

*Work has continued in implementing a national quality improvement strategy despite withdrawal of governmental support, perhaps reflecting the fact that the strategy had encouraged grassroots activities all along.*

# Quality Improvement Initiatives in Brazil: A Progress Report

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**T**his article updates progress in quality improvement (QI) in health care in Brazil since 1998. It follows the reports by Malik in 1997<sup>1</sup> and de Noronha and Pereira in 1998<sup>2</sup> and traces the history of the national QI program. Given the absence of a comprehensive survey of the program's progress, a few examples of significant initiatives are provided to illustrate what has been accomplished.

## The Rise and Fall of the National QI Program

As reported by Noronha and Pereira,<sup>2</sup> it was not until 1994 that Brazil's Ministry of Health (MOH) introduced a formal program designed to promote a culture of QI among health care providers, payers, and users of health services. The National Commission for Quality in Health Care was established, playing an important role in setting guidelines for the program and in disseminating them among key parties in the health care sector.

A specific unit was designated to coordinate the quality initiatives—to act externally as the National Commission's executive secretariat and internally as a mobilizing agent for the MOH.

The QI program was dissociated from the traditional auditing activities of the MOH and state and municipal departments of health. Its basic function was to create a supporting environment for QI actions anywhere in the country, without adopting a fixed method or set of mandatory standards.

The QI program entailed a five-track QI strategy:

- Moving toward using outcomes indicators,
- Establishing a national accreditation program,
- Emphasizing QI tools,
- Establishing basic clinical guidelines, and
- Enhancing community control.<sup>2</sup>

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## Article-at-a-Glance

**Background:** In 1994 Brazil's Ministry of Health (MOH) introduced a program to provide a supporting environment for quality improvement (QI) initiatives. Yet the five-track QI strategy, which included moving toward outcome indicators, establishing a national accreditation program, emphasizing QI tools, establishing basic clinical guidelines, and enhancing community control, was discontinued in 1998, following the dismissal of the minister of health. The QI program retained only its accreditation activities.

**Accreditation:** The Consortium for Brazilian Accreditation (CBA) began in 1994 to establish an accreditation process compatible with international initiatives. Both the MOH and the CBA have developed standards for hospitals. The *Brazilian Manual for the Accreditation of Hospitals* is available on the Internet. The CBA has developed a set of standards by adapting the 1996 hospital standards from the

Joint Commission on Accreditation of Healthcare Organizations. To developing CBA's role as an accrediting organization, administrative and technical supporting structures were created within the Cesgranrio Foundation and a Joint Commission for Accreditation was established.

**Quality management initiatives:** A growing number of hospitals, clinical laboratories, blood banks, health plans, and other health care services and organizations are seeking International Organization for Standardization (Geneva) certification. Consulting firms in the field of quality management continue to increase the number of their clients in the health sector.

**Concluding remarks:** Current QI initiatives represent only a minority of health care services and organizations in the country. Strong efforts need to be made by both the private and public sectors to expand such initiatives throughout Brazil.

At the time the QI program was established, the MOH was implementing a US \$650 million project, REFORSUS,\* financed by loans from the World Bank and the Interamerican Bank for Development to improve health care facilities throughout the country. REFORSUS was allocated seed money for the five-track QI strategy.

However, the QI strategy was discontinued as a formal government program in 1998, following the dismissal of the minister of health, Dr Adib Jatene, in November 1997.†

The new minister of health concentrated his energies on an internal reorganization of the ministry bureaucracy, with many programs and activities discontinued. The National Commission for Quality in Health Care never met again. After serving for 14 months, this minister too was asked to resign. The new Minister, Jose Serra, who took office in March 1998, emphasized the government's regulatory functions.

