MEETING POINT

# 2007 Trade/Study Mission of the Academy for International Health Studies

## NEW ZEALAND

The Academy for International Health Studies visited New Zealand between April 13–20, 2007. The 2007 Trade/Study Mission met in Auckland, the international gateway to this country of two islands and only 4.1 million people. Approximately 50 senior executives of U.S. hospitals, health plans, insurers, and other health care organizations sought to better understand the challenges and triumphs of New Zealand's health care system. The delegation included physicians, pharmacists, management executives, and health policy specialists.

### BALANCING HIGH QUALITY WITH LOW COST

New Zealand's egalitarian health care system is one in transition, having undergone numerous political reorganizations over the past 15 years. However, the latest incarnation is the most successful. Although only a few years old, it offers many attractive features and may be unique in its approach to achieving the principal goals of universal health care at an exceptionally low cost per capita compared with other industrialized nations. Characterized by central regulation and funded mostly through general taxation, New Zealand has striven for an interesting balance between private and public health care delivery.

Health care expenditures for the Kiwi population account for 8% of the gross domestic product (compared with 16% in the U.S.). Seventeen billion dollars are spent annually on health care, with the greatest share spent by Auckland health authorities. The economic productivity for New Zealanders is measured at approximately U.S. $24,000 per capita (compared with $41,650 in the U.S. and $32,860 in Australia).

Approximately 75% of the health system is funded through general taxation and delivered publicly. Of the 25% that is privately paid, 5% is covered through private insurance. The remainder is accounted for through patient copays and other consumer purchases.

Thirty-five percent of all residents hold private health insurance policies. The private insurance system functions primarily to help shorten the waiting times for elective services. This public–private system of care relies heavily on strict budgeting to restrain rising health care costs, often causing labor strife (with health worker strikes being commonplace), long queues for specialty services and elective hospital procedures, and limited access to new technology. Waiting times for care are based on an explicit system of prioritization, in which points are assigned based on severity and disability. For example, in terms of orthopedic procedures, "it comes down to level of movement and disability," said Steven McKernan, Director General of the Ministry of Health. "If you cannot bend down to reach the morning paper, you might get 'a certain number of points' on the prioritization assessment." Those who do not have the requisite number of points to be treated immediately can visit at a later time for another assessment, he stated.

New Zealand has been highly successful in limiting pharmaceutical costs: According to the Ministry of Health, the drug expenditure is only U.S. $174 per person per year, at the low end of the industrialized nation spectrum. Mr. McKernan noted that this system of health care is highly cost effective. "Only 1.9% of money spent in the system is spent on administration," he

said. "Our target is to reduce that to 1.5% within four years."

The overall result, however, is good health indicators, including an enviable life expectancy (78.96 yr) (Figure 1) and access to comprehensive care for the general population (with lower health indicator figures for indigenous Maori populations, which account for 15% of the population; in comparison, 66% are of European descent, 9% are of Asian derivation, and 7% are Pacific Islander).

