

# NETWORK

THE NEWSLETTER OF THE INTERNATIONAL NETWORK FOR CANCER TREATMENT AND RESEARCH



**Volume 7, Number 3, Special Issue: INCTR Focused Workshop; Tanzania (Replaces Summer and Autumn Issues 2007) — Inside:** REPORT: Tanzanian Thematic Workshop - **8** - NEWS - **17** - PARTNER PROFILE: Netaji Subhas Chandra Bose Cancer Research Institute - **18** - PROFILE IN CANCER MEDICINE: Twalib Ngoma - **20**

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## THE PRESIDENT'S MESSAGE

### INCTR'S EVOLVING STRATEGY

Part 2. Building Human Capacity for Cancer Care *by Ian Magrath*

The lack of resources in low- and middle-income countries, in particular, limited access to clean water, sufficient food and basic health care, has led some to conclude that such countries cannot afford to address the complex set of diseases collectively referred to as cancer; more lives, the argument goes, could be saved by directing available resources to more basic issues of public health and infectious diseases. In contrast, the Universal Declaration of Human Rights states that everyone has the right to medical care. But the priority given to cancer is not simply a question of brutal pragmatism on the one hand, or the rights of individuals on the other. Cancer has become a public health issue that must be addressed even by the low-income countries because of the inexorable augmentation of the global cancer burden described in Part 1. Yet neither cancer nor non-communicable diseases are mentioned specifically



Participants in INCTR's first focused workshop held in Dar-es-Salaam, Tanzania.

in the UN Millennium goals, which focus, with respect to health, almost exclusively on mortality in under-fives, maternal health, AIDS, malaria and tuberculosis. Nor has an equivalent body to the Global Fund to Fight AIDS, Malaria and Tuberculosis, established in 2002 by the G8 countries, been created in the field of non-communicable diseases. These three serious infectious diseases are sufficiently common to warrant a

high priority, but so does cancer. The number of new cases of tuberculosis in the world in 2005 (most from developing countries), for example, was 8.8 million - a figure likely to be exceeded by the number of new cases of cancer per annum in developing countries in the course of the next few years. The relatively poor survival rate of patients with cancer in most low- and low-middle income countries is sometimes used

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as a reason *not* to address cancer at a public health level, but this is a consequence, at least in part, of the low priority assigned to cancer in these countries. In fact, much could be done at each of the levels of cancer control (prevention, early detection and treatment, and palliative care) without significantly affecting important programs directed towards primary health and infectious diseases - and such actions are needed now.

The need for action was recognized with the creation of the Program of Action for Cancer Therapy by the International Atomic Energy Agency in 2004 and subsequently by a resolution adopted by the 58<sup>th</sup> World Health Assembly that took place in May 2005 (see panel). As a result, an increasing number of governments

in low- and middle-income countries are cognizant of ongoing epidemiological transitions and recognize the need to reduce the prevalence of common risk factors for non-communicable diseases, and also to take action against specific cancers. All countries can implement programs in cancer prevention, particularly with respect to smoking (most already have), and almost all countries have some ability to care for patients with cancer. Even in regions where there are few or no cancer specialists cancer treatment is subsumed into general surgery, medicine and pediatrics, and many specialists deal with both benign and malignant diseases. Cancer centers exist in even the poorest of countries, although diagnostic and treatment facilities may be inadequate because of the severe limitations in human and material resources. In preparing for the future, the lack of resources is the biggest obstacle to progress; building human capacity for the early detection, diagnosis and treatment of cancer is essential if the millions of patients who will develop cancer in the coming years - particularly those in the lower echelons of society - are to be given a chance to live.

## APPROACHES TO CAPACITY BUILDING

Of all resources required to control cancer, knowledge (assuming its effective use) is surely the most important. Much can be accomplished without the expensive equipment available in high-income countries, however desirable in specific circumstances, but a deficiency in skills and knowledge on the part of the health care provider will lead to inefficient care - and often to the

loss of life that might have been avoided, even in low-resource settings. Moreover, however sophisticated the available equipment, its value is dependent upon the availability of trained technical, nursing and medical staff. Ensuring that the existing health workforce is well educated is a critical early step in capacity building, and even when resources are severely limited, increasing the efficiency with which they are used will result in tangible benefits to patients - both immediate, and in the future, for today's health professionals are responsible for the education and training of tomorrow's.

For these reasons, INCTR focuses particularly on improving the knowledge, skills and discipline of the professional health workforce in developing countries in order to fulfill its primary mission of capacity building for cancer treatment and research. In this regard, primary and secondary health care providers are as important as the oncology team, for unless cancer is suspected in the presence of its early signs and the disease diagnosed and treated promptly, there will be little impact on presently high mortality rates (a major reason for which is late diagnosis), and mortality will climb steadily as the cancer burden increases. Specialists who are not exclusively devoted to cancer also have an important role to play. Effective cancer therapy begins, of course, with accurate diagnosis, which requires good quality pathology both to establish the diagnosis and also to ensure that prognostic factors which may influence treatment planning are identified. Unfortunately, many pathologists may not have access (either for cost or other reasons) to



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more recent tools that add greatly to diagnostic accuracy and may sometimes be essential for prognostication and treatment selection.

Equally important to the choice of therapy is the extent (stage) of disease, the determination of which requires a variety of investigations, among them the removal and pathological examination of potentially involved tissues at the time of surgery and imaging studies of both the primary site of disease and anatomical regions where spread is likely. Unfortunately, equipment or materials required for accurate staging are often unavailable to the bulk of cancer patients in low- and middle-income countries, such that many patients receive inappropriate therapy. When cancer is localized, surgery (performed by a broad range of surgical specialists or by surgical oncologists), radiation therapy, or a combination of the two, can cure a significant proportion of patients. In some circumstances this fraction can be increased by the addition of systemic therapy either before or after loco-regional therapy. Prior chemotherapy can also reduce the need for radical and potentially mutilating surgery such that the quality of life may be greatly improved, and sometimes, potentially fatal late complications avoided. Some cancers, even when widely disseminated, are curable by chemotherapy alone. Clearly, effective cancer management requires a broad range of health professionals and technicians, and excellent communication among the disciplines. It also requires efficient links with community health workers responsible for suspecting cancer in the first place, or for screening for asymptomatic disease.

## THE STANDARD MODEL

Building human capacity is essential to effective cancer control in developing countries, but such capacity building must be adapted to local circumstances as well as needs. It is often assumed, for example, that training in a technologically advanced nation will provide the best possible educational experience. It is true, of course, that a number of cancer centers have been established in developing countries by highly motivated individuals trained in institutions in, for example, Europe and the USA, and many health professionals currently practicing in developing countries

have had some training abroad; not infrequently, specialist qualifications are unavailable in their own country. Unfortunately, such training is usually based on the needs of the institution providing the education rather than the those of the trainee's country of origin. The technological (and economic) gap between high- and low-income countries has increased greatly in recent decades, such that overseas training is, in general, less useful now (except, perhaps, for the for-profit sector or the relatively few advanced academic centers) than was the case several decades ago. This is one of many reasons that those trained abroad are frequently

<b>Training in Home Country by Visiting Experts</b>	<b>Training in a Technologically Advanced Country</b>
Many health professionals benefit	Only the trainee benefits
Emphasis can be directed to local needs	Emphasis is generally directed to the needs of advanced country
Training provided in the context of existing resources and infrastructure	Training provided in the context of resources and infrastructure of the advanced country
Trainees may continue to provide health services in home country	Trainee's existing skills unavailable to home country - and may be permanently lost. <sup>1</sup> If trainee returns, may not be able to utilize new skills and knowledge in the low-resource setting
Low-cost: benefit ratio	High-cost: benefit ratio
External experts can benefit from their experience in low-resource setting	Teachers unlikely to gain any significant understanding or new knowledge from trainee
Trainee's work may contribute to answering questions of importance in home country	Trainee may contribute to answering questions of importance in advanced country
<sup>1</sup> In the event that the trainee does not return to the home country, or does so only transiently.	