The QI program retained its activities only in the field of accreditation. Yet various initiatives con-

tinued. A few health care organizations worked toward integrating QI approaches despite the lack of government support, perhaps reflecting the fact that the QI strategy had encouraged grassroots activities all along. Also, the MOH officials who had worked in the quality unit tried to find ways to reintroduce the program. They achieved some success, for example, through the creation of the Department of Health Policy Evaluation during the restructuring of the MOH. In addition, the return of some quality champions at some professional organizations, such as the Brazilian College of Surgeons, contributed to these nongovernment groups' efforts. Finally, a new MOH representative in the state of Rio de Janeiro, nominated by the minister in May 1999, has been supportive of quality initiatives.‡

‡ The economic recession that Brazil has experienced following the financial turmoil in late 1998 and early 1999 is affecting quality of care in two opposing ways. On one hand, health care organizations are postponing nonessential investment and reducing spending, which may eventually compromise quality of care. On the other hand, public and private providers may use quality techniques to control expenditures and improve performance. In addition, macroeconomic policies are encouraging foreign investors to invest new money or buy assets in Brazil, which may attract international health care purchasers to an area marked by underfinancing of public health services. Finally, political instability can adversely affect new policies as the ones that just began to be developed in the field of quality of health care. However, the potential of the large Brazilian economy suggests that the current crisis will be resolved in the not too distant future.

\* REFORSUS, REFORção à reorganização do Sistema Unico de Saude (Strengthening Reorganization of the Unified Health System).

† Dr Jatene had upheld the need for a permanent and stable source of revenues for the public health sector in Brazil. He proposed, and the Congress approved, a tax on financial transactions to be specially allocated to the MOH. However, the country's main financial authorities protested the tax, and Dr Jatene was forced to resign. (The tax was discontinued in late 1998 but reintroduced in June 1999.)

Given the short period since the previous article,<sup>2</sup> only those QI activities previously reported that have shown significant developments are presented in this article, along with new initiatives.

**Quality Initiatives Accreditation**

The greatest progress observed since 1998 in the quality of health services has occurred in the accreditation track. As previously reported,<sup>2</sup> accreditation initiatives in Brazil commenced in the early 1990s, and by 1997 there were four accreditation organizations at the state level (two in São Paulo and one each in Parana and Rio Grande do Sul). As mentioned earlier, administrative changes in the MOH in 1997 led to greater emphasis on accreditation. The MOH's effort was directed toward creating a national accreditation agency and an accreditation manual. In addition, the Consortium for Brazilian Accreditation (CBA), which represents the National Academy of Medicine, the Brazilian College of Surgeons, the State University of Rio de Janeiro, and the Cesgranrio Foundation began in 1994 to establish an accreditation process compatible with international initiatives.

The debate on standards and accreditation processes in Brazil has addressed a series of questions, as listed in Table 7 in the previous article.<sup>2</sup> The following discussion is focused on the questions where answers are apparent.

**Standards Development**

Both the MOH and CBA have developed standards for hospitals. CBA is now preparing technical groups to start developing standards for health care networks and home care.

According to Rooney and van Ostenberg,<sup>3</sup> standards for quality evaluation can be classified as

**Table 1. Chapter Titles from the Brazilian Ministry of Health's *Brazilian Manual for the Accreditation of Hospitals***

|                                    |   |
|------------------------------------|---|
| Inpatient Unit                     | Medical Staff and Continuum of Care                         |
| Transfers and Referrals            | Ambulatory Care   |
| Emergency Care                     | Operating Room  |
| Anesthesiology                     | Obstetrical Care  |
| Neonatal Care                      | Intensive Care Unit   |
| Clinical Laboratory                | Imaging Diagnosis   |
| Graphical Methods                  | Pathology   |
| Blood Transfusion Services         | Rehabilitation Services                                     |
| Nuclear Medicine                   | Radiotherapy  |
| Pharmacy                           | Food and Nutritional Services                               |
| Nursing Services                   | Medical Record  |
| Infection Control                  | Social Services   |
| Library and Scientific Information | Statistics  |
| Linen and Laundry Services         | Materials Processing and Sterilization                      |
| Building Documentation             | Physical-Functional Structure                               |
| Electrical Systems                 | General Maintenance, Waste Management, and Water Potability |
| Hospital Direction                 | Management  |
| Hospital Hygiene                   | Occupational Health and Safety                              |
| Quality Assurance                  |   |

- structure standards, which address a system's inputs, such as human resources, buildings, and availability of materials;
- process standards, which address the activities or interventions carried out within the organization in the care of patients or in the management of the organization or its staff; and
- outcome standards, which address the effect of the interventions used on a specific health problem and whether the expected purpose of the activity was achieved.