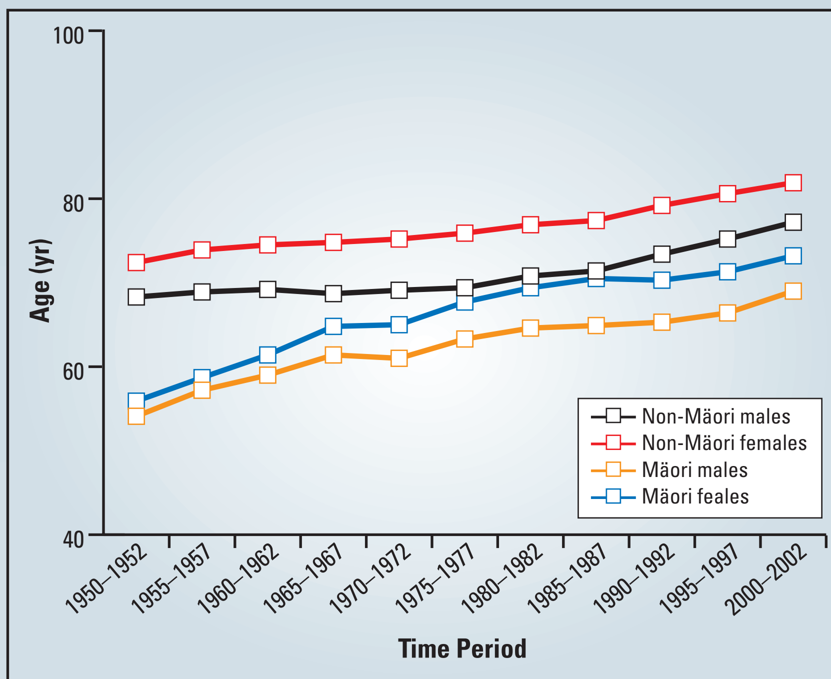


**Figure 1.** Figures for life expectancy (overlain with that for Maori population). Adapted from World Factbook 2007. Central Intelligence Agency (cia.gov/library/publications/the-world-factbook/geos/nz.html), June 11, 2007.

## HEALTH SYSTEM STRUCTURE AND GOVERNANCE

The Ministry of Health is responsible for funding and regulating 21 District Health Boards (DHBs). Funding for each DHB is adjusted for age and size, and many health policy experts in New Zealand question the need for 21 DHBs in a country of this size. Three DHBs operate in Auckland alone, the largest city, with 1.4 million inhabitants. Dr. David Sage, Chief Medical Officer, Auckland City Hospital, believes that although the system is highly efficient from a financial point of view, "up to one-third of the country's administrative costs could be saved, according to an independent consulting audit, because of the excess in DHBs."

The DHBs' leadership are partly elected, partly appointed. They play a key role in overseeing the primary, secondary, and tertiary health services in their region, including all public hospitals and facilities. The DHBs must serve as the impetus for health improvement in their regions, specifically being charged with developing a 10-year vision and five-year strategies for attaining improvement (approvable by the Ministry of Health). Further, 81 primary health organizations (PHOs), which are structured as charitable trusts, operate under the DHBs.

The PHOs use funds allocated by the DHBs. Approximately 80% of all general practitioners in New Zealand enlist with a PHO through capitated contracts. According to Ron Hooten, CEO of ProCare Health, Ltd., Auckland, "PHOs are the glue between the people, communities, and the health services."

The PHOs do not assume financial risk, but they do promote clinical and quality activities within their populations. Paul Roseman, Research and Development Manager for ProCare, noted his PHO has more than 40 clinical programs in place (e.g., medication reviews, beta-blocker use in patients suffering heart attack) that affect about 9% of all general practitioner (GP) office visits. "We're closing the inequality gaps in cardiovascular disease through the use of risk assessments and improved screenings," he said. Additionally, he pointed to decreasing hospital stays related to chronic obstructive pulmonary disease as proof of his PHO's success in focusing on primary care.

**Emphasis on General Practice.** Primary care is the principal focus of the New Zealand system, and the country boasts a virtually complete outpatient electronic medical record (EMR) system operating in nearly all PCP offices. This is connected to other levels of care to varying degrees (discussed later), but it is extremely advanced in terms of industrialized nations.

In a country that emphasizes general practice to this extent, physician workforce issues remain problematic. According to David Caygill, former Minister of Health, generalists in New Zealand earn approximately U.S. $70,000 to $95,000. "Specialists earn twice this amount. About 10% of all medical school graduates go on to general practice," he said, and "the rest go to specialties."

