of Health. This computerised data collection and analysis system looks at deaths, readmissions, adverse events, length of stay, costs and other parameters in each hospital, in an effort to support hospital management, standardise care, improve quality assurance and compare performance with international standards. In total CHQIS comprises 730 single indicators and 2 610 complex indicators.

Since 2006, CHQIS has been applied to most of the tertiary hospitals in Beijing, and many other hospitals in Shanghai and in Guangdong province. It has had a wide-ranging impact, contributing to the promotion of effective and efficient hospital management, improving the quality of hospital services and ultimately improving patient services and patient satisfaction (Ministry of Heath, China, 2011). CHQIS has also provided the platform for the development of several integrated regional health care systems. These aim to provide more coherent health care delivery through integrated diagnostic and IT systems, referral systems and electronic patient records. Not only is it hoped that an improved information flow will lead to better decision-making and resource allocation, but also that a more integrated health service will lead to a better patient experience and greater patient satisfaction.

Further information on CHQIS (in Chinese) is available from: *www.moh.gov.cn/publicfiles/business/cmsresources/mohyzs/cmsrsdocument/doc11072.doc*.

India

One of the most important health care quality initiatives recently started by the Quality Council of India is the *National Accreditation Board for Hospitals and Healthcare Providers* (NABH). The board aims to put national health care accreditation on a par with global benchmarks, focusing on patient safety alongside quality of care. The standards used are accredited by ISQua (International Society for Quality in Healthcare) and are both patient centred (covering elements such as access and continuity of care or patient rights and education), and oriented toward organisational efficiency (covering elements such as facility management and safety or information management systems). Moreover, the standards go beyond monitoring to call for corrective action and continuous improvement, embedding a culture of quality across the health care system. To date, about 150 hospitals and 45 blood banks have been accredited by NABH, both public and private. Once accredited, the NABH continues monitoring each hospital and, once a month by random draw, one accredited hospital undergoes an unscheduled inspection.

Successful reforms depend upon implementation at local level. As an example, the state of Gujarat focused initially on reproductive and child health care services, setting set up *Quality Assurance Cells* which led the training of 2 294 clinicians and public health managers, with multiple facilities and field activities (such as family planning camps) assessed. Accreditation was subsequently rolled out to all public health care facilities, including medical colleges, district hospitals, community health and primary care centres, blood banks, laboratories, psychiatric and dental hospitals. Currently 21 health facilities have been accredited, an additional 82 facilities are in the process of accreditation and accreditation of an additional 172 facilities is planned during 2012-17.

As well as implementation of the NABH accreditation programme, other health care quality initiatives in Gujurat include:

- nomination of *District Quality Assurance Officers*, to coordinate and promote continuous health care quality improvement at facility level;
- also at facility level, supporting the work of *health care quality committees*, covering topics such as quality assurance, medical audit, hospital infection control, drugs and therapeutics, grievances and ethics;
- *defining, monitoring and evaluating quality indicators*, including measures of patient and employee satisfaction;
- *study missions* to the United States to learn about application of quality management techniques in health care.

Finally, India illustrates how the policy context and measurement of health care quality in a low-income country is likely to differ from OECD countries. The *Chiranjeevi Yojana* or "plan for a long life" (for mothers and children) programme introduced to Gujurat seeks to ensure skilled attendance at delivery for poor women. The scheme was launched in 2005 in five districts facing the highest infant mortality and maternal mortality. The state pays private gynaecologists a fee to attend each delivery, with additional sums given to the patient for transportation costs and to an accompanying person for loss of wages. From January 2006 to March 2008, nearly 100 000 deliveries were performed under the scheme. Hence, although *skilled attendance at delivery* may not be a useful measure of health care quality in high income countries, it remains a deeply relevant indicator in other settings.