**MOH initiative.** The manual of standards developed by Novaes and Paganini under the auspices of the Pan American Health Organization was adapted by a group of consultants. The *Brazilian Manual for the Accreditation of Hospitals* is currently available on the Internet.<sup>4</sup> The standards are structure oriented, as can be seen from the chapter titles (Table 1, above). For each standard three levels of compliance were established, mostly related to technological complexity. The manual defines the compliance levels as follows:

- Level 1: Credentialing of staff, achievement of fundamental safety requirements for patient care, and basic structure (resources) to ensure adequate care.
- Level 2: Presence of norms, routines, and documented and applied procedures; evidences of

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introduction and utilization of an improvement logic in the actions of care and in the medico-sanitary procedures; and evidences of client/patient-centered action.

■ **Level 3:** Evidence of various cycles of improvement in all areas, reaching the organization in a global and systemic way; use of a consistent institutional information system based on rates and indicators.

The actual process of evaluating compliance with the MOH manual has not yet been defined. General scoring rules were set for each standard, but details on the measurable characteristics and specific scoring and aggregation rules await development.

In December 1998 various health care provider organizations endorsed a protocol promoted by the MOH for the creation of a national accreditation agency, Organismo Nacional de Acreditação (ONA). The agency is expected to set national rules to accredit organizations that comply with the *Brazilian Manual for the Accreditation of Hospitals*. It is expected that the government will provide support to the process, while delegating actual accreditation decisions to the new agency.

### **CBA of health systems and services initiative.**

CBA has been developing its set of standards by adapting the *1996 Comprehensive Accreditation Manual for Hospitals (CAMH)* from the Joint Commission on Accreditation of Healthcare Organizations' (Oakbrook Terrace, Ill).<sup>5</sup> This adaptation has been coordinated with the efforts of Joint Commission International Accreditation, through its International Accreditation Principles and Standards Development Task Force, to develop universally applicable standards.\* CBA decided to also develop its accreditation process on the basis of the Joint Commission's methodology. A working party for standard development, which was supervised by one of the authors [J.N.] and coordinated by another [C.T.], included three other health care specialists. The group, supported with technical advice from Joint Commission Resources experts, attended a study tour in the United States and a Joint Commission survey.

**Standards manual.** The CBA manual, which was limited to 100 to 150 standards, was developed according to the stages presented in Table 2 (p 569). To produce a manual with fewer standards, the strate-

gy adopted was to rearrange the functions within the *1996 CAMH*. For example, the functions governance and management were merged into the Leadership chapter. Medical staff and nursing became areas of performance of the chapter Management of Human Resources (Table 3, p 569).

*1996 CAMH* standards were adapted on the basis of applicability, value in improving the quality of patient care, cultural acceptance, relevance to the Brazilian health care system, compatibility with Brazilian laws and regulations, and adaptability to both public and private hospitals. The first set included about 150 standards, to which international standards and standards especially appropriate for Brazil were added. For example, a new area of performance in the Care of Patients chapter related to inpatient obstetric and perinatal care. After field testing and expert review, new, largely structure-oriented standards were added to cover special care units and image, pathology, and clinical laboratory services.

Standards and intents were not translated directly but were interpreted to best reflect the current terminology and practice in Brazil. For instance, in the Leadership chapter the term *leaders*, which does not have a clear meaning in Brazil regarding health care organizations, was avoided. Instead, the manual refers to *directors* for the "Strategic Atex" (director, hospital manager, medical staff, nursing), and *service managers* for those in charge of any other administrative structure or care unit in the hospital. Major changes were also made to the Leadership chapter as a whole, to adapt the standards to the administrative structure of Brazilian hospitals. (Major changes were also introduced to the Environment of Care and Improving Organization Performance chapters.)

Examples of implementation, which are intended to provide strategies, activities, or processes that the hospital can use to achieve compliance with the standards, are now being developed on the basis of the experience of Brazilian hospitals. Scoring and aggregation rules will follow closely the approach adopted in the *Joint Commission International Accreditation Standards*.

**Accreditation process.** To developing CBA's role as an accrediting organization, administrative and technical supporting structures were created within the Cesgranrio Foundation and a Joint Commission for Accreditation was established. Since June 1988

\* Recently published, *The Joint Commission International Accreditation Standards* provides the basis for Joint Commission International Accreditation's work throughout the world. (See Interview, p 598.)