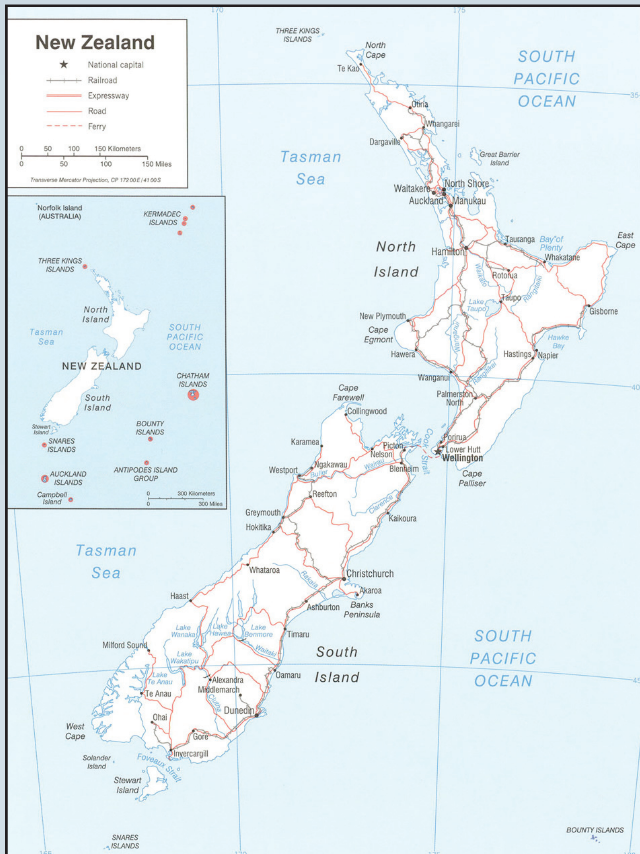


**Figure 2.** New Zealand, one of the top 5 dairy exporters in the world, is made up of two islands. Reprinted from the Library of the University of Texas.

As in a capitated American managed care system, each PCP in New Zealand has an enrolled panel of patients. Patients can expect to visit the general practitioner's office either on the same day or the next day after making the appointment.

The patient pays a copay amount that is set by the physician's office, not the government. "The government is trying to increase subsidies to the physicians' office, which should lower the copays and ensure access," commented Mr. Caygill. He also noted the system relies heavily on "practice nurses," who often are found in a 1:1 ratio with physicians in general practices, "which is one way the system maintains access to primary care." The number of nurse practitioners is slowly expanding: Only 20 are now active in New Zealand, but only one has prescribing authority.

Even in the public hospital setting, this system maximizes use of nonphysician expertise. "We use obstetricians only for complex deliveries," explained David Sage, MD. "Nearly all of the routine deliveries in the Auckland public hospital are managed by midwives."

## THE PUBLIC–PRIVATE INSURANCE RELATIONSHIP

As indicated, the public health care system underwrites approximately 75% of the country's expenditures, offering broad coverage funded through general tax revenues. The principal purpose of private health coverage in New Zealand is to supplement the public system, which is operating at full capacity but still generates considerable queues for elective surgical procedures and diagnostic testing. "The public system alone cannot meet the increased demand for health services," stated Dr. Ian McPherson, CEO of Southern Cross, the major private insurer and private hospital owner in New Zealand.

Private health insurance in New Zealand is unlike that offered in the United States. Policies do not generally cover medications or services that are not covered by the public system as "supplemental" insurance. Rather, the policies enable one to obtain elective surgical procedures in both for-profit and nonprofit private facilities, in effect, allowing the patient to "jump the queue."

On physical inspection, quality of care delivered in facilities is not lacking. The trade/study delegation toured both public and private facilities and found state-of-the-art care provided in clean environments with highly dedicated staff. The level of technological instrumentation varies in the hospitals; for instance, positron emission tomography scanners were not present in any facility, but access to needed equipment can be arranged. Dr. McPherson said, "The public system does a very good job in acute care and tertiary care settings, but it is having problems in the primary care setting, because of lack of capacity." He pointed to an 18- to 24-month waiting time for hip replacements in the public system and up to 12 weeks to receive radiotherapy for cancer treatment. "The private sector performs more than double the amount of elective procedures than the public sector," he said. The cost for private insurance for surgery-only coverage for a 45-year-old person is NZ $1,500 per year, according to Dr. McPherson.

