Nurses bring primary health care to industrial workers

Progress in bringing health care to the workplace lags considerably behind progress in bringing health care to where people live. Experience in Botswana shows that the family nurse practitioner—a registered nurse midwife with one year of post-basic training—can provide useful preventive and curative services to people in their places of work.

Modern thinking in occupational health argues for a comprehensive approach to workers' health problems (1). The integration of occupational health services within community health programmes not only rationalizes the use of scarce health resources but also ensures that both industrial and domestic components of workers' health are addressed. This concept of comprehensive health care based on the strengthening of the primary health care system is fundamental to the work of the Occupational Health Unit in Botswana, established in 1982 as a collaborative effort of the Ministry of Health and the WHO Regional Office for Africa (2).

To promote workers' health one must first have an assessment of their current health status, not only for use as baseline information but also to define programme priorities and approaches. Such an assessment combines epidemiology with clinical assessment, a task traditionally performed by physicians in health facilities. This article describes the experience in Botswana with an alternative approach—the use of the family nurse practitioner for clinical assessment in the workplace.

Family nurse practitioners in Botswana

Located in southern Africa, Botswana has an acute shortage of health personnel, a problem it shares with other developing countries. Historically, nurses have been the providers of primary care. Because of the physician shortage, nurses have provided first-line treatment for the ill and injured, even in urban areas. And in the rural areas, where 80% of the population live and work, the vast majority of health workers are from the nursing cadre. Indeed, it can be said that primary health care in Botswana has largely meant nursing care. Yet these nurses were not trained to provide a broad range of curative primary care services. While they diagnosed and treated patients as well as

Dr Rojas, formerly the Head of the Occupational Health Unit, Ministry of Health, Gaborone, Botswana, is now the WHO Representative, Apartado 330 Malabo, Equatorial Guinea. Mrs Tembo is a Family Nurse Practitioner in the Occupational Health Unit. Dr Stark is a Family Nurse Practitioner Tutor with the National Health Institute, Gaborone, Botswana.
they could, they were clearly functioning at a level beyond that for which their education had prepared them. Over time it became increasingly clear that traditional nursing education was no longer adequate preparation for nursing practice as it had evolved in Botswana.

To fill this gap between training and practice, in 1980 a one-year post-basic family nurse practitioner programme was established at the Botswana National Health Institute. The objective of the programme was to prepare registered nurse midwives to competently diagnose and treat primary health care problems common in Botswana in patients of all ages (3).

Specifically, family nurse practice includes:

- health assessment;
- the ordering and interpretation of certain basic laboratory and radiological investigations;
- the diagnosis and management of common primary health care problems;
- the referral and/or joint management of complex, secondary-level health problems;
- the provision of initial care in emergency situations, including suturing simple lacerations, the application of plaster-of-Paris casts, and dental extractions;
- the joint management of chronic illness.

It also includes the provision of health education and counselling with the goal of helping patients and their families to prevent or cope with health problems.

The Occupational Health Unit participates in the training of all nurses who attend the National Health Institute, including family nurse practitioners. Drawing on six years of experience in teaching in this area, it has developed an instructional unit for occupational health, comprising both didactic teaching and field experience, through which students learn to identify the interrelationships between health and work, familiarize themselves with the main types of occupations in Botswana and with the basic concepts of health and safety related to them, and learn the nurse’s role in promoting the health of workers.

The family nurse practitioner is thus a highly skilled, multi-purpose health worker who plays a key role in the primary health team. This calls for interdependent, collegial relationships between all the members of the team so as to ensure the delivery of safe health care. Medical and nursing practitioners must understand each other’s roles, communicate effectively, and collaborate efficiently. The development of such collegial relationships was initially problematic. However, eight years’ experience has resulted in a high degree of acceptance and understanding of the family nurse practitioner on the part of Botswana’s physicians.

There are now 65 family nurse practitioners serving on the front lines of the primary health care system, in remote as well as in peri-urban health facilities, and they are in
high demand throughout the system. For this reason, national manpower development plans call for the training of an additional 20 nurse practitioners a year, and their appropriate distribution and utilization are matters of concern.