CBA standards for hospitals have been used to evaluate seven hospitals run by the MOH, as well as two teaching hospitals, in the city of Rio de Janeiro. (The hospitals are not yet ready for a full cycle of accreditation with all the standards.) The hospital managers are using a subset of 26 standards to guide priority setting and choices of improvement initiatives; for example,

- **DE2.2** All patients and, when appropriate, their families, are informed and educated about their disease and the diagnostic and therapeutic procedures required for their care; and
- **MD2.** The hospital selects processes and activities for performance improvement according to its priorities.

Preliminary experience suggests that the standards and evaluation processes are proving to be good QI tools, even in situations where the general conditions of delivery of care are poor. The project is engaging health professions leadership in the hospitals, who are usually absent from other managerial restructuring processes.

**Other accreditation initiatives.** The state of Rio de Janeiro Blood Center, HEMORIO, whose quality management activities have been reported earlier,<sup>2</sup> is now preparing for accreditation; it began a self-evaluation for standards compliance in April 1999. The Hospital Albert Einstein, in the state of São Paulo, is expected to be the first South American hospital to achieve such status, by late 1999 or early 2000.

**Conclusions.** It is too early to determine the impact of accreditation initiatives on the hospitals in Brazil. Of the country's 7,000 or so hospitals, about 300 to 400 are expected to seek some sort of accreditation in the next four to five years. The increasing competition among health care providers, insurers' and payers' need to differentiate among providers, and consumers' increasing interest in having hospitals evaluated by credible organizations should all contribute to greater accreditation activity.

**Table 2. Developmental Stages in the Creation of the CBA's Hospital Accreditation Manual\***

| Stage   | Time Frame       |
|---|------------------|
| Selection and redesign of JCAHO functions       | Jun/Jul 1998     |
| Expert review (CBA's board and JCIA experts)    | Jul 1998         |
| Selection of standards                          | Jul 1998         |
| Development of CBA standards                    | Jul/Aug 1998     |
| Expert review (CBA board and JCIA experts)      | Aug 1998         |
| Field testing                                   | Sep 1998         |
| Standards refinement and development of intents | Sep/Oct 1998     |
| Expert review                                   | Nov 1998         |
| Refinement of standards and intents             | Jan/Feb 1999     |
| Development of examples of evidence             | Feb/Mar/Apr 1999 |
| Flowcharts design                               | May 1999         |
| Expert panels                                   | Jun 1999         |
| Final review                                    | Jul/Sep 1999     |

\* CBA, Consortium for Brazilian Accreditation; JCAHO, Joint Commission on Accreditation of Healthcare Organizations; JCIA, Joint Commission International Accreditation.

**Use of Outcome Indicators**

**Community health agents and family health program.** A project developed under the auspices of the federal government for the reduction of infant mortality in a number of Brazilian municipalities included a set of integrated health interventions.<sup>2</sup> One of these interventions, initiated by the MOH in 1991, involved the use of community health agents to develop health surveillance and health services. The community health workers program initially targeted the poorest communities, mainly in nine northeastern states.

Community health workers were identified, recruited, and trained in health promotion, education, and monitoring. In 1994 the community health

**Table 3. Chapters of the Consortium for the Brazilian Accreditation Manual of Hospitals**

|  |
|--|
| <b>Patient-Focused Functions</b>                   |
| Patient Rights, Organization Ethics, and Education |
| Assessment of Patients                             |
| Care of Patients                                   |
| Access and Continuum of Care                       |
| <b>Organization-Focused Functions</b>              |
| Improving Organization Performance                 |
| Leadership   |
| Management of the Environment of Care              |
| Management of Human Resources                      |
| Management of Information                          |
| Surveillance, Prevention, and Control of Infection |

workers program became part of the family health program, when family health teams began to be formed. The basic health family team consists of one primary care physician or family doctor, one nurse, one nurse auxiliary, and four to six community health workers. Each community health worker was expected to cover from 450 to 750 individuals; each family health team was expected to cover from 2,500 to 4,500.