MercyAscot (Auckland) operates two private hospitals in the country, which perform 25,000 procedures per year and 600 orthopedic procedures per month, said its CEO, Andrew Wong, MD. "Staffing is our biggest barrier to increasing capacity," he said. Dr. Wong pointed out that the average nurse earns only NZ $35,000."

The private hospitals do not employ physicians; "rather, they are our primary customer," he remarked.

His facility shares physicians and surgeons with the public system, and tries to entice these providers with high-quality facilities and access to better equipment than is usually seen in a public hospital.

The payment in New Zealand for total hip replacement is U.S. $11,400 to $13,300; for coronary artery bypass grafting, the price range is $21,000 to $24,500, and these are global prices. Medical tourism has not yet been fully investigated by New Zealand's private hospitals, but at these low prices and apparent high quality, it presents a distinct area of opportunity for more cost-effective coverage.

One challenge facing the system is that communication between the public and private sectors needs to be improved. Dr. Wong explained that the DHBs only purchase overflow private hospital capacity once the DHB leadership realizes they will not meet their targeted number of procedures (performed within 6 mo of need). "This happens every year, well after the beginning of the financial year," noted Dr. Wong. "Then, the DHBs want everything done quicker and cheaper. If we could fit the DHB-contracted work into our own quieter periods, we could do many more procedures for them." Necessarily, "the line between the public and private sector is becoming very blurry," concluded Dr. McPherson, "and we're seeing growing public participation in private insurance coverage."

The country's public hospitals are funded through the local DHBs in New Zealand's latest health care governance structure. Yet the public hospital system has been an unchanging center of care for residents. Hospital leadership is faced with strict funding limits from the DHBs, according to executives of the largest public hospital, Auckland City Hospital, which was visited by the study tour delegation.

As a teaching and tertiary care hospital, the hospital is paid more than the average public facility, according to David Sage, MD, Chief Medical Officer; its subsidy is adjusted for risk. Sixty physicians from the medical school are employed by Auckland City Hospital.

Two-thirds of the money provided to the hospital is spent on hospital care, and one-third is used for primary care activities. The latter includes an urgent care unit, "where we bring general practitioners to the front door of the hospital, enabling them to avoid emergency room utilization," said Dr. Sage. This is one reason why patients are rarely, if ever, lined up in wheelchairs or beds outside of the emergency department. Automobile accidents are the primary reason for emergency department admission.

This relatively new hospital, which was the result of a merger of four hospitals, was at full census during the delegation's visit; little activity was visible, however, and the noise level was very low. The hospital passageways were wide and clean, and patients being transferred to another department were rarely seen, partly because the hospital was built around the concept that departments that commonly use each other's services should be adjacent, minimizing the need for patient transfers from one side of the facility (or from one floor) to another. The architectural layout of the hospital, it was estimated, saved a number of orderly positions.

## ACCIDENT AND DISABILITY INSURANCE COVERAGE

New Zealand has a clever form of universal health insurance coverage, which contributes greatly to the uniqueness of the health system overall. Since 1974, its Accident Compensation Corporation (ACC) has provided comprehensive care in any case of accident-related injury, using preemptive no-fault regulation to prohibit tort liability for virtually any cause.

In essence, the ACC is a parallel and complementary insurance coverage. It performs its own provider profiling to detect practice outliers. Revenues are generated through personal and employment-based levies, with industries being charged based on risk.

The country's much-revered ACC coverage aims to return the injured patient to optimal productivity as soon as possible, incorporating a holistic approach to care (i.e., including medical, rehabilitation, and complementary [acupuncture]), with the seductive feature that it also enables patients to jump the queues for care. For ACC, elective surgery after an injury must be completed within a maximum of six months (to fulfill the goal of returning the person to optimal productivity as quickly as possible), and this is usually attained more rapidly when performed in private hospitals. However, ACC also utilizes the public sector hospitals when possible.