**Table 1. Comparison of training of health care providers in their own country versus in a technologically advanced country.**

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tempted not to return to their home country. At best, training in high-income countries is an inefficient and expensive way of building capacity in developing countries (Table 1).

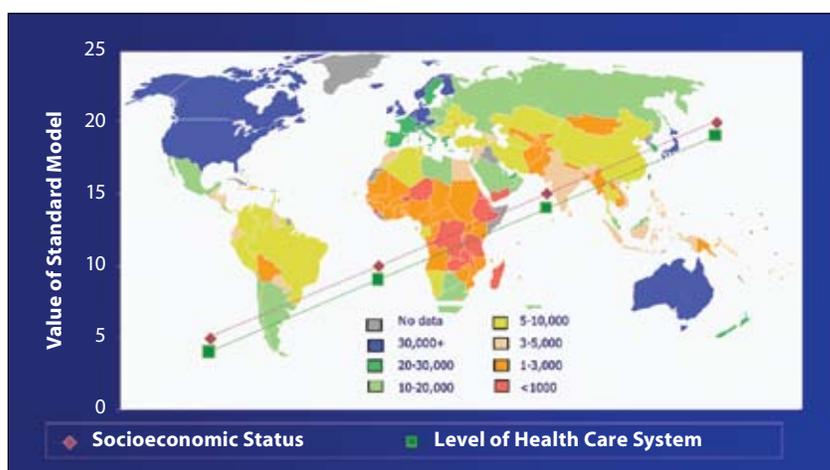
A second element of the “standard model” is to hold western-style symposia or congresses in low- or middle-income countries. Such meetings, in which speakers are usually predominantly from technologically advanced countries, generally address the latest approaches to diagnosis and treatment, often entailing sophisticated molecular studies and expensive drugs. Many of the external experts are unaware of the extent of the obstacles to effective care that exist in the host country (meetings are usually held in high-quality hotels); some are expatriates anxious to demonstrate their achievements in their adopted country. In large countries, or those higher up the socioeconomic ladder, there may be a cadre of sufficiently well-trained health professionals to be in a position to benefit from the material presented, and, assuming adequate infrastructure in their own institution, to pass on the benefits to their patients and trainees. Often, however, such individuals come from a very small number of institutions, many in the for-profit sector, and most attend similar meetings in the technologically advanced countries, such that regional congresses have limited value as national capacity building tools, although they may serve other purposes. In general, publicly funded institutions, which provide the bulk of health care in low-resource settings, are unlikely to have the resources necessary to be able to benefit from the information provided in conferences of this kind and their health professionals are less likely to be invited or offered support.

Like each of the components of the “standard model”, the overall value of this approach depends upon many factors, one of which is the level of development of the host country (Figure 1).

The third element of the standard model is the provision of guidelines for the establishment of cancer control programs or treatment. Many of these are of high quality, but frequently have little impact because they do not reach those most likely to benefit from them, or if they do, the guidelines are modified extensively because of personal whim or lack of resources required to follow them closely. Guidelines are generally considered to be approaches already validated by existing evidence, such that outcomes, other than occasional assessment of the degree of adherence to the guidelines, are rarely measured. Moreover, since much (although not all) of the evidence used to create guidelines comes from the high-income countries, where knowledge, skills, discipline and

resources, to say nothing of populations, environments and culture, differ markedly, some, and perhaps much of the evidence used to create them may have little relevance - or unknown relevance - to developing countries. Reassessment in these very different circumstances may be required. The efficacy and toxicity, for example, of chemotherapeutic regimens may be different in very poor, often malnourished populations living in overcrowded, unhygienic circumstances, or when supportive care is inadequate, while cytopathology and mammography may not be feasible or cost effective at a national level. Yet, with some exceptions (e.g., simple techniques for screening for cervical cancer) western approaches are assumed to be optimal.

Finally, emphasis is often given to the development of new technology or methods that may “bridge the gap” between high- and low-income countries. On occasion, new tools are extremely valuable (the effective use of hepatitis B, and, potentially, human



**Figure 1. Representation of the value of the “standard” model of capacity building in relationship to socioeconomic status (country color indicates GDP per capita in \$US expressed as purchasing power parity; data from the IMF). The value increases with the socioeconomic status and level of the health care system of the country (x axis) or of a subpopulation within a country.**

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papilloma virus vaccines, for example, or the use of information technology). In other circumstances, however, infrastructural limitations may obviate the value of novel approaches or technology. Tele-pathology, for example, will have little or no impact when specimens are inadequate or poorly prepared, improperly labeled, or have taken weeks or months to arrive at a reference center, during which time the patient's disease may have progressed beyond the stage of curability. Conversely, making a diagnosis promptly is of little value if appropriate treatment is not available or is too expensive for the patient to afford. Additional problems that may need to be overcome include intermittent reagent or drug supplies, a lack of hygiene or basic hospital epidemiology, poor compliance with planned treatment, poor access to emergency care, frequent power outages, lack of climatization (that may affect sensitive instruments) and lack of equipment maintenance. These circumstances are not universal, although in the low- and lower-middle income countries they tend to be the rule rather than the exception.

## **AN ALTERNATE OR SUPPLEMENTARY MODEL**

It is surely a truism that, in all countries, theoretical training in a practical discipline such as health care is insufficient to ensure effective practice. For this reason, INCTR emphasizes long-term collaboration in the context of specific projects as a multipurpose tool in which education is coupled to patient benefits. This results in the bulk of training being "in-country" with trainees receiving hands-on experience, regardless of whether the project relates

to early detection and treatment or palliative care. Training is provided prior to implementation, and various aspects of performance are monitored throughout the project through data collection and quality control, including on-site visits. Training and, indeed, learning for team members, including health professionals and data managers, is seamlessly interwoven with the project itself, positively influencing its outcome while at the same time providing patient services and developing human resources. The educational process, which includes both formal and informal elements, extends over many years and there is a strong mutual learning element, particularly as it pertains to overcoming resource limitations. The results of the project, e.g., the number of patients screened or treated and the outcome of treatment (including palliative care), provide an overall measure of success - the most relevant measure of all, since all training and education is ultimately directed towards improving cancer control.

Projects are conducted with the full involvement of local experts at all stages - design, implementation, conduct, analysis and publication. This is possible because each is led by a "strategy group" consisting of individuals from participating countries with at least some specialized knowledge relevant to the project. Strategy groups are coordinated by INCTR's Clinical Trials Office and serve several purposes. Firstly, the project is mutually owned by the strategy group, and not by INCTR. Secondly, intermittent strategy group meetings ensure that all members remain informed of progress and have an opportunity to discuss any problems that may have been

encountered as well as progress made. Joint decisions are made re: publications, including topics and authors. INCTR staff members, and, where necessary, other experts, participate in strategy group meetings and assist in developing all project-related documents (e.g., protocol documents, case report forms, proposals for grants and publications). Strategy group members are free to publish or present their individual institute data, but group decision is required when unpublished results from several participating centers is to be disseminated, whether via a meeting or a publication. By participating in the process of presentation and publication, members gain informal training in scientific analysis and writing. Long-term collaborations have many advantages over short term courses and workshops (and even self-learning) as the sole training tool, but they do not necessarily replace these other forms of continuing education. Rather, they enhance the value of a broad range of educational tools through continuous first-hand experience of the subject matter.

The benefits of collaborative projects extend to the patient (or individual screened for cancer). In the context of treatment studies, for example, patients benefit from being treated in a standard fashion agreed upon in advance by the strategy group, aided by the comments and suggestions of experienced advisors and of INCTR's Ethical Review Committee (all studies are also reviewed by local ethical committees). Most treatment studies are directed towards exploring the efficacy and toxicity of primary treatment regimens in the context of the available resources rather than new drug development, but the formal,

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**Figure 2. Diagrammatic representation of stepwise expansion through the creation of “centers of excellence” in the context of specific programs or projects which can form central nodes on regional networks through the provision of training to both non-specialist health providers in the community and specialists in other centers. Green: secondary or tertiary care centers; blue: community health centers.**

scientific approach ensures greater discipline of care delivery and greater efforts to ensure that patients are followed-up in order to accurately measure outcomes or to make new observations, such as factors that influence survival. Projects may be associated with more basic or epidemiological research and international projects provide opportunities for “geographical studies.” Finally, in addition to educational and patient benefits, successfully completed projects contribute to the evidence base for cancer control, both in the country or region in which the project was conducted and beyond.