In 1994 there were 29,098 health workers in 879 municipalities and 328 family teams in 55 municipalities. In 1998 the number jumped to 88,961 workers in 1,117 municipalities and 3,147 teams in 1,117 municipalities, so that about 38 million persons were in some way covered. (The total population of Brazil is approximately 160 million.)

The community health workers conduct an initial survey of the families to be covered to collect demographic, social, and economic data, together with an evaluation of family members' health conditions. They then develop a plan of action for improvement of health and, on the basis of a map showing hazardous areas (for example, open-air sewage disposal, uncollected garbage, poor potable water supply), an environmental improvement plan. Every family in the community is expected to be visited at least once a month for a health evaluation, with the priority on children and pregnant women. Groups in the community are categorized (such as pregnant women, parents, older people, persons with a particular health problem such as hypertension) for specific interventions. The health workers also intervene in improving social conditions, such as in identifying out-of-school children and encouraging parents to send them to school and in assisting famine-exposed groups.

In addition to these activities, workers in the family health teams also provide direct preventive and general medical care. Family physicians are specifically trained for coordinating the health workers' initiatives.

Results for the community health agents and family health program have been documented since its inception (Table 4, p 571). The deep community engagement in health improvement efforts, associated with a family approach in health care delivery, with very specific professional accountability and intersector action has promoted many improvements in the health conditions of the covered localities. The municipalities have all experienced improvements in

the infant mortality rates from 1994 through 1997. For example, in the state of Bahia, the rate decreased from 92 to 49 deaths per 1,000 live births.

**Other recent initiatives.** Three local initiatives have recently been reported in a survey of significant initiatives in the field of perinatal care. In the city of Rio de Janeiro a program "Right to Be Born Right" was introduced in 1995 by the city's Department of Health to regularly monitor maternal and perinatal deaths in municipal maternal care units. Adopted measures such as medical records standardization, careful and regular review of mother and child deaths, and rooming in have resulted in an annual decrease of about 10% in perinatal deaths among health care units with high baseline rates.

In the harbor city of Santos, in the state of São Paulo, a High-Risk Newborn Surveillance System was established in 1990 by the Municipal Secretariat of Health to provide special care for high-risk pregnancies. The program first entailed identification and control of infants at risk, profile evaluation of newborn babies, and encouragement of breastfeeding. In 1994 a multidisciplinary approach involving biopsychosocial monitoring was introduced; Pregnant Women's Houses were established. Significant improvements in perinatal mortality have been reported, particularly after 1995.

Since 1997 the northeastern state of Pernambuco has implemented a training program for physicians, nurses, and midwives that includes techniques of monitoring outcomes to evaluate their action on mother and child care.<sup>6</sup>

### **Quality Management Initiatives in the Health Services**

The Brazilian Program for Quality and Productivity was created by the Brazilian government in the early 1990s to provide incentives for quality in the industrial sector. In 1996 the program broadened its scope to include services and areas such as "Quality of Life," which could include health care. In 1998 the program was strategically realigned to lead to

- the establishment of national mobilizing goals;
- the implementation of an integrated management model; and
- the development of a joint executive to coordinate between government and society.

**Table 4. Indicators and Tracer Conditions Used to Monitor the Community Health Agents and Family Health Program**

**Outcome Indicators**

- Proportion of low-birthweight live-born babies
- Infant mortality rates
- Maternal mortality rates
- Proportion of individuals with arterial hypertension in the assisted population
- Proportion of diabetics in the assisted population
- Proportion of individuals with tuberculosis in the assisted population
- Proportion of patients with leprosy
- Proportion of individuals with cerebrovascular disorders

**Tracers**

- Cerebrovascular disorders
- Acute myocardial infarction
- Cervical intraepithelial neoplasia grade III
- Eclampsia
- Hemolytic anemia of the newborn
- Pneumonia hospital admissions in children younger than 5 years
- Dehydration hospital admissions in children younger than 5 years
- Leprosy with disabilities grade II and III
- Rheumatic valvular heart disease among persons aged 5 to 14 years
- Pregnancies in women younger than 20 years
- Hip fractures in persons younger than 50 years
- Hospital admissions for ethanol abuse
- Psychiatric admissions
- Hospital admissions due to complications of diabetes
- Diarrhea deaths in infants
- Acute respiratory deaths in infants
- Deaths among women aged 10 to 49 years
- Adolescent (10 to 19 years) deaths due to trauma

According to one manager, the program was intended to identify and mobilize the greatest number of persons and segments of society regarding the quality and productivity cause.<sup>7(pp 30-32)</sup> Thirteen goals were initially set under the general motto "Quality: Show, Require, Live. You Make Brazil." In the health field one goal has been introduced—to ensure and

control quality in the process of blood transfusion and preparation of blood products by 2003, according to a set of indicators established in 1998 by the MOH.