Coverage includes the full spectrum of injury: auto accidents, injuries incurred at home, and those resulting from medical error or malpractice. The ACC handles 1.7 million new claims per year. The ACC system serves multiple functions: (1) injury prevention, (2) treatment of injury, (3) rehabilitation postinjury, and (4) compensation payment (if one was working at the time of injury, ACC pays 80% of the patient's salary, up to NZ $100,000; major permanent impairment can be compensated in a lump sum payout of no more than

> **Health care coverage and portability in this centralized system is universal.**

NZ $100,000). The coverage includes all New Zealand residents and all visitors. Furthermore, in the case of sensitive injuries, such as rape, physical and mental health treatment are covered (mental stress is not ordinarily covered for other injuries). If the injury resulted in a fatality, support for the family, including grief counseling, is part of the benefit. This comprehensive coverage relieves a large burden from the mainstream medical administration. According to Dr. Jan White, ACC's CEO, payments from ACC account for 15% of private hospital funding.

The coverage provided by ACC obviates the need for personal injury protection in automobile coverage that is seen in the United States, thus helping to lower auto insurance costs. However, as noted earlier, auto accidents are the primary driver of public hospital emergency department utilization in the country.

Since the no-fault system eliminates the possibility of lawsuits, the likelihood for the overuse of medical testing and procedures (i.e., "defensive medicine") is also low, as is the likelihood for possible application in the United States. Dr. White stated,"if medical negligence or incompetence is thought to be involved in the injury, the case is forwarded to medical/professional bodies, which may review and take action." This system was implemented only three years ago; until then, the medical professional had to submit a claim (against himself or herself) that medical negligence had occurred before coverage ensued. This was changed to omit the need for admitting negligence, but Dr. White pointed out, "the treating team must still submit the claim." In addition, patients can direct a claim for ACC coverage to the Health and Disability Commission, which will investigate poor practice by professionals and hospitals. Although it does not have the power to prosecute, it can send its findings to the professional governing societies for action. Patients who believe they do deserve additional compensation, for instance, can appeal their case against the ACC to District Court.

Dr. White explained that as a result of the comprehensiveness of coverage and relative speed with which services are rendered through ACC, the definition of what constitutes an injury has progressively broadened. For instance, how is shoulder pain characterized, particularly in older persons? Is it the result of a rotator cuff problem noticed when taking out the trash, or a symptom of underlying, degenerative osteoarthritis?

## THE ELECTRONIC MEDICAL RECORD: PRIMARY CARE AND BEYOND

One of the New Zealand health system's strongest features is its EMR, which is operative in virtually all of the PCP practices throughout the country. Subsidized heavily by the central government, the annual cost to providers of implementing and operating the system is low and enables true electronic medical recordkeeping in primary care. This is achieved primarily through the use of one of two systems, which limits interoperability issues.

The EMR is not geared toward patient access and "ownership." The ownership of the record may not be an important issue in New Zealand, because health care coverage and portability in this centralized system is universal and less of a concern.

How did New Zealand's health system reach this point in information technology? Collaboration is key, according to Andrea Pettett, CEO of the New Zealand Health Information Technology (HIT) Cluster, Wellington. This collaboration was based on the belief that the country can be a "unique supplier of health care information technology, avoiding the need for overseas suppliers, and gaining the opportunity to export the technology to other countries." This is the HIT Cluster's goal.

Formed in 2002 "to provide vision, governance, and project directorship," Ms. Pettett commented that the Cluster "also serves as a funding conduit, to help manage conflict and share intellectual property."

Importantly, this is neither a governmental entity nor a national strategy. "This is the result of a grass roots effort," said Roger Bowie, Chairman, Enigma, which manufactures one of the decision support software systems used in New Zealand.