## **CREATING CENTERS OF EXCELLENCE**

Inherent to each project is the creation of “centers of excellence” capable of good patient care, education of health professionals and conducting research. As nodal points in regional networks (Figure 2), centers of excellence can help disseminate informa-

tion and training relevant to early diagnosis, treatment or palliative care and, where appropriate, provide consultation. Such networks, as they develop, will include electronic communication and access to information and training tools made available on the World Wide Web. Over time, regional networks will ensure that there is a population impact, eventually at a national level, and may also provide relevant training and education to health care providers from other countries of similar socioeconomic status, hopefully, thereby, lessening migration to high-income countries. It will be important to develop systems of accreditation and re-certification, based on continuing education for both centers and individuals in order to provide assurance that appropriate standards are being reached and maintained, and to provide targets and a sense of accomplishment for those who satisfactorily complete training.

## **FOUNDATIONAL PROGRAMS**

In addition to capacity building via specific projects, INCTR is in the process of developing a set of programs which are designed to create a firmer foundation on which to build capacity and improve cancer control. These include workshops focused on themes of particular - and pragmatic - relevance to the country or region in which they are held, training in the systematic review of locally developed evidence, building infrastructure for clinical research, increasing the availability of skilled teachers or health providers through partnership programs, and developing an integrated approach to cancer control that promotes the extension of networks into the community - where the process of cancer control begins.

## **FOCUSED WORKSHOPS**

The purpose of focused workshops is to identify obstacles to effective cancer control - and potential solutions - in selected thematic areas of relevance to specific countries or regions. Each workshop has plenary and focused group sessions with local and external experts. Outside experts often visit local institutions, organizations or departments relevant to their specialty, to observe at first-hand the available resources. Focused workshops are associated with specific outputs, such as plans to overcome identified obstacles or to establish educational programs for health workers, or the production of manuals specifically designed for the country or region. Workshop reports may be a valuable aid to the national cancer control committee in developing national priorities and action plans. A report of the first focused workshop, held in Tanzania in August 2007, is included in this Newsletter.

## **CATALOGING AND REVIEWING**

### **LOCAL EVIDENCE**

In order to begin to overcome the heavy reliance on Western institutions for the creation of evidence on which to base cancer control interventions, this program is designed to create a data base of all published materials on the control of specified cancers and then to train scientists and health providers to review the available evidence in a systematic fashion in order to both assess its quality and to answer questions of importance to effective national or regional cancer control. Systematic reviews will be made widely available. This program is designed to emphasize the importance of local research in controlling cancer, to assess the quantity and quality of

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existing information and to help create a research ethos. It should also help to identify gaps in existing research results, and thus assist investigators and funding bodies to decide upon research priorities.

## **BUILDING INFRASTRUCTURE FOR CLINICAL RESEARCH**

The multiple values of clinical research to cancer control in developing countries have been alluded to repeatedly in this message. Yet such research cannot be conducted in the absence of the necessary infrastructural foundation in participating institutions and, potentially, cooperative groups. INCTR intends to expand its training tools for clinical research and to develop a program of accreditation of institutions and individuals in clinical research management. This will encompass all members of the research team, from investigators to data managers. While ongoing INCTR projects should benefit, it is also anticipated that the enhanced infrastructure will enable institutions to conduct more research initiated by their own staff members, and to link together as cooperative groups to study optimal approaches to patient care in their own national context. At present, most clinical research studies are related to product development and are conducted almost exclusively by the pharmaceutical industry via contract research organizations. Such studies do not usually provide infrastructure beyond the immediate trial needs or encourage cooperative research. Product development is important, but so are new ways of using well-established drugs (new combinations of which, for example, have been responsible for improving outcome in childhood cancer). The

latter studies are almost exclusively conducted by single institutions or cooperative groups.

## **DEVELOPING HUMAN RESOURCES VIA PARTNERSHIP PROGRAMS**

One significant obstacle to the expansion of training and educational efforts "in-country" is the need for experts to visit such countries and to spend enough time there to understand local needs and

### **Item 1.1) of the 58th World Health Assembly's Resolution of May 2005:**

**THE WORLD HEALTH ORGANIZATION  
URGES MEMBER STATES:**

**1) to collaborate with the Organization in developing and reinforcing comprehensive cancer control programmes tailored to the socioeconomic context, and aimed at reducing cancer incidence and mortality and improving the quality of life of cancer patients and their families, specifically through the systematic, stepwise and equitable implementation of evidence-based strategies for prevention, early detection, diagnosis, treatment, rehabilitation and palliative care, and to evaluate the impact of implementing such programmes.**

problems and to provide relevant training. Although an INCTR Visiting Expert program has existed for several years, the envisaged partnership program will complement this through matching western institutions with one or more institutions in developing countries for the purpose of developing long-term relationships involving multiple expert

visits (mostly to the developing country) designed to address identified needs. Mutual benefits should result through providing a broader experience to western experts and trainees. Such partnerships could include a variety of health professionals, including oncologists, nurses, pharmacists, radiologists, pathologists and even administrators, and might encompass mutually conducted research projects. In addition to visiting experts, digital solutions to capacity building, including online multidisciplinary meetings or one-on-one sessions for radiologists or pathologists, and the provision of access to e-learning modules relevant to cancer control in low- and middle-income countries will be included in this program. Dr Norman Coleman of the NCI is establishing a similar program called the "Cancer Expert Corps" and every effort will be made to ensure that this and the INCTR program are complementary.

## **COMMUNITY HEALTH CENTERS**

As mentioned, primary health care providers have a critical role in cancer control. They are usually the first health professionals to see cancer patients and must be trained to suspect cancer in appropriate circumstances and to ensure that the patient promptly undergoes diagnostic tests and receives necessary treatment. Community based health care centers can undertake screening of particular cancers, provide home-based palliative care and play a major role in public education. They are also in a good position to work with NGOs that can help create awareness, provide counsel for suspected or actual cancer patients and help raise funds necessary to sustain programs. ■

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## REPORT OF A WORKSHOP ON "CANCER CONTROL IN EAST AFRICA" FOCUSED ON DIAGNOSIS AND TREATMENT

INCTR's first thematic workshop, held jointly with the International Atomic Energy Agency's (IAEA) Program of Action for Cancer Therapy (PACT), took place in Dar Es Salaam, Tanzania, on August 22-24, 2007. INCTR Tanzania and the Ocean Road Cancer Institute were the local hosts and the meeting was primarily supported by NCI's Office of International Affairs and IAEA (ICEDOC and the Open Society Institute also contributed). The purpose of the workshop was to identify problems or obstacles within each of the thematic areas (all of which related to diagnosis and treatment) in East Africa in general, and Tanzania in particular, and to propose feasible solutions that might be implemented with or without the need for additional resources. Approximately a third of the attendees were outside experts associated with INCTR, IAEA or other partner organizations; the remainder were from East Africa, primarily Tanzania.

The themes of the workshop included: Access to Care, Histopathology, Supportive Care (during treatment), Transfusion Medicine and Palliative Care. Each theme was introduced in a plenary session held, on the first morning, by an East African health professional, after which there was general discussion. The afternoon of Day one was occupied by visits to departments or other hospitals relevant to the thematic area (see individual reports). Day two was entirely devoted to group discussions in each of the thematic areas. On the final day, also held in plenary, rapporteurs



Participants at lunch in the grounds of ORCI.

provided summaries of the deliberations of each group. Group reports were followed by general discussion and final conclusions. After the meeting, group reports were finalized in written form (summarized below) and collated into an overall workshop report that was presented to the Tanzanian National Cancer Control Committee. This report, along with the presentations given on Day 1, are available on INCTR's portal (INCTR Tanzania).