Japan

Quality indicators have been discussed in Japan since the 1990s, but use has so far been limited. In 2010, however, the Ministry of Health, Labour and Welfare (MHLW) provided funds for the measurement and publication of *quality indicators* (QI) in hospitals, one of the first concrete examples of the utilisation of such measures at national level. Six hospital associations participated in the first three years, facilitating QI measurements and comparisons amongst multiple hospitals, which led doctors and health care professionals to become more receptive toward QIs. The quality measures employed in these projects have been selected based on research evidence, and have much in common with those currently used in other OECD countries. Many of these indicators measure the processes of health care, such as the use of aspirin in acute myocardial infarction, perioperative prophylactic antibiotics, and early initiation of rehabilitation after stroke. The risk-stratified incidence of falls and decubitus ulcers were also adopted, particularly for nursing care and long-term care. The standardisation of measures and data sets, as well as their usability for patients and consumers, are themes to be resolved in near future.

Electronic patient records (EPR) are expected to be the primary data source for quality measure projects. In 2003, the Japanese government began hospital prospective payments based on the case-mix classification system known as Diagnosis Procedure Combination, a system which now covers approximately 1 500 hospitals. Hospitals have to prepare a standardised data set comprising key clinical data and detailed process data. In 1995, a QI project involving several voluntary hospitals in Japan was started by constructing a common data set, and quality and performance indicators were compared. This project has continued to expand to over 300 participant hospitals, and produces out-put over a wide range of indicators that include risk-adjusted outcome measurements.

Another move towards standardised QI measurement is the use of the *National Database of Health Insurance Claims*. This health insurance claims database contains the detailed process items at the regional and national levels, and one may expect considerable advances in measuring QIs. A good example of the application of this data to QI measurements already exists at a prefectural level: the analysis of claims data showed substantial inter-institutional variations in the quality indicator of inhaled steroid use for asthma patients, as well as its significant association with subspecialty expertise. This kind of claims data has also allowed the investigation of population-based regional variation in QIs.

The development of data infrastructure has been an important driver to push forward the measurement and use of QIs. Other triggers for the diffusion of QI have been government financial support and an increasingly receptive climate of medical/health care professionals toward QIs. Subsequent steps will have to include the standardisation of measurements, the expansion of the scope and depth of mea-surements, their effective utilisation for improvements, and the improvement of their usability for patients and consumers.

Republic of Korea

Several quality assurance initiatives are underway in Korea, some for many years. The Korean Hospital Association started a *Hospital Standardisation Programme* in 1981, limited initially to teaching hospitals and without public reporting of any findings. Later developments included expansion of the programme to include all hospitals with more than 300 beds and public reporting. More recently, in response to some concerns such as the administrative burden on hospitals and unintended effects including informal hospital ranking by mass media and gaming behaviour, the programme was replaced in 2011 by a voluntary programme run by the Korea Institute for Healthcare Accreditation, a public-private partnership. This new accreditation programme uses novel survey methods such as tracer methodology to follow the patient pathway, and places greater emphasis on patient safety. There has been some concern however that patient reported measures have become less important in the new accreditation framework.

Korea also has a long history of implementing clinical practice guidelines, supported by both governmental and professional initiatives. The Ministry of Health funds various clinical research centres to develop guidelines, co-ordinated by the National Strategic Co-ordinating Center for Clinical Research, which acts as a guideline clearinghouse, identifying and disseminating guidelines of appropriate quality. At the same time, the Korean Academy of Medical Sciences (KAMS), to which most academic medical societies belong, supports methodological research for guideline development. KAMS runs an independent information centre for guidelines, the *Korean Medical Guideline Information Center*. It is recognised that while guideline development activities are increasing, efforts to disseminate, implement, and evaluate guidelines need on-going strengthening.

Korea's *Health Insurance Review and Assessment Service* (HIRA) is a widely known agency which supports health care organisations to assess and improve their quality of care. HIRA's quality assessment programme began in 2001, gradually expanding the number of health care areas it

assesses over time. Now, 18 areas are assessed by HIRA and public reporting has led to a number of demonstrable health care quality improvements, including reduction in antibiotic prescribing for the common cold, reductions in the numbers of injected medications prescribed and in duplicate prescriptions.

Initially HIRA's indicator programme just reported performance of health care organisations. Since 2007, hospital income has been linked to performance figures through the *Value Incentive Programme* (HIRA-VIP). HIRA-VIP started as a demonstration project covering acute myocardial infarction and caesarean sections among tertiary hospitals in 2007 and was associated with improvement in quality of care for both. As a result, HIRA is planning to expand the VIP programme, both in terms of the numbers of organisations participating and topics covered.