MedTech Global, Auckland, has the lion's marketshare of the EMR systems used by PCPs. Not only has New Zealand advanced greatly in its use of IT at the physician's office, but Australia has as well (it is estimated that 80% of Aussie primary medical practices are now using an EMR).

As recently as eight years ago, according to Ken Leech, Chief Information Officer for ProCare, Auckland, all clinical records were paper based. "The first foundation ingredient to making the EMR a reality was

the establishment of a national patient identification number, which can be shared uniformly across health care sectors," he said.

For ProCare, a PHO, the conversation with the generalists was relatively easy: Trust already had been established between the two groups, and that comes from emphasizing quality over cost. The PHO's quality orientation was the second ingredient to successfully implementing an EMR. Physicians believed that the EMR system would help them provide a desired level of service and quality. The use of its decision support system component actually helped emphasize that particular aspect.

The third ingredient was its relatively low cost: The implementation cost for a PCP practice with five licenses was a one-time fee of NZ $2,000 plus an additional charge of $250 per month for each screen (amounting to $5,000–$6,000/yr, after discounts). Before implementation of the EMR, automated billing was the only truly electronic transaction taking place in GP offices, said Ms. Pettett. Automated billing systems promised rapid payment, and this quickened the pace of acceptance in the 1990s. The same tactic was applied to incentivizing EMR implementation.

Whereas information technology is pervasive in GP offices throughout the country, it is not as common in other parts of the health system. For instance, no electronic link exists between physician offices and the community pharmacies. Hospital discharge data are not routinely provided electronically to the primary care physician. Today, 3 million discharge summaries are sent to the PCP's office by mail. "We are moving to electronic discharge summaries, clinical discipline by clinical discipline," explained Ms. Pettett. In the emergency department, only lab data is accessible electronically for each patient. The New Zealand health system has just begun to consider how to use the centrally stored medical data for quality measurement.

The lessons for the U.S. health system are clear: Interoperability issues can be overcome, although it is taking the United States many years to resolve this problem and answer the question of whether the patient should own the record.

## TECHNOLOGY ASSESSMENT AND PHARMACEUTICAL COVERAGE

Decisions as to what the government will cover are classified as nonpharmaceutical and pharmaceutical. The nonpharmaceutical technology assessment is conducted by a committee organized only two years ago that operates under the Ministry of Health.

The pharmacoeconomic decision makers in New Zealand work with a specific budget and try to restrain pharmaceutical costs by use of only the most cost-effective medications. The agency tasked with this responsibility is the Pharmaceutical Management Agency of NZ (PHARMAC). Their decisions on medications are directly dependent on the financing level set by the Ministry of Health, which is exceedingly low, relative to other Organization of Economic Cooperation and Development countries. Thus, the threshold of cost effectiveness is set high to ensure pharmaceutical dollars are stretched as far as possible.

"We are moving to electronic discharge summaries, clinical discipline by clinical discipline."

Medications can only be included on the drug formulary once enough evidence is accumulated to determine that the pharmaceutical has an appropriate cost benefit (determined through cost-utility analysis) and if a sufficiently low discount/rebate can be extracted from the pharmaceutical manufacturer or distributor. This has the effect of including mostly generic medications and excluding more recently introduced technology. It also seems to restrict medical innovation in the country—clinical trial activity is almost nonexistent—and no pharmaceutical manufacturer is actively conducting research and development at this time in New Zealand.

Furthermore, PHARMAC's decision making is independent of the country's DHBs and PHOs; therefore, disease management or practice guideline efforts are not necessarily coordinated with pharmaceutical access. For example, the first basal insulin, insulin glargine, was approved only in June 2006. Worldwide professional practice guidelines have emphasized the need for a bolus–basal insulin approach for patients with type 2 diabetes who require insulin to control their glycemic levels. Trastuzumab is not currently on formulary, but it is accepted globally by oncologists as first-line treatment in estrogen-receptor–positive breast cancer (although PHARMAC is now reassessing its cost effectiveness based on study results showing positive results with a shorter course of therapy). This is not to say that the DHBs are unhappy with PHARMAC's performance—in fact, the success of PHARMAC in restraining costs in the pharmacy benefit has allowed the

DHBs to spend money elsewhere, according to Julian Inch, CEO of the professional association of New Zealand's DHBs.