The Access to Care working group focused on obstacles to early detection, including the need for education of the public and primary health care providers, and the importance of screening programs.

The Histopathology working group focused on the identification of obstacles to timely, accurate diagnosis.

The Blood Transfusion working group focused on blood transfusion services in Tanzania, including blood collection, cross-matching and delivery from the blood bank to the bedside.

The Supportive Care working group focused on the identification of problems and needs relating to the support of patients undergoing cancer therapy, with a particular emphasis on chemotherapy.

The Palliative Care working group, which has already initiated a program in Tanzania, discussed progress to date and future plans.

## REPORTS OF WORKING GROUPS

### ACCESS TO CARE

The working group identified the following obstacles to efficient, timely access to care:

1. **Socio-cultural issues:** poverty and illiteracy are major obstacles. Stigmata relating to certain types of cancers (breast, genital tract, particularly) result in delay in seeking help, and diagnosed patients sometimes refuse therapy. Traditional healers are generally approached first, par-

ticularly in rural settings (90% of the population), in part because of greater accessibility than medical practitioners. Fear of the “big city,” bureaucratic formalities and the lack of provisions for care of the family left at home often prevent visits to distant hospitals.

**2. Community awareness:** in rural settings few will know anything about cancer or, if they have heard of it, believe it to be an invariably fatal disease. This is, in part, a reality, since diagnosis is so late that few patients - even among those who reach ORCI - survive.

**3. Transportation problems:** since most Tanzanians live in rural districts and lack personal transportation (even bicycles), transportation is by foot or bus. Bus routes link only major centers; the rest of the journey must be made on foot. Cost and the long arduous journeys to referral centers create significant obstacles.

**4. Structural issues:** a major problem created by the limited resources (human and physical) for diagnosis results in lengthy waits for the required investigations - which are often performed in different hospitals - and additional delays until reports (written rather than computer generated) are available. Tracking the test results can be either immensely time-consuming or, on occasion, impossible. Reports may lack essential information and communication among the specialties is poor. Bureaucratic issues create unnecessary delays in referring patients - there may be as many as seven layers to be traversed. Surgery is usually performed by general surgeons without reference to medical

oncologists or radiotherapists who are often consulted only at the time of recurrent disease. Institutional policy regarding the availability of medicines at night or weekends may influence whether or not a patient in urgent need receives appropriate therapy. Availability of drugs - cytotoxic and otherwise - is affected by inefficient procurement procedures, such that specific drugs and supplies, whether in the country or at an individual hospital, may be unavailable for some time.

**5. Limited resources:** the lack of staff at all levels is a major obstacle to effective care and the documentation of routine observations, treatment and treatment outcome. There are only two radiation therapy machines in Tanzania, which needs 30-40 (based on IAEA recommendations). Chemotherapy drugs are expensive, even when purchased from India (80% of the population lives below the poverty level); patients must generally pay this cost “out-of-pocket” (only civil servants have medical insurance).

The need for higher level staff to conduct some private practice to supplement salaries may create an additional diminution in services available to the poorer sectors of the community.

**6. Educational issues:** education is a critical element of access to care at all levels - the educational level of the patient, the knowledge of the first health worker accessed and all subsequent health providers. Health personnel may lack knowledge of the early signs of cancer or not know what to do when cancer is suspected. Patients may be subject to the wrong surgical procedures (either

inadequate or unnecessarily radical).

**7. Compounding of problems:** The lack of knowledge and/or adequate information about patients coupled to poor communication at all levels can result in delays or inappropriate action, which may in turn lead to complications and the need for added medical care.

## RECOMMENDATIONS

### 1. Create more information on which to base solutions:

- a. Conduct a survey (by patient questionnaire) of problems that limit access to care and identify measures likely to have a major impact.
- b. Create a list of available equipment and personnel relevant to cancer diagnosis in district hospitals and ensure that all hospitals are equipped for the tasks required of them in the context of the national cancer control plan.

### 2. Increase awareness in communities and among policy makers:

the major message to convey is that when cancer is detected early there are effective treatment options. This could be accomplished via radio broadcasts, community meetings and events organized by local NGOs or social clubs.

### 3. Improve professional education and communication:

including non-specialist health care providers at points of access to the health care system. Methods might include sensitization and educational workshops and rotation of district hospital staff through tertiary care centers. Creation of regional networks between primary care facilities and secondary and tertiary facilities is

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strongly recommended. The following should be seriously considered:

- a. Appointment of a district “cancer coordinator” trained in the recognition of the early signs of cancer and able to provide education to primary care staff and assist in patient referrals
- b. Use of health passports - small, standardized notebooks carried by the patient, available to all health professionals and containing information about when and where tests were performed. Ultimately, an electronic version might be envisaged.
- c. Development of professional societies at which problems and solutions are discussed, educational and planning meetings held and local or national health authorities approached collectively in the context of advising them of inventions required to overcome obstacles.
- d. Creation of continuing education programs for a range of health professionals that provide discipline-specific information about cancer
- e. Institution of regular multidisciplinary and, potentially, multi-institutional meetings regarding cancer diagnosis and treatment.

**4. Establishment of regional screening and palliative care programs:** consideration should be given to screening for selected cancers, e.g., uterine cervical and breast cancer, and establishing palliative care programs at all district hospitals and, where possible, community health centers (home-based).

## PATHOLOGY

The working group identified the following problems affecting the

practice of pathology:

1. **Low number of trained histopathologists in Tanzania:** there are currently only 14 trained histopathologists for a population of 37 million. Nine of these are based at Muhimbili Hospital. There are no histopathologists in regional hospitals where medical laboratory technicians take responsibility for dealing with specimens. Recruitment into histopathology is poor with only 8 doctors training in this discipline since 1990.
2. **Low numbers of trained medical laboratory histotechnologists in Tanzania:** there are currently 13 trained histopathology technicians in Tanzania. Recruitment is poor with only 8 trainees since 1990.
3. **Lack of equipment, poor maintenance of equipment and lack of training with new equipment.**
4. **Difficulty in obtaining and replacing essential reagents. Delayed transport of specimens from regional and district laboratories.**
5. **Long waiting times for reports.**
6. **Lack of a standardized report format that includes all information necessary for patient management.**

## RECOMMENDATIONS

1. **Low numbers of histopathologists and poor recruitment:**
  - a. Pathology might be made more attractive to students if systemic pathology were taught as an integrated subject together with the appropriate clinical subject rather than as a basic science.

- Students would then appreciate the importance of pathology in clinical practice.
- b. The need for A or B grades in student academic performance in order to train as a pathologist may unnecessarily limit applications. Motivation should be taken into consideration as well as grades.
  - c. Histopathology provides fewer opportunities for private practice. Broader training in all pathology disciplines before specializing in histopathology would better equip pathologists to work in district and regional hospitals as well as undertaking private practice in the broad subject of clinical pathology as is the case in Uganda. Apparently, private fees for histopathology are set by administrators and do not reflect the true cost of this examination. The fees structure should be re-examined, with input from pathologists.

**2. Low number of histopathology technicians and poor recruitment:** Recruitment of histotechnologists is also believed to be restricted by the limited opportunities for private practice compared with other branches of pathology. A broader education in all branches of laboratory pathology before specializing in histopathology would help resolve this problem and better fit the current needs of East Africa.