Korea also participates in the OECD *Health Care Quality Indicators* (HCQI) project, enabling Korea to see how it is performing compared to other OECD countries in certain internationally validated measures of health care quality. While some areas (*e.g.* cervical and colorectal cancer five-year relative survival rate, in-hospital case-fatality rate within 30 days after admission for stroke) show relatively good performance, other areas (*e.g.* breast cancer five-year relative survival rate, in-hospital case-fatality rate within 30 days after admission for AMI, uncontrolled diabetes hospital admission rate, asthma hospital admission rate) do not. Media reporting of these results has triggered widespread public interest in health care quality issues, and in 2011 the Korean government requested the OECD to undertake a comprehensive review of the quality of care in its health system, the findings of which were published recently (OECD, 2012d).

Malaysia

Malaysia has a long history of working towards quality improvement in health care. In the 1970s and 1980s, many initiatives were undertaken independently in health clinics, hospitals and institutions, including prenatal and maternal mortality reviews, morbidity and mortality reviews, quality control circles, medical audits, nursing audits and investigation of complaints. Registration and licensing of health care professionals were also in place many years ago, as well as self-regulation and publication codes of conduct and ethics by professional societies.

In 1985, a formal *National Quality Assurance Programme* (QAP) was launched by the Ministry of Health (MOH) to coordinate quality initiatives, comprising two main approaches: a *National Indicators Approach* (NIA) and a more local *Hospital/District Approach* (HSA/DSA). As of 2012, the NIA programme monitors a total of 140 national indicators across ten different health service programmes, thus embracing a broad definition of service quality. Complementing this, the HSA/DSA approach allows health care professionals to monitor, identify and address additional quality issues at local level.

A *Strategic Plan for Quality in Health* was implemented in 1997, providing broad direction as well as specifying particular strategies that could embed a quality culture within the health care system. For example, 30 disease registries are now established (jointly supported by MOH, universities and professional organisations); 59 evidence-based *Clinical Practice Guidelines* (supported by MOH and the Academy of Medicine Malaysia) have been disseminated; a voluntary *hospital accreditation programme*, led by the Malaysian Society for Quality in Health, was established in 1997; and a *National Quality Assurance Convention* every other year provides a platform for health care quality teams to share experiences and recognise success. On-going training programmes, at every level of the health care system also support sustenance of the health care quality agenda.

Malaysia also places strong emphasis on patient safety issues. The *Patient Safety Council of Malaysia* was established in January 2003 to develop national patient safety strategy and action plans, including implementation of the WHO-World Alliance for Patient Safety Programme 1st, 2nd and 3rd Global Safety Challenges ("Clean Care Is Safer Care", focussing on hand hygiene; "Safe Surgery Saves Lives Through Better Communication", focussing on communication within surgical teams and with the patient; and "Tackling Antimicrobial Resistance", implementing multiple strategies to combat antimicrobial resistance). *Care Bundles* have been introduced to prevent ventilator associated pneumonia and central venous line blood stream infection among patients in intensive care units.

Recently, an *incident reporting and learning system* was introduced in MOH facilities, requiring hospitals, health and dental clinics to report incidents related to patient safety and to conduct investigations to find the root cause of the problem. Safe and quality use of medicines, through *medication error prevention* and *adverse drug reaction monitoring* are ongoing activities; of note, a *Drug Information Service* and *National Pharmacy Call Centre* have been established for patients.

Patient safety is a national priority area for research. A significant proportion of the research budget is allocated to establish the extent of patient safety issues and to identify effective solutions to areas related to medical safety, medication safety, blood transfusion safety, vaccine safety, laboratory safety, safety culture among health care professionals, communication, dental safety, patient falls and patients unvoiced needs.

Overall, Malaysia is fortunate that efforts to promote and sustain health care quality are a government-wide priority. Reflecting this are an array of national awards which recognise the achievements of players in improving health care quality, such as the Prime Minister Quality Awards, Public Services Awards and the MOH Quality/Innovation Awards.

