

International Working Group Meeting on

*Integrated management of
adolescent and adult illness
(IMAI)*

Geneva, 24–25 September 2002



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1. Introduction

The Integrated Management of Adolescent and Adult Illness (IMAI, formerly known as SynAps) is a strategy to improve the quality of health care for under-served populations in low resource settings. It builds on and complements previous experience with other integrated approaches, particularly those developed for childhood illness (IMCI)¹, pregnancy and childbirth (IMPAC)² and adult lung health (PAL)³. IMAI extends the integrated management of the most common clinical conditions to the relatively neglected adolescent and adult groups, including the elderly. Within this life cycle approach, IMAI responds to the need for more and better health care in these age groups resulting from the increasing burden of disease due to chronic non-communicable conditions including mental health disorders and the high prevalence of HIV/AIDS in many developing countries. IMAI is designed to better meet the health care needs of adolescents and adults, through improved case management, disease prevention and health promotion.

To support the IMAI strategy, a set of prioritized, standardized, simplified and syndromic clinical guidelines are being developed, based mainly on existing WHO guidelines which have a country level focus. These will be addressed to multipurpose health workers and to clinicians in district hospitals and clinics. The IMAI guidelines are organized in a series of six modules which are designed to be used together or independently: these are *Acute care; Quick check and emergency treatments; Tuberculosis care; Chronic care; HIV care; Palliative care*; these are accompanied by a cross-cutting *Adolescent Job Aid*. They lend themselves readily to country-specific adaptation according to local health problems, needs and circumstances. The guidelines will be presented together with training materials and other tools to facilitate country adaptation and implementation.

The development of IMAI is a joint effort carried out in a working partnership involving at least 20 WHO departments and the WHO Regional Office for Africa (AFRO), as well as many international collaborating institutions (see Annex 4). More are expected to participate as the development work progresses and as introduction of the guidelines for use in countries begins. While focusing initially on Africa, IMAI is intended ultimately for widespread use in low-resource countries in different geographic regions.

¹ Integrated Management of Childhood Illness

² Integrated Management of Pregnancy and Childbirth

³ Practical Approach to Lung Health

2. Meeting objectives

The objectives of the meeting were:

- to review the current status of the draft IMAI guidelines and identify studies needed to complete each module;
- to plan field-testing, training material development and the development of summaries of the evidence base and possible country adaptations;
- to review relevant background data and early results from country work.

To accomplish these objectives, the meeting was organized by topics related to the development of the IMAI guidelines and by the individual guideline modules (see Annex 1).

3. Introductory presentations

1. *Dr David Heymann* welcomed the participants on behalf of the Director-General and conveyed the apologies of Dr JW Lee who, unable to attend, also extended a warm welcome to the group. Dr Heymann noted that IMAI was considered by the Director-General and her Cabinet to be an important step, addressing major health needs in developing countries, drawing effectively on expertise across the organization and in collaborating institutions. It extends the “horizontal” approach already well developed for IMCI, IMPAC and PAL, whereby the input from the specialised “vertical” programmes is integrated to provide simplified tools to help improve health care in low resource settings. The Rockefeller Foundation had taken a leading role in drawing attention to the need for more and better care for adolescents and adults, particularly in countries where HIV/AIDS is prevalent. The IMAI project was undertaken following a workshop organized by the Foundation in 2001, and preparation of the IMAI guidelines started soon after. The international working group now has an important role to play in moving the project forward through its recommendations during this meeting.

2. *Dr Lindsay Martinez* expressed appreciation for the support for the project provided by the Rockefeller Foundation, which had allowed work on the guidelines to proceed in WHO and initial field studies to be undertaken in Uganda, Kenya and Zimbabwe. The importance of the IMAI approach to health care, addressing prevention as well as treatment, was not only in relation to the needs for HIV care but also in improving the health status of adolescents and adults regardless of HIV status. By its cross-cutting strategy, IMAI brings in the often neglected or under-recognized non-communicable diseases including mental health disorders in the integrated management of the most commonly occurring acute and chronic health problems.