The Gaborone survey

In 1986 a graduate family nurse practitioner was seconded to the Occupational Health Unit. She joined a team comprising an occupational health physician, a health education-nutrition officer, a senior health inspector, an occupational health nurse, and a health assistant. As a member of this team, she was to participate in activities concerned with the promotion of the occupational health component of primary health care through a national workers' health programme, including pre-employment health assessments at the government hospital.

Among her other duties, the family nurse practitioner was given the distinctive assignment of independently conducting a survey of the health status of industrial workers in the capital city, Gaborone. Based

While collecting data on the health problems of industrial workers in Gaborone, the family nurse practitioner brought both curative and preventive primary health care into the workplace.

on a medical history and physical examination, the health survey was conducted at workplaces in 30 urban and peri-urban industries.

Data collection

After reviewing available information relevant to potential occupational health hazards in a given workplace, the family nurse practitioner would approach management to inquire whether the legally required pre-employment physical examinations of workers had been completed. The answer was usually "no", although this is a service provided free of charge at the government hospital. The nurse practitioner then offered to undertake these examinations at the workplace, explaining that this would assist the industry to comply with the law with minimal disruption to production. In addition, she emphasized the benefits to the employer of having a healthy workforce. As a result of this educational approach, every industry approached gave permission for on-site physical examinations of the workers.

At the appointed time, the family nurse practitioner and a practical nurse travelled to the worksite. They carried with them equipment including a diagnostic set: stethoscope, sphygmomanometer, Snellen chart, screen, cot, urine dipsticks, various forms, and a small store of pharmaceuticals. The employer provided a desk and chair in a location which afforded privacy and quiet. The workers were summoned to the examination area two at a time. The practical nurse assisted each patient to complete a medical history form and measured height and weight. The nurse practitioner reviewed the completed form with the patient. This form included the standard medical history items as well as questions specifically designed to elicit occupational and work-related health problems.

The family nurse practitioner then performed a complete screening physical
assessment very like that which would be
done in a typical outpatient department or
clinic. She examined all body systems,
except for vaginal examinations which
accounts for the low incidence of sexually
transmitted diseases discovered in females
(see table). If she observed a deficiency, she
either conducted more extensive testing,
such as audiometry in the case of a hearing
deficit, or referred the patient for more
thorough or more specialized investigations.

Diagnosis was based on signs and symptoms,
confirmed where essential with laboratory
and radiological investigations. Health
problems were diagnosed and managed in
accordance with the 1986 Botswana national
drug catalogue and treatment guide.

Findings

A total of 1007 workers (796 men and
211 women) were examined in 30 industrial
workplaces. The survey detected
166 untreated health problems (see table)
which, interestingly enough, are among the
conditions most commonly treated by family
nurse practitioners in primary care settings,
according to a 1985 survey (4). Thus, the
health problems affecting industrial workers
in Gaborone are, to a large extent, the same
as the primary health care problems
prevalent in the general population.

Treatment, referral and counselling

Upon completion of the health assessment,
the family nurse practitioner treated certain
conditions immediately. These included

<table>
<thead>
<tr>
<th>Health problem</th>
<th>Male (n = 796)</th>
<th>Female (n = 211)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexually transmitted diseases</td>
<td>150</td>
<td>7</td>
<td>157</td>
</tr>
<tr>
<td>Low back pain</td>
<td>102</td>
<td>46</td>
<td>148</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>94</td>
<td>11</td>
<td>105</td>
</tr>
<tr>
<td>Eye problems</td>
<td>81</td>
<td>15</td>
<td>96</td>
</tr>
<tr>
<td>Respiratory tract problems</td>
<td>68</td>
<td>4</td>
<td>72</td>
</tr>
<tr>
<td>Urinary tract problems</td>
<td>50</td>
<td>6</td>
<td>56</td>
</tr>
<tr>
<td>Dental problems</td>
<td>20</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>Injuries</td>
<td>23</td>
<td>4</td>
<td>27</td>
</tr>
<tr>
<td>Skin problems</td>
<td>20</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Undefined signs and symptoms</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Headache</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Schistosomiasis</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