A growing number of hospitals, clinical laboratories, blood banks, health plans, and other health care services and organizations are seeking International Organization for Standardization (ISO; Geneva) certification. By 1998 more than 30 had been totally or partially certified.

Consulting firms in the field of quality management continue to increase the number of their clients in the health sector. For example, the cases of two hospitals, Hospital de Clínicas de Porto Alegre and Santa Casa de Porto Alegre, in the state of Rio Grande do Sul were recently described.<sup>8,9</sup>

Hospitals are increasingly competing for quality prizes, and some of them have succeeded. In 1991 a nongovernment organization, Fundação Nacional para o Prêmio da Qualidade (National Foundation for Quality Prize), was founded for the promotion of quality; it adapted its methodology from the Malcolm Baldrige National Quality Award. Every year the foundation awards a trophy to organizations and companies that compete for the prize according to an established process.<sup>10</sup> Some states, such as Rio Grande do Sul and Rio de Janeiro, have developed similar initiatives.

Another prize, instituted by the Ministry of Administration in 1997 for quality in public administration, was awarded the following year to a federal teaching hospital in the state of Rio Grande do Sul.

**Academic Research**

Little research is conducted in Brazil in the field of quality of health care, as indicated by a review of the literature published in the past three years which was performed using the MEDLINE and LILACS Latin American and Caribbean Health Sciences Literature (administered by the Pan American Health Organization Latin American Center of Health Sciences Information: BIREME<sup>11</sup>). The key words used for the search included *quality, outcomes, hospital mortality, and quality improvement*. The papers were grouped in ten categories.

**General review of quality initiatives.** The two aforementioned articles, by Malik<sup>1</sup> and de Noronha

and Pereira,<sup>2</sup> present a review of recent quality initiatives in Brazil.

**Outcomes of services delivered.** The MOH payment claims database was used to evaluate outcomes measured as avoidable deaths in hospitals of the state of Rio de Janeiro from 1992 to 1995 by de Gouvea et al.<sup>12</sup> The quality of care was analyzed through the sentinel event approach. For the state of Rio de Janeiro as a whole, the occurrence of avoidable deaths during hospitalization shows a weak overall decreasing tendency in the private subsector but is stable in public and teaching hospitals. The frequency of maternal deaths has remained high and stable.

Leite et al<sup>13</sup> studied preventable perinatal deaths in 17 maternity units and 2 pediatric hospitals in the city of Fortaleza, state of Ceará, in Northeastern Brazil. Rattner<sup>14</sup> developed a set of indicators to evaluate the quality of perinatal care in 12 hospitals. After examining 4,558 records of infants assisted in 1995, she designed a system to classify the hospitals according to different levels of quality of care. Hartz et al<sup>15</sup> developed a "preventable death index" for infant mortality to evaluate local health systems in two municipalities in a northeastern Brazilian state.

De Noronha et al<sup>16</sup> studied hospital admissions for asthma and proposed a set of indicators to evaluate the care delivered. Silva et al<sup>17</sup> proposed a methodology for evaluating quality of care, with hospital admissions for myocardial infarction as an example. Studies have been reported on quality assurance in cytopathology<sup>18</sup> and on quality of mental care.<sup>19</sup>

**User and Satisfaction Surveys.** A variety of studies have used patient surveys to evaluate quality of care.<sup>20-25</sup>

**Studies on hospital morbidity and mortality.** One article dealt with aspects of hospital case mix,<sup>26</sup> and another with the impact of postdischarge surveillance on the detection of nosocomial surgical site infection after cesarean-section and vaginal delivery.<sup>27</sup>

**Impact of new technology adoption.** Miura et al<sup>28</sup> discussed the limits of new technology adoption for reducing neonatal mortality in a teaching hospital. Bastos et al<sup>29</sup> showed how technology availability, staffing, and diagnostic diversity in an intensive care unit was associated with the ability to decrease hospital mortality.