3. *Dr Sandy Gove* presented the current status of the IMAI project and technical basis of its development. As with IMCI, IMPAC, PAL, and the STI (sexually transmitted infections) guidelines, IMAI seeks to transform clinical interventions so they can be used broadly to improve public health. This involves producing standardized generic guidelines which focus on the priority problems. They are symptom based and simplified

for use by multipurpose health workers at the primary care level, who often have only limited clinical training and work in either peripheral facilities or district outpatient clinics. The primary aim is to achieve broad coverage of key interventions, which is a requirement for achieving a substantial impact on health in the population. This requires efficient and cost-effective interventions, combined into sets of simplified guidelines. The crafting of interventions into a coherent, integrated case management process allows health workers to address the clinical realities of sick patients seeking care in low resource settings.

The target audiences for the first-level facility IMAI guidelines are multipurpose health workers, usually nurses, clinical aids, nurse-midwives and other health workers with limited basic and clinical training who provide care at clinics, health centres, and dispensaries. The guidelines can also be used by clinical officers, general practitioners, and nurse practitioners working at facilities without inpatient facilities and with limited laboratory support. These are not community health worker guidelines although they do prepare the facility-based health worker to help support the work of several types of community-based practitioners such as TB and ARV treatment supporters and community-carers providing home-based palliative care.

4. Development process

The technical development of IMAI involves input from the many participating WHO departments and the regional office for Africa, whose staff members are full technical partners in the development and testing of these guidelines. The IMAI team is dedicated to being good stewards for the guidelines that are being integrated. Choice, simplification and compromise are necessary during integration. These decisions need in-depth and repeated technical discussion with the involved departments and international collaborators. Given the rapidly growing international collaboration, ways need to be found to make guideline review and research collaboration as efficient as possible.

IMAI addresses the aims of multiple disease and risk factor control programmes. However, it also recognizes that vertical disease control programmes whose activities would continue to work in parallel (and often at a more central level) while IMAI provides a way to share the work of practical implementation between multiple programmes.

The guideline development process is evidence-based and involves multiple iterative drafts incorporating new data, expert opinion, and the results of validation studies and field-testing. Rapid, partial country adaptations and training materials for use by an expert trainer are required for studies and initial field-testing. The training materials, also being developed through an iterative process, range from materials designed for use by an expert trainer who is thoroughly familiar with the development of the materials, to full training materials with guides for facilitators and course directors, allowing the training of trainers and expansion of training efforts. Several alternative methods will be explored to support the eventual development of effective country-specific training strategies.

5. Review of the draft IMAI guidelines by module

The meeting participants reviewed each IMAI guideline module in terms of the status of development and review, key remaining technical questions, plans for research studies and field-testing, plans for training material development, the timeline for completion of the guidelines and other tools, and the next steps. In this report, the remaining technical questions and research needs are listed separately in Annex 3.

5.1 *Acute care*

The *Acute care* module covers disease classifications and treatments for the care of acute illness such as pneumonia, diarrhoea, fever and sexually transmitted infections in adolescents and adults. This is the core IMAI module, cross-referenced by all other modules.

The algorithm in the *Acute care* module is in the same format as the outpatient IMCI guidelines. It is organized on the basis of clinical syndromes, guiding the health worker into more detailed assessments if the patient reports (or is observed to have) a main symptom. The guidelines then indicate how to classify the illness and to choose and provide treatment, counselling, and preventive interventions. *All* patients are asked about cough or difficult breathing (to assure a high level of TB case detection) and checked for malnutrition and anaemia. The health worker is prepared to respond to other volunteered problems including fever, diarrhoea, mouth and throat problems, symptoms suggesting mental illness, genitourinary problems (including sexually transmitted infections), headache, neurological problems, and skin problems. Brief interventions to help the patient stop smoking and reduce hazardous alcohol use are included, as well as key interventions against HIV transmission and other preventive measures.

Detection and management of mental health problems comprise an important area that is commonly overlooked, yet depression can impair adherence to treatment for many illnesses. Suicide is a growing problem; many deaths *could* be averted by good management of depression and educating health workers on the signs suggesting high suicide risk (incorporated within the acute care guidelines). Health workers are trained to manage depression by distinguishing which patients require medication, administering amitriptylene or another antidepressant when indicated, and providing