Family nurse practitioners are an
ideal cadre for bringing the full
range of primary health care
services into the workplace.

upper respiratory tract infections and other
minor conditions as well as more serious but
easily treated conditions such as sexually
transmitted diseases. She provided follow-
up care herself or referred the patient
to another nurse practitioner in the
region. Serious problems and those with
implications for public health were referred
directly to the appropriate physician
specialist or health facility. Suspected
occupational health and work-related
conditions were managed in consultation
with the physician specialist in the
Occupational Health Unit. Interestingly,
some of the primary health care problems
found (see table), such as conjunctivitis and
skin rashes, tended to cluster in certain
industries and were in fact preventable. Had
these patients been diagnosed and treated on
a case-by-case basis outside the workplace,
the epidemiological significance of these
work-related conditions might never have
come to light.

In the course of her physical examinations
of the workers, the family nurse practitioner
also provided health education and counselling. For instance, workers with back pain were given instruction on proper body mechanics, and patients with psychosocial problems affecting their health were given assistance in sorting these out. Thus the family nurse practitioner, while collecting data on the health problems of industrial workers in Gaborone, brought both curative and preventive primary health care into the workplace.

## The family nurse practitioner in the workplace

The Gaborone survey demonstrates that the untreated conditions affecting the majority of industrial workers are not specialized occupational health problems but are the very same conditions seen in the general population, sexually transmitted diseases topping the list. Unquestionably, the solution is to bring primary health care into the workplace. But how? While it is not difficult to envisage providing health education within the confines of the workplace, the provision of clinical services—curative and preventive—is more problematic. Clearly, there is a need for innovation in the way such care is delivered.

The Botswana experience seems to validate a fresh approach to a component of health care traditionally rendered by doctors at health facilities: that of having it provided directly at the workplace by family nurse practitioners. This approach—taking health services to the people—is at the very core of the primary health care strategy for bringing health to all. Family nurse practitioners appear to be the cadre most able to offer acceptable, accessible and comprehensive primary care to workers. With clinical services available at the workplace, the workers can get the care they need without loss of work time. Further, they are more likely to accept health education and other preventive services if offered by the same person who cared for them when they were ill or injured.

### Models

The utilization of family nurse practitioners at the workplace will take different forms depending on local resources and needs.

- One model is to use a centrally-located family nurse practitioner, attached to an occupational health team, as a source of continuing education and other support for the district-level nurse practitioners and allied health workers. In this case the nurse practitioner at the central level, after additional in-service training and with extra support, could serve both as an occupational health trainer and as a first-level referral source for the local nurse practitioners, assisting them to identify and address potential and existing hazards in the workplace and to recognize and manage occupational and work-related health problems. They would then be in a position to provide more appropriate care to the workers they see, whether in health facilities or at the workplace itself.

- Another approach is to utilize a team of family nurse practitioners, each responsible for providing primary care at
workplaces in a given geographic region. In this case, the team would be linked to the occupational health specialists at central level who would provide necessary referral support.

- Many other models are possible, and it is up to local authorities to develop and implement programmes that meet the specific needs of workers in their area. One large rural district in Botswana, for instance, has organized a system whereby each of the district’s three family nurse practitioners spends one morning a week providing on-site primary health care for the district’s largest group of workers, government employees. Large private employers could make similar arrangements.

* * *

Perhaps the main challenge for health workers in Third World countries is to innovate ways of bringing primary care to the places where people live and the places where they work. The two are not synonymous. Since the Declaration of Alma-Ata, considerable progress has been made in extending health services into communities, thus bringing health care to where people live. To date there has been little progress in bringing health care to the places where people work, despite the universal recognition of workers’ health as a fundamental human right and as a basis for socioeconomic development. The working environment, particularly in urban areas, remains very much enclosed within the walls of factories and offices — inaccessible to the health workers who may pass by those walls every day.

Family nurse practitioners are an ideal cadre for bringing the full range of primary health care services into the workplace, and thus making the factories part of the total community served by the health care system.

References