**Medical audits.** One article was identified that discussed audit of a mother and child program in a municipality in a southern state of Brazil.<sup>30</sup>

**Management of information.** Five articles dealt with different aspects of management of information and quality of care. One studied two notification systems to estimate the maternal death underreporting for 1988 in Rio de Janeiro and discussed measures to address the problem.<sup>31</sup>

Martins and Travassos<sup>32</sup> found that the use of secondary diagnosis information from medical records changed patients' diagnosis-related group classification and Charlson comorbidity index scores. Krauss Silva<sup>33</sup> described an information system to be used for investigation of the effectiveness of perinatal care. Livianu et al<sup>34</sup> examined a system to evaluate the performance of intensive care units.

Finally, Starling et al<sup>35</sup> reported that use of the National Nosocomial Infection Surveillance system improved hospital mortality and cost containment in five hospitals.

## Conclusion

Progress continues in the activities represented in the five-track approach to QI which was launched in 1994. However, current QI initiatives still represent only a minority of health care services and organizations in the country. Strong efforts need to be made to expand such initiatives throughout Brazil, and both the private and public sectors, particularly the MOH, must play a significant role in this process. An increasingly competitive environment among health care providers should also play an important part in the development of quality initiatives, particularly in the field of accreditation. Physicians are increasingly aware of the value of accreditation in helping health care organizations achieve higher standards of care. It seems now that accreditation is arriving in Brazil on a no-return journey. Interest in ISO certification, competition for quality prizes, and QI activities should also grow among health care providers.

Few developments have occurred in two of the five tracks—consumers' protection and development of clinical guidelines. Perhaps the growth of managed care plans in the private sector and family health programs in the public sector will help lead to developmental work in guidelines. Academic research should also increase in response to growing pressure from consumers for better quality of care. The need to demonstrate that resources are



being adequately deployed and care appropriately monitored should facilitate the use of outcomes measures.

An intensive educational process appropriate to a continent-sized country can lead patients, providers, and payers to a greater commitment to QI in health care. **J**