**3. Lack of equipment and poor maintenance:** this problem exists throughout Africa due to the widely dispersed laboratories and lack of finance. The laboratory at Muhimbili Hospital, however, has recently been refurbished and re-equipped to a

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<b>DAY 1</b>	
Welcome and Introductory Remarks	Twalib Ngoma
Introduction to the Workshop	Ian Magrath
Pathology in Tanzania – Strengths and Weaknesses	E. Mgaya
PACT Model Country Demonstration Site: Tanzania	Maria Stella Stourig
Supportive care in Tanzania – Strengths and Weaknesses	E. Kawira
Blood transfusion in Tanzania – Strengths and Weaknesses	P. Magesa
Palliative care in Tanzania – Strengths and Weaknesses	D.Msemu
Access to care in Tanzania – Strengths and Weaknesses	T.Ngoma
Cancer Treatment in Uganda –Strengths and Weaknesses	Luwaga Ahmed Kasumba
Pathology in Kenya – Problems and Needs	Jessie Githanga
Medical Oncology in Kenya – Problems and Needs	Nicholas Abinya
General discussion – Actions and Interactions	
Visit to pathology laboratory at Muhimbili Hospital	Pathology group
Visit to medical/pediatric wards at ORCI	Supportive care group
Visit to the blood bank at Muhimbili Hospital	Blood transfusion group
Visit to oncology wards & pharmacy at ORCI	Palliative care group
Visit to District Hospital	Access to care group
<b>DAY 2</b>	
Working Group Discussions	
<b>DAY 3</b>	
Access to care working group; report and recommendations	Ian Magrath
Pathology working group; report and recommendations	Dennis Wright
Supportive Care working group; report and recommendations	Aziza Shad
Blood transfusion working group; report and recommendations	Gerald Sandler
Palliative care working group; report and recommendations	Stuart Brown
General discussion	
Concluding Remarks	Twalib Ngoma

## The Meeting Program of the workshop.

very high standard with the aid of Abbot Laboratories. If laboratories in the same African region were to standardize their equipment manufacturers might be able to provide better technical support. The Association of Pathologists of East, Central and South Africa could play a pivotal role in recommending specific equipment and suppliers.

**4. Difficulty of obtaining essential reagents and standardization of laboratory tests:** This problem relates in part to the fact that equipment and materials are purchased centrally by administrators who

may have little knowledge of the needs and priorities. The Muhimbili Hospital Laboratory used to be designated as the Central Pathology Laboratory in recognition of its national responsibilities. The group recommended that it is re-designated as the National Institute of Pathology with its own director and a protected budget. The Institute could introduce standard procurement practices throughout government laboratories and ensure the standardization of laboratory techniques. It could also take responsibility for the quality control of pathology services throughout the country.

**5. Delayed transport of specimens from district and regional hospitals:** The current transport arrangements are haphazard and often unsatisfactory. This problem could also be dealt with centrally if a National Institute of Pathology were re-established.

**6. Long waiting times for reports:** An audit of the time between receiving the specimen and the time that the report is received by the requesting physician or surgeon should be undertaken. The causes of delay should be identified and rectified. Currently reports are hand written before being typed. The use of a dictaphone or a voice recognition system should be considered.

**7. Need for standardization of reports to include all information necessary for patient management:** protocols for the handling and reporting of specimens need to be produced in collaboration with the clinicians concerned. Regular meetings between clinicians, radiologists and pathologists (multi-disciplinary meetings) provide an excellent opportunity for education, quality control and audit. Multidisciplinary meetings (Tumor Boards) of this kind should be held on a regular basis, as should intradepartmental pathology meetings to review material for the Tumor Board.

## 8. Other matters:

a. *Books and Journals:* the Muhimbili Hospital laboratory had very few bench books and histopathology journals. It is very difficult for pathologists to deal with uncommon or difficult cases if they cannot easily consult colleagues or look up illustrations in a bench

# NETWORK



The pathology working group in session.

book or journal. There are various potential solutions to this problem.

- b. *Telepathology*: prior to the development of telepathology for education and consultation, images could be circulated by e-mail and telephone conferences held to fulfill these purposes.
- c. *Immunohistochemistry*: it will be important to increase the amount of immunohistochemistry if diagnostic accuracy is to be improved. The use of trephine biopsies is likely to increase in future since this technique can greatly reduce the cost and morbidity of biopsies, but this approach requires access to immunohistochemistry. There is a commitment from Abbott Laboratories to help develop immunohistochemistry at the Muhambili laboratory.
- d. *Professional Meetings*: The Association of Pathologists of East, Central and Southern Africa exists. The group recommended that it meet more regularly and act as a catalyst to improving pathology services throughout the region.

## SUPPORTIVE CARE

The Supportive Care Working Group was largely comprised of pediatricians working in public hospitals in Tanzania, including ORCI. The group focused their discussions on obstacles to the adequate provision of supportive care to patients (especially children) receiving cancer care in the public hospital setting where resources are particularly limited.

### Problems encountered in the delivery of supportive care

The working group identified the following problems relating to supportive care:

1. **Cost of care**: in Tanzania, children aged 5 years or younger are entitled to free medicines and care, but this does not include costs of diagnosis or investigations, transportation or food. For patients older than 5 years, the costs of diagnosis, treatment and supportive care are borne by the patient's family except for anti-malarials, anti-tuberculosis and anti-retroviral drugs. However, with respect to the latter two, distribution points are usually separate from

district hospitals or facilities such as ORCI. Frequently, hospitals rely on donations of drugs or supplies from outside sources. Donors may also provide assistance in alleviating certain costs related to lengthy hospital stays, including food and accommodation for patients and their families.

2. **Nursing staff**: patient-to-nurse ratios are very high, particularly during night shifts and weekends when only one nurse may be responsible for monitoring 30 to 40 patients. On day shifts the ratio is usually half this. This severely limits the ability of nurses to adequately observe and document the effects of treatment or to make standard nursing observations such as temperature and fluid intake and output – which are critical to the care of acutely ill children undergoing cancer chemotherapy. Often, family members provide the only source of information for the medical staff about vital signs and side effects related to treatment.

### 3. Physical environment:

- a. *Access to Information and Drugs*: There is no internal hospital telephone system within ORCI to ensure rapid contact with the on-call physician or to ensure prompt transmission of laboratory or other diagnostic test results. The staff uses mobile phones to contact one another in situations such as this. Some medicines and supplies are locked away and inaccessible during the night, such that immediate intervention for the management of post-chemotherapy related febrile neutropenia or other emergencies may not be possible.

- b. *Lack of Isolation Rooms*: There are large numbers of patients in open wards with no isolation units or beds in the hospitals represented by the group, thus increasing the risk of transmission of highly contagious infections such as chicken pox. At times, isolation is accomplished in collaboration with district hospitals or other facilities, but this is usually for specific infections such as cholera and tuberculosis.
- c. *Intensive Care Facilities*: ORCI does not have an intensive care unit. Some institutions have such units but priority is given to non-cancer patients. Private hospitals are better equipped, but patients less than seven years old cannot be managed.

#### 4. **Laboratory resources:**

- a. *Microbiology*: the capability to perform microbiological tests, including cultures and antibiotic sensitivities on body fluids or possible localized infections, is minimal at most of the institutions. Such tests may be performed for selected cases at specialized institutions but there are often significant delays in obtaining results, and samples are often lost. Most institutions can perform gram stains and most use urine microscopy for white cells to diagnose urinary infections.
- b. *Hematology and Clinical Chemistry*: basic laboratory tests such as full/complete blood counts and serum chemistries are available, but frequently these tests can only be done during the day. Automated machines are used, but when equipment is in need of repair, these tests go unperformed. Repairs are often

very expensive, and downtime for maintenance can be lengthy. Machines of this kind need to be routinely calibrated and since the reagents for this are often unavailable the accuracy of the tests is often questionable

#### 5. **Availability of medicines and blood products:**

- a. *Availability of Medicines*: the group discussed the availability of certain medicines, including chemotherapy, anti-infectious agents and other drugs relevant to supportive care. It was felt that a sufficiently broad array of agents is available for effective supportive care although compromises have sometimes to be made when particular drugs are not available or are too costly.
- b. *Availability of Blood Products*: at one remote institution, only whole blood is available whereas other institutions generally have access to packed red blood cells, platelets and plasma. The criterion used for the administration of blood transfusions are: when the hemoglobin is less than 6.0-7.0 g/dL or when the patient is symptomatic. Platelets are given for procedures requiring a platelet count of between 30,000 and 50,000 or when there are reasons to suspect that the patient is at high risk for bleeding. Most often platelets are given for active bleeding since the availability of platelet products is severely limited.