Further information is available from the following publications and websites: *Quality Manual: National Indicator Approach* (NIA), Ministry of Health, Malaysia, 1999; *The Strategic Plan for Quality in Health*. Ministry of Health, Malaysia, 1998; Patient Safety Council of Malaysia Official Portal; *http://patientsafety.moh.gov.my/*; Malaysian Society for Quality in Health Official Portal; *www.msqh.com.my*; Academy of Medicine of Malaysia Official Portal; *www.acadmed.org.my/*.

The Philippines

To support monitoring performance and conditions of hospitals, PhilHealth, the Government Health Insurance Agency, introduced the *Benchbook* in 2002. Its aim was to provide accreditation to hospitals meeting a set of quality criteria and incentivise quality improvement across the hospital sector. The Benchbook went beyond the typical accreditation procedures looking comprehensively at the following dimensions: 1) Patient rights and organisational ethics; 2) Patient care standards; 3) Leadership and management; 4) Human resource management; 5) Information management; 6) Safe practice and management; and 7) Improving performance.

While both the standards and indicators were developed through a consultative process involving hospitals and professional organisations, a significant proportion of hospitals were initially resistant to the new standards, which they perceived as too stringent and not applicable to the local setting. Furthermore additional costs involved in the preparation for and the actual implementation of the *Benchbook* were often cited by the hospital managers as a hindrance to their compliance. Nevertheless, with time the majority of clinicians and hospital managers came to see the *Benchbook* as an opportunity to assess and document their performance, identify areas in need of improvement and achieve the highest standards of quality. Many champions among individual hospitals, their organisations as well as professional organisations became more vocal on quality issues and the *Benchbook* featured in many clinical and health care management conferences.

The *Benchbook* identifies various accreditation categories, including *Centre of Excellence, Centre of Quality,* and *Centre of Safety*, depending on the survey scores of the hospitals. Hospitals not meeting minimum scores are either given provisional accreditation or have their application denied. Special consideration is given to providers in deprived and hard-to-reach areas to ensure that already limited services provided are not be further disrupted; typically, they are given provisional accreditation for a maximum of one year during which they are required to submit a plan of action to correct their deficiencies.

During the initial accreditation survey in 2010, two-thirds of the 1,609 hospitals that applied for accreditation qualified only for a six-month provisional accreditation while 7% were denied accreditation. Only 19% of the hospitals were given regular accreditation as Centres of Safety (12%), Centres of Quality (5%) and Centres of Excellence (2%). Six months later, by December 2010, the trend between provisionally accredited hospitals and those awarded as Centres of Safety had been reversed, with the latter increasing to 71% and the former dropping to 13%. This improvement in hospital performance was sustained during the second year of implementation in 2011, with regular accreditation awards increasing to 97% from 81% in the previous year. Further information is available from the Philippine Health Insurance Corporation Accreditation Database at *www.philhealth.gov.ph*.

Singapore

As part of Singapore's quality journey, the Ministry of Health (MOH) introduced *National Standards for Healthcare* (NSHC) in 2008 as a guiding framework to embed a culture of continuous quality improvement throughout the health care system. The primary goal of the NSHC is to ensure that patients receive health care that is appropriate to their needs, based on current evidence and clinical knowledge across the continuum of care (*i.e.* from prevention to acute to step down/long-term care). The NHSC also helps facilitate prioritisation of improvement efforts and alignment of planning initiatives.

The standards under the NSHC cover seven domains – accessible care, appropriate care, patient-centred care, safe care, a learning institution, public health and finally, the physical environment and amenities. The NSHC is not meant to be exhaustive but focuses on key areas of concern. There is a robust performance measurement framework to assess how far institutions have measured up against the NHSC. This comprises a national-level *National Health System Scorecard*, which is then cascaded down to setting- and provider/specialty-level scorecards.

The scorecards are closely based on indicators developed under the *OECD Health Care Quality Indicator* (HCQI) project. This allows MOH to benchmark Singapore's performance with OECD countries on a "like-for-like" basis, enabling identification of areas of strong performance, and of areas where improvements are needed to close quality gaps. For example, the OECD HCQI's indicators on hospitalisations for ambulatory care sensitive conditions enabled evaluation of the national *Chronic Disease Management Programme* (covering conditions such as diabetes, hypertension and asthma).