References

1. Malik AM: Quality improvement issues in Brazil. *Jt Comm J Qual Improv* 23:55-59, 1997.
2. Noronha JC, Pereira TR: Health care reform and quality initiatives in Brazil. *Jt Comm J Qual Improv* 24:251-263, 1998.
3. Rooney AL, van Ostenberg PR: *Licensure, Accreditation, and Certification: Approaches to Health Services Quality*. Washington, DC: USAID Quality Assurance Project, 1999.
4. Brazil Ministério da Saúde: [Hospital Accreditation]. <http://www.saude.gov.br/sps/sps/acredit.htm#acred3>, 1999.
5. Joint Commission on Accreditation of Healthcare Organizations: *1996 Comprehensive Accreditation Manual for Hospitals*. Oakbrook Terrace, IL, 1995.
6. Escola Nacional de Saúde Pública Tema RADIS: [Perinatal and Neonatal Care in Brazil: A Challenge for Health Services]. Rio de Janeiro: Fiocruz, 1998.
7. Lobo ACO: PBQP: *A Social Movement for Quality and Productivity. Brazillian Quality Index*. São Paulo: Quinta Essência, 1998.
8. Xavier ACR, Batista FF: [A New Paradigm in Management or Just One More Quality Program? The Experience of the Hospital das Clínicas de Porto Alegre (HCPA)]. Brasília: IPEA, 1997. (IPEA. Texto para discussão [discussion papers], no. 487.)
9. Xavier ACR, et al: [Implanting Quality Management Programs in Hospitals: The Experience of the Porto Alegre House of Mercy, RS]. Brasília: IPEA, 1997. (IPEA. Texto para discussão [discussion papers], no. 486.)
10. Rutta AM: *National Quality Prize: Encouragement for a Better Country. Brazilian Quality Index*. São Paulo: Quinta Essência, 1998.
11. PAHO (Pan American Health Organization) Latin American Center of Health Sciences Information: BIREME. <http://www.bireme.br>, 1999.
12. de Gouvea CS, Travassos C, Fernandes C: [Service delivery and quality of hospital care in the State of Rio de Janeiro, Brazil—1992 to 1995]. *Rev Saude Publica* 31:601-617, 1997.
13. Leite JM, et al: [Perinatal deaths in the city of Fortaleza: How many deaths could be prevented?]. *J Pediatr* 3:388-394, 1997.
14. Rattner D: [Epidemiological standards for assessing quality: a proposal]. *Cad saúde pública* 12(suppl 2):21-32, 1996.
15. Hartz ZMA, et al: ["Avoidable" infant mortality in two cities of Northeastern Brazil: Quality indicator of the local health system]. *Rev saúde pública* 30:310-318, 1996.
16. Noronha MF, Machado CV, Lima LD: [Indicators and standards proposal for the evaluation of the quality of hospital care: The case for bronchial asthma]. *Cad saúde pública* 12(suppl 2):43-58, 1996.
17. Silva LK, Escosteguy CC, Machado CV: [Methodology for estimating standards for quality in health care: The case of acute myocardial infarction]. *Cad saúde pública* 12(suppl 2):71-83, 1996.
18. Di Loreto C, et al: [Quality assurance in cytopathology: Aspects of the cytohistological correlation]. *Rev Assoc Med Bras* 43:195-198, 1997.
19. Carvalho AL, Amarante P: [Qualitative evaluation in new mental health services: A search for new parameters]. *Saude em Debate* 52:74-82, 1996.
20. Kotaka F, Pacheco ML, Higaki Y: [Evaluation by users of hospitals which participate in the hospital quality program of the State of São Paulo, Brazil]. *Rev Saude Publica* 31:171-177, 1997.
21. Kloetzel K, et al: [Quality control in primary health care. I. Consumer satisfaction]. *Cad Saude Publica* 14:623-628, 1998.
22. Rocha JPS, et al: [Nursing, a quality service? The patient answers]. *Rev Bras Enfermagem* 50:153-162, 1997.
23. Franco SC, Campos GWS: [Quality of care assessment in a university hospital pediatric clinic]. *Cad Saude Publica* 14:61-67, 1998.
24. Mandu EN, da Silva GB: [Public health service: What women say]. *Rev Esc Enfem USP* 32:218-230, 1998.
25. Bosi MLM, Affonso KC: [Citizens' participation and health: Beneficiaries of the public health services network have their say]. *Cad Saude Publica* 14:355-365, 1998.
26. Mathias TA, Soboil ML: [Hospital morbidity in a county of Southern Brazil in 1992]. *Rev Saude Publica* 30:224-232, 1996.
27. Couto RC, et al: Post-discharge surveillance and infection rates in obstetric patients. *Int J Gynaecol Obstet* 61:227-231, 1998.
28. Miura E, Failace LH, Fiori H: [Perinatal and neonatal mortality at the Clinicas de Porto Alegre Hospital, Brazil]. *Rev Assoc Med Bras* 43:35-39, 1997.
29. Bastos PG, et al: The importance of technology for achieving superior outcomes from intensive care. Brazil APACHE III Study Group. *Intensive Care Med* 22:664-669, 1996.
30. Costa JSD, et al: [Medical auditing: procedures assessment in the women's integral health care program in the Vila Municipal Health Clinic, Pelotas, Rio Grande do Sul, Brazil]. *Cad Saude Publica* 30:43-49, 1998.
31. Silva LK, Russomano FB: [Underreporting of maternal mortality in Rio de Janeiro]. *Bol Oficina Sanit Panam* 120(1):36-43, 1996.
32. Martins M, Travassos C: Assessing the availability of casemix information in hospital database systems in Rio de Janeiro, Brazil. *Int J Qual Health Care* 10:125-133, 1998.
33. Kraus Silva L: Perinatal information system: A methodological proposal. *Int J Qual Health Care* 8:279-289, 1996.
34. Livianu J, et al: Comparative study of intensive care unit (ICU) performance. *Medinfo* 8:1052, 1995.
35. Starling CE, Couto BR, Pinheiro SM: Applying the Centers for Disease Control and Prevention and National Nosocomial Surveillance system methods in Brazilian hospitals. *Am J Infect Control* 25:303-311, 1997.