#### 6. **Patient-related factors:**

- a. *Problems Arising from Distance from hospitals*: patients often live great distances from the treating institutions and even relatively

short distances can entail arduous journeys. Other children in the family must be cared for by relatives, particularly when the mother accompanies a child for treatment. Because of the difficulties and expenses related to making the trip to a treatment facility, patients and family members often stay for the duration of treatment – either as in-patients or as out-patients. Family resources are scarce and when a parent must bear the costs of the entire treatment and supportive care for their child with cancer it places an enormous financial strain on the family, particularly when one parent loses income while staying with a child during treatment.

- b. *Underlying Health Problems*: nearly all patients have underlying health problems such as chronic infection with malaria, infestation with intestinal parasites and poor nutritional status. They are at greater risk for complications related to treatment because of the impact these factors have on their overall health.
- c. *Traditional Healers*: families often consult “traditional healers” when illness is detected, which frequently results in late presentation with advanced disease, adding to the complications of treatment.

#### **RECOMMENDATIONS**

1. **Guidelines for supportive care**: the working group members felt that guidelines for supportive care in patients undergoing cancer treatment should be developed and should include the most effective ways in which to utilize available medicines as well as guidelines for the use of blood products.

# NETWORK

**2. Human resources and physical environment:** while problems related to nursing shortages, hospital environments, and laboratory capacity could not be adequately addressed, these issues were felt to be of high priority. The use of paramedical staff for simpler nursing tasks could help to relieve pressure on nurses and the creation of isolation facilities could prevent deaths from contagious infections such as chicken pox.

## BLOOD TRANSFUSION

The working group, which included the directors of zonal transfusion centers, focused on:

- 1. Transfusion services:** collection of blood and the manufacture of components.
- 2. Hospital services:** the Muhimbili Hospital has been identified as a prototype for this.

The roles of the American Association of Blood Banks (AABB) and the President's Emergency Plan for AIDS Relief (PEPFAR), both of which are active in this area, were described. These are: **1.** To strengthen infrastructure **2.** To strengthen operational activities including blood collection, testing and manufacture of components **3.** To improve the availability of appropriate equipment **4.** To improve transfusion practices through the definition of ordering practices

It was felt that INCTR can best address unfulfilled needs by supporting the ongoing PEPFAR, AABB and Center for Disease Control (CDC) programs and the Ministry of Health's declared advocacy to approach the public and encourage them to

become voluntary blood donors at the zonal transfusion centers.

The working group identified the following problems:

- 1. The lack of adequate equipment and storage facilities:** domestic refrigerators, which do not have optimal temperature controls, are very often used.
- 2. The inappropriate use of blood and blood components.**
- 3. The difficulty of distribution of blood to remote regions:** this is caused by the lack of vehicles in the zonal transfusion centers.
- 4. The lack of educational material:** necessary for updating the faculty and the technical staff.

## RECOMMENDATIONS

The group recognized the significant progress and success of the Ministry of Health's initiative, along with its partners (Government of Norway, PEPFAR, AABB and CDC) in establishing a National Blood Transfusion Service (NBTS) in Tanzania. The long-term success of the NBTS will require the hospital leadership to: (1) support the concept of a National Blood Transfusion Service, (2) advocate voluntary donation at the zonal transfusion centers and (3) phase out blood collections at hospitals as soon as is practical. Several recommendations were made:

- 1. Vehicles and equipment:** the group identified a priority need for providing vehicles to transport blood from zonal transfusion centers to hospitals, particularly "hard-to-reach" hospitals. The group also identified a priority need for appro-

priate blood bank refrigerators for the storage of blood.

- 2. Advocacy of volunteer blood donation:** the group recommended further development of an advocacy program which focuses on the retention of dedicated safe blood donors as a foundation for expanding the voluntary blood program.

- 3. Education and training:** the group recommended that continuing medical education programs should be provided for both technologists at the blood centers as well as physicians supervising the programs. Physicians using blood and blood components should be updated on the rational use of these products.

- 4. Quality control:** the group recommended the establishment of a quality control program for all stages of blood collection, testing and processing. The zonal transfusion centers will participate in the development of a Quality Assurance Program for blood donation, processing and testing.

- 5. Blood transfusion committees:** The directors of the zonal transfusion centers expressed their concern about the lack of communication between the blood centers and the users of blood in hospitals. The group recommended that hospitals in the region organize Transfusion Committees which meet periodically. The directors of the zonal transfusion centers should be members of the hospital Transfusion committees to facilitate communication between the transfusion service and the physicians ordering blood or blood components.

## 6. Hospital services:

- a. Hospitals should support the NBTS and phase out their blood collections as soon as possible.
- b. Every hospital should implement the organization of Blood Utilization Committees constituted as defined by the National Blood policy.
- c. Inventory management is an important requirement for the hospital-associated transfusion services. Hospitals should have an appropriate program for maintaining adequate onsite inventories of blood and blood products.
- d. Hospitals should continue to support continuing education programs for physicians, nurses, technologists and any other staff members associated with the collection, testing and transfusion of blood or blood components.

The Blood Transfusion Working Group acknowledged the generous gift of five reference textbooks in Transfusion Medicine from the AABB. These were distributed to the directors of the zonal transfusion centers.

## PALLIATIVE CARE

INCTR is already collaborating with ORCI and the Tanzania Palliative Care Association (TPCA) in expanding access to palliative care in Tanzania. The discussion and recommendations of the palliative care group related to the continuation and development of this program.

### 1. Further training and curriculum development:

- a. An overview of ORCI/INCTR planning, advocacy and training/sensitization to date with a focus on training in government hospitals up to district level was provided.

- b. The structure of government health care facilities was reviewed; these include dispensaries (serving a 3 km radius), health centers (serving an approximate population of 200,000), district hospitals (about 140), regional hospitals (about 25) and 7 referral hospitals.
- c. Palliative care (PC) training will also be required in the military and correctional hospital system.
- d. Much has already been done with respect to compiling palliative care curricula for various health professionals at ORCI.
- e. There is a need to develop a core group of trainers who can help with these initiatives.

### 2. Potential collaboration:

- a. Potential collaborators include the National AIDS Control Program, Pastoral Activities and Services for People with AIDS, Seliane, Pathfinders and Family Health International.
- b. TPCA could help in coordinating (in a collaborative and efficient manner) the efforts of these mul-

tiple stakeholders/providers.

- c. Models in which TPCA might "sub-contract" to ORCI some of the advocacy, training, and care standards were discussed.

### 3. Opioid/Essential drug availability:

- a. The current situation regarding opioid availability/distribution in Tanzania was reviewed.
- b. With current efforts, opioid use could increase dramatically and plans to provide for this anticipated increase should be in place.
- c. If all zonal hospital pharmacies could be trained to compound and store opioids this would improve access to opioids throughout Tanzania.
- d. Physicians will need to be trained in order that they are comfortable in prescribing opioids.
- e. "Sensitization" is a necessary step in achieving the goal.
- f. Most drugs on the International Association for Hospice and Palliative Care (IAHPC) Essential Drug list exist in Tanzania but the supply is sometimes limited.



The children's ward at the Ocean Road Cancer Institute.

# NETWORK

## 4. Funding and donors:

- a. The need to coordinate requests to various donors was discussed.
- b. Limited funding has been obtained to date to support training in hospitals; much more significant funding has been made available for home-based care programs.
- c. Sustainability must be built into all programs.

## 5. INCTR guidelines/handbook:

- a. TPCA/APCA and national organizations should review the new edition of the guidelines with a view to endorsement.
- b. All other available guidelines should be reviewed to ensure full coverage of topics.
- c. National associations may be able to help with respect to local adaptation, e.g., with respect to drug availability (although this may vary over time) as well as distribution of the guidelines.
- d. The guidelines will need to be translated into various languages.

## 6. Data collection/minimum data set

- a. An overview was provided of how various data elements might be used in advocacy, assessing the quality of care, and in stimulating improvements in performance and research.
- b. The African Palliative Care Association (APCA) has developed a system of PC metrics. Alpha and beta testing is completed and validation is underway. This will be presented at the next APCA conference.
- c. Data is being collected as part of regular care and then submitted to the national palliative care association and fed to APCA.