The NSHC was implemented using a two-pronged approach: first, a governance-based approach, with both the NSHC and relevant scorecards incorporated into the governance agreements between MOH and the public sector health care providers. These agreements lay out MOH's expectations of the public health care institution and their operating parameters, and the standards of service and key deliverables required of the institutions. The institutions' scorecards thus provide the basis for an annual discussion between the Ministry and the institutions on the individual institutions' performance. The cross-comparison of performance across the institutions also provides the impetus for continued improvement.

Second, a collaborative approach, with MOH funding setup of *Healthcare Performance Offices* (HPO) in public sector institutions. The HPOs help align and co-ordinate the respective institutions' efforts in meeting NHSC requirements. Each HPO is chaired by a senior clinical leader who reports directly to the institution Chief Executive Officer (CEO)/Chairman Medical Board (CMB).

The NSHC framework complements MOH's existing efforts to encourage *innovation* amongst health care providers and professionals. Various funds are available to facili-

tate testing of novel ideas or programmes that have the potential to significantly improve the quality of care. These include funding from the National Medical Research Council, the Health Services Development Fund, the Health Services Research Fund and the Health Quality Improvement Fund. The MOH also promotes the cross-fertilisation of ideas through seminars and public events and invests in the continuing training and development of health care professionals in the goals and methods of quality improvement.

As a small city state, Singapore has been able to undertake its quality improvement on a national scale. However, the lessons learnt are no less relevant to local health care systems in larger countries, where state, provincial or local responsibility for health care is the norm.

Sri Lanka

The *Continuous Quality Improvement Programme* initiated in 2000 at the Castle Street Hospital for Women (CSHW), is a recent success in Sri Lanka's expanding health care quality agenda. CSHW, a government teaching hospital with 204 beds in Colombo, introduced a system based on *kaizen,* a Japanese model for continuous quality improvement, popularly known as 5S. At CSHW, this took a comprehensive approach to quality, safety and productivity, comprising several elements such as:

- *Total Clean*, which put new emphasis on cleanliness of the clinical environment by using cleaning check lists and schedules;
- introduction of printed forms and charts, including *pre- and post-operative checklists* and *discharge checklists*. As well as standardising care, these forms actually lightened the administrative workload of clinical staff (who earlier had to prepare such forms by hand);
- regular *customer satisfaction surveys,* encouragement of customer suggestions, through suggestions boxes, and questionnaires with self-addressed envelopes sent to randomly selected patients. Findings were regularly fed-back to hospital managers;
- encouragement of *staff work-improvement suggestions*, collected via Work Improvement teams and Kaizen Suggestion Schemes, also fed-back to managers;
- greater emphasis on *information analysis*, including *development and monitoring of performance indicators*. In particular, each ward began maintaining their statistics, such as customer satisfaction and adverse events. These were aggregated to hospital level and some publicly displayed on notice boards.

The hospital notes that implementation of the 5S programme was associated with a reduction in maternal mortality rate, infection rates, neonatal death rate and still birth rate, as well as increases in the patient satisfaction rates. The hospital has won many awards including Taiki Akimotto Award, National Productivity Award and National Quality Award.

The hospital also became recognised as the focal point for National Quality Assurance Programme of the Ministry of Health, whose Quality Secretariat are seeking to expand the programme to other hospitals. To date, diverse hospitals such as the Ampara District General Hospital, Mahiyanganaya Base Hospital (remotely located and serving a predominantly indigenous population), Gampaha District General Hospital, Balapitiya Base Hospital and Kurunegala Teaching Hospital have implemented 5S and won many awards in Productivity and Quality. In particular, the Mahiyangana hospital has received visiting study tours interested in learning from its quality improvement initiatives, including delegations from eight African countries, funded by the Japan International Cooperation Agency (JICA).

Recently, the Ministry of Health has also disseminated 93 *clinical guidelines* to all secondary and tertiary care hospitals with the objective of reducing variation in clinical practice.