Pressures from this disconnect and from the introduction of effective advances (not simply incremental improvements) in medical care may compel the Ministry of Health to allocate more dollars in the future to PHARMAC's budget to incorporate these changes. However, PHARMAC maintains a strictly value-based purchasing view. Acting CEO Matthew Brougham stated even if more money were allocated, "I'm not sure it wouldn't just be wasted on medications we don't really need," based on the excellent population health outcomes produced by the health care system.

As this country is able to "fly under the radar screen of most pharmaceutical manufacturers," it can afford to rely on pharmaceutical innovation and development costs subsidized by such countries as the United States.

Unlike in other countries, one cannot purchase private insurance that will cover pharmaceuticals not presently on PHARMAC's formulary, or additional health care services (although there seems to be little demand for the latter, based on the services offered by the public and ACC systems).

## A PAY-FOR-PERFORMANCE MINDSET

The primary care EMR can provide a treasure trove of clinical information that can be used for quality measurement; however, New Zealand health policy makers have yet to effectively mine this bounty. This does not mean the New Zealand system does not employ quality improvement initiatives. On the contrary, Mr. Inch stated a "PHO Performance Management Program" has been in planning and implementation stages almost as long as the PHOs have existed. The five principles of the program are indicated in the Table. It is a voluntary program, and a number of prerequisites are necessary before participating. A number of clinical areas are measured, including:

- Childhood vaccinations completed by the second birthday
- Influenza immunization in the elderly
- Breast cancer screen in the past two years
- Cervical cancer screen in the past three years
- Average daily dose of inhaled corticosteroids
- Ratio of metformin-to-sulfonylurea prescriptions
- Financial indicators (e.g., prescription expenditures compared with a benchmark)

Mr. Inch commented, "The PHOs are sent all of the information they need in reports. The Minister of Health and the public receive information on PHO and DHB performance, along with national health quality information."

The bonuses for those participating in the program and scoring well are sent to the PHOs. This amounts to NZ $6 per enrolled member every six months. "Bonuses may amount to a 3% to 5% increase in [PCP] income," said Mr. Inch.

The objective of the program is not to penalize physicians who already provide cost-effective services, in terms of financial indicators, "but bonuses go only to those who reduce the amount of money spent," Mr. Inch stated. The program was formally introduced in 2005, with a number of transitional measures, some of which were measured and reported for information use only at first. Today, the program is about to expand into new measures and new reporting requirements. These requirements, commented Mr. Inch, will continue to focus on reducing inequalities in health care among the country's minority population and actually enhance its emphasis on improving chronic disease management.

### TABLE: CHARACTERISTICS OF THE PHO PERFORMANCE-MANAGEMENT PROGRAM

**Equity:** With an emphasis on equity of health outcome and reducing health disparities
**Quality:** Through continuous quality improvement based on evidence and best practice with a patient focus
**Affordability:** With clear targeting decisions and affordable to key stakeholders in the sector
**Sustainable:** With a policy direction and framework that is enduring over time
**Collaborative:** With involvement and coordination of the sector, shared objectives and common goals

PHO = Primary health organization.

## CONCLUSION

The New Zealand health system does an outstanding job of providing publicly based care for its 4.1 million citizens. Its principal challenges include reducing gaps in health outcomes for its minority populations, maintaining adequate staffing for low-revenue health care workers, and restraining costs in an environment where medical technology is a powerful driver. However, the Kiwi culture is uniquely suited to the health system: Expectations and sensitivities are in line with this scheme of government-provided care.

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