## RECOMMENDATIONS

### 1. Further training and curriculum development:

- a. The National Training Program in PC already initiated at ORCI should continue its work in close collaboration with TPCA.
- b. The group recommended that TPCA review the curriculum already developed by ORCI, ensure key stakeholder input and approve the proposed curriculum.
- c. The group recommended that TPCA pursue accreditation of the PC curriculum by the appropriate government Ministries (e.g., Health, Science and Technology).

### 2. Ongoing collaboration:

- a. It was suggested that TPCA and ORCI explore the possibilities of TPCA “subcontracting” certain elements of the TPCA work plan (eg. advocacy, training, standards of care, other activities) to ORCI.
- b. It was felt that TPCA should take a leadership role in examining the work currently being done by various providers/stakeholders in Tanzania and expediting the development of standards that would be accredited by the government.
- c. Following the completion of the recommendations for home-based care currently in progress, it was recommended that TPCA should bring stakeholders together at ORCI to discuss coordination of efforts and identify priorities (perhaps as a satellite to the home-based care stakeholders meeting).

### 3. Opioid/Essential drug availability:

- a. Efforts should be made to expand the distribution of morphine from ORCI to other providers by

continuing to build capacity and infrastructure (including training) for all zonal hospitals to store and distribute opioids.

- b. The IAHPD Essential Drug List should be reviewed and modified as necessary. A means should be found of assuring constant availability of these medications.
- c. It was recommended that a review of available medical supplies and equipment used in PC should be undertaken and gaps identified and filled.

## 4. Funding and Donors:

- a. A proposal should be developed that clearly outlines the importance of ensuring hospital-based PC training initiatives in conjunction with home-based care initiatives.
- b. It was recommended that TPCA organize a funders meeting.

## 5. INCTR guidelines/handbook:

- a. APCA and national associations should be invited to review current INCTR clinical guidelines for appropriateness in Africa with a view to endorsement.
- b. Pending the outcome of this review, local adaptation of the guidelines including translation (if necessary) could be undertaken and locally available drugs given appropriate emphasis.

## 6. Data collection/minimum data set

- a. The work already done by APCA with respect to data collection should be reviewed and its utility in resource-poor settings addressed. ■

*This article is based on the reports produced by each working group. Group rapporteurs are listed on the Meeting Program (Day 3).*

## **DEVELOPMENT OF A REGIONAL CANCER CONTROL PROGRAM**

A meeting at the WHO Eastern Mediterranean Region Offices, Cairo, was held to discuss INCTR's participation in the preparation of a cancer control strategy for the EM region.

## **INITIATION OF AN INCTR FOUNDATIONAL PROGRAM**

Representatives of the European School of Oncology (ESO), INCTR and NCI Egypt gathered in Brussels on 12<sup>th</sup> July to discuss the initiation of pilot project relating to INCTR's foundational program on cataloguing and reviewing local evidence relating to cancer control (see President's Message).

## **FIRST FOCUSED WORKSHOP**

INCTR's first focused workshop, conducted with PACT and ORCI (see article in this issue), was held in Dar Es Salaam on 22-24<sup>th</sup> July.

## **SITE VISITS IN EAST AFRICA**

Visits were made to ORCI and the Kenyatta National Hospital by Melissa Adde on 25-27<sup>th</sup> August as part of the monitoring of INCTR's ongoing treatment protocol for Burkitt Lymphoma. Ian Magrath visited the New Nyanza Provincial General Hospital to discuss participation in this project and undertook a field visit relating to a *My Child Matters* Project that INCTR mentors.

## **WORKSHOP ON SCIENTIFIC WRITING**

A workshop designed to assist young investigators to prepare scientific papers for publication was held at the All India Institute for Medical Sciences in New Delhi on 17-21<sup>st</sup> September. The 5 participants had been selected on the basis of posters they presented at INCTR's last Annual

Meeting. Elisabeth Heseltine led the faculty, Ama Rohatiner of INCTR UK coordinated the meeting, and support was provided by the Office of International Affairs, NCI, USA.

## **LEUKEMIA STUDY GROUP OF INDIA MEETING**

A videoconference was held on 13<sup>th</sup> September to discuss progress and reporting with respect to the ongoing project for the treatment of acute lymphoblastic leukemia (INCTR 02-04).

## **IAEA SCIENTIFIC FORUM**

INCTR participated in the International Atomic Energy Agency's Scientific Forum, held during its 50<sup>th</sup> Annual Meeting in Vienna on 17-19<sup>th</sup> September. Ian Magrath gave a presentation entitled: *Cancer as a Global Health Issue; Strategies for Success*.

## **APCA CONFERENCE**

Doug Ennals of INCTR's PAX program participated in the African Palliative Care Association's Conference held on 19-21<sup>st</sup> September in Nairobi to discuss strategies for the future of palliative care in African cancer patients.

## **MASTER CLASS IN PALLIATIVE CARE**

Stuart Brown, who heads INCTR's PAX program, was a faculty member in a palliative care educational program organized by ESO in Tbilisi, Georgia and held on 6<sup>th</sup> to 10<sup>th</sup> October.

## **UK ADVISORY BOARD MEETING**

A meeting of the UK Advisory Board took place on 15<sup>th</sup> October.

## **ImPACT MISSION TO MADAGASCAR**

INCTR participated in an IAEA PACT mission to Madagascar from 18-22<sup>nd</sup> October.

## **INCTR SYMPOSIUM IN THAILAND**

An INCTR Educational Symposium on lymphoma, breast, lung and gastro-intestinal tract cancer was held in Bangkok on 15-17<sup>th</sup> November. Ninety physicians from 11 countries participated. The Symposium was generously supported by Roche.

## **WORKSHOP ON PALLIATIVE CARE**

AMCC (INCTR's French Branch) held a workshop devoted to palliative care on 11-15<sup>th</sup> December at the University Hospital of Souro Sanou in Bobo-Dioulasso, Burkina Faso. Over 50 doctors and nurses from Senegal, Mali, Niger and Burkina Faso participated.

## **EM REGIONAL CANCER CONTROL MEETING**

The regional cancer control plan for WHO's EM region, created jointly by INCTR and EMRO was presented for discussion at a meeting of regional stakeholders held in Marrakech on 19-21<sup>st</sup> November. The meeting was supported by EMRO and the Lalla Salma Association Against Cancer.

## **NEW PALLIATIVE CARE PROGRAM IN SAO PAULO**

Stuart Brown visited Sidnei Epelman of INCTR Brasil and the leadership of the Santa Marcelina hospital in Sao Paulo on 20-22<sup>nd</sup> November to discuss the establishment of a new palliative care program in the region of Saõ Paolo served by the Hospital.

## **SECOND ICCM MEETING**

The second International Cancer Control Congress took place in Rio de Janeiro on 25-29<sup>th</sup> November. INCTR was represented on the steering committee and organized a session on new methods and technologies in cancer control.

# NETWORK

## NETAJI SUBHAS CHANDRA BOSE CANCER RESEARCH INSTITUTE, KOLKOTA, INDIA

India is a land of diversity, made up of communities of different castes, colors, creeds and languages and large differences in social param-



ters such as income and education. Because disease prevalence in the population of over a billion people differs from one region to another, enormous resources are required to combat health-related problems. The government endeavors to deliver health care at the primary, secondary and tertiary levels, with 6 to 7% of the total national budget allocated for health, but until recently the government provided no separate funds for cancer.

In West Bengal alone, the total cancer burden is 5 lacs\*, with an increment of 70,000 new cancer patients every year. Less than 20% of these could ever receive tertiary care. Nearly 50% are treated locally by non-specialist physicians. Almost 30% receive no treatment whatsoever.

## COMPREHENSIVE CANCER CARE

In all of eastern India there were only two cancer centers. One is government-supported (Chittaranjan National Cancer Centre) and other is independent (Cancer Care and Welfare Home, Thakurpukur). With the idea of providing comprehensive cancer care at an affordable cost for the middle class people of Eastern India, a group of doctors decided, in 2002, to develop a new cancer hospital; as a funding source they established the Himadri Memorial Cancer Welfare Trust. Under the medical direction of Dr. Ashis Mukhopadhyay, Netaji Subhas Chandra Bose Cancer Research Institute opened in 2004. Since then, Mukhopadhyay and his fellow doctors at the institute have devoted themselves to making their facility the leading cancer hospital in eastern India.

“We started this project with nothing but the good wishes of the patients and their relatives,” says Mukhopadhyay. “We faced an enormous financial challenge, and team members sacrificed a great deal

of their own time and money in enabling us to provide services to the middle class and the poor. We overcame some of the obstacles, but even now we’ve a big problem of finance.”

Today, the Bose Institute, with 70 beds, offers a comprehensive cancer program including epidemiology, prevention and treatment. This is where rural and district hospitals send their cancer patients. The hospital also sponsors awareness programs in rural areas of West Bengal on thalassemia, as well as cancers of the breast, cervix and mouth. The hospital receives some government funding as well as support from local and regional organizations and international cancer societies. It is an international partner of ASCO, ASH, SIOP and ESMO.

To meet the great demand for cancer control in east India, the Institute is poised to expand. The government of West Bengal recently provided one acre of land where construction will begin on a 150-bed comprehensive cancer unit with state-of-the-art facilities, including labs for stem cell research. Still, financing the expan-



Cancer awareness campaign.

# PARTNER PROFILE

sion poses an enormous challenge.

“There are fundraising mechanisms in place for new equipment, clinics and an expanding cancer institute. But still we’re in great need of financial help from abroad.”

## CANCER ON THE RISE

The incidence of cancer in India has increased markedly in the last two decades, attributable in part to increased exposure to a number of risk factors including tobacco products and betel nuts (among males, oral cancer related to chewing habits is common). Poor dietary habits, alcohol consumption, excessive use of pesticides, and air pollution are additional factors that predispose to cancer to a greater or lesser degree. As a nation, India must strive to control cancer through awareness of its early signs and the fact that if treated promptly, many cancers can be cured. Cancer research should be encouraged, particularly in the context of specific approaches to cancer control, by making additional research funding available.

The Indian government has launched a national cancer control plan and is concentrating on infrastructural development focused around radiotherapy units in the underdeveloped regions of India. In this context, it is supporting non-government organizations, like Bose Institute.

## NEW APPROACHES IN CANCER TREATMENT

“In line with global trends, India is shifting its treatment paradigm towards targeted therapy,” says Mukhopadhyay. “Although the eastern part of India is lagging behind, our institute is trying to keep up with new developments in cancer treatment and we are participating

### RESOURCES

Total Beds:	70
Beds Devoted to Cancer Care:	70
Staff Physicians:	12
Nurses:	40
Dedicated Oncology Nurses:	40
Pathologists:	4
Oncologists	
- Medical Oncologists:	4
- Radiotherapists:	2
- Pediatric Oncologists:	2
- Specialized Surgical Oncologists:	4
Oncologists in Training:	2
General and Specialist Surgeons:	4
CT Scanners:	outsourcing but will be installed shortly
MRI Scanner:	outsourcing but will be installed shortly
Cobalt Radiotherapy Units:	anticipated
Linear Accelerator Units:	anticipated

### ANNUAL CASE LOAD PER YEAR (new patients)

Total Patients:	3,500
Total Outpatients:	2,000
Adult Cancer Patients:	3,050
Pediatric Cancer Patients:	450

### CLINICAL UNITS

Hematology  
Leukemia  
Bone Marrow Transplant  
Medical Oncology  
Surgical Oncology  
Gynecological Oncology  
Diagnostic Radiology & Imaging  
Pathology  
Biochemistry  
Molecular Biology  
Experimental Hematology & Immunophenotyping  
Intensive & Critical Care  
Blood Bank  
Clinical Trials Unit  
Pharmacy & Drugs Storage  
Outpatient Unit  
Daycare Unit  
Pain Clinic  
Psycho-Oncology Unit  
Nutrition Department



Patient in apheresis room.



Medical and nursing staff.

in several targeted therapy and clinical trials.”

Clinical trials are currently underway focusing on the treatment of acute lymphoblastic leukemia (INCTR’s MCP 841 protocols), breast cancer, lung cancer and head and neck cancers. At least seven new clinical trials are in the pipeline.

The Institute has developed special clinics in subspecialties such as pain management, nutrition, and psychology. As a teaching hospital, the Institute recently began offering the Diplomate of National Board (DNB) certification, the equivalent of the DM (Doctor of Medicine) in medical oncology. ■

\*A lac is an Indian number representing 100,000.

Marcia Landskroener for INCTR

# NETWORK

## PROFILE IN CANCER MEDICINE

### AFFECTING CHANGE IN AFRICA

Twalib Ngoma, Executive Director of the Ocean Road Cancer Institute in Dar es Salaam, and head of INCTR's Tanzania office is one of Africa's foremost radiation oncologists. He has a leading role in Tanzania as the local coordinator and secretary of the steering committee for the development of a National Cancer Control Strategy and Action Plan and in this role is an influential governmental advisor. Tanzania was recently selected by the International Atomic Energy Agency to be one of the PACT Model Demonstration Sites for the development of multidisciplinary capacity-building projects in cancer control. As the recently elected president of the African Organization for Research and Training in Africa, Dr Ngoma is also addressing the challenges of controlling cancer throughout the continent, where the obstacles posed by limited resources mirror those of his native country.

Dr. Ngoma is a recipient of a UICC/sanofi-aventis *My Child Matters* award for a Burkitt Lymphoma project aimed at facilitating early diagnosis, treatment and follow-up throughout the country and is participating in an INCTR project in the treatment of Burkitt Lymphoma. He and his colleagues have already shown that with a little funding, treatment results and follow-up of children with cancer can be improved in a short space of time, even in low-resource settings.

In Tanzania, where the vast majority of cancer patients present with incurable disease, his most significant contribu-



**Dr. Twalib Ngoma**

tion has been to improve the quality of life of these patients and help them die with dignity. "Palliative care," he says, "must become a top priority, particularly where late-stage cancers are the norm, although detecting cancers earlier is equally important."

The fact that 95% of the opioids available in Tanzania are administered or disseminated from ORCI is notable. First, it points to the magnitude of the need throughout the rest of the country—beyond the handful of hospices to which ORCI sends liquid morphine, cancer patients elsewhere are not being treated for pain. Second, it points to the success of ORCI's palliative care program. Since 2001, ORCI has been the only hospital in Tanzania permitted to import morphine. The powdered drug is processed into liquid oral morphine at the ORCI pharmacy.

"This arrangement will have to be revised because it may limit access to oral morphine," says Ngoma. "Because patients generally develop pain and other symptoms in their home setting,

oral morphine should be distributed at the community level."

What is also remarkable is Ngoma's power of persuasion. In Tanzania, opioids are administered free of charge. It's not that opioids are expensive. "The cost of liquid morphine for five days," he says, "is roughly equivalent to that of a loaf of bread." It's the reluctance to make the drugs more widely available, and particularly to allow oral morphine to be administered in home or in hospice environments that is most troubling.

Ngoma faces an enormous challenge to allay fears and to change perceptions of end-of-life care, to train nurses and doctors, to coordinate resources that could support home-based palliative care programs, and to share information about this important initiative with other African nations. His advanced training, coupled with his deep compassion for the people of Tanzania, have proven him up to the challenge.

Ngoma earned his medical degree in 1978 and spent five years training abroad. He studied at the Christie Hospital in Manchester, and worked at the Beatson Oncology Centre in Glasgow. Ultimately he made the decision to return to Africa where he had to adapt to conditions very different from those in the UK.

Though palliative care in Tanzania is still in its infancy, Ngoma is cautiously optimistic. "There is great hope that execution of the National Action Plan, whether partly or wholly, would dramatically change the existing picture," he says. ■

*Marcia Landskroener for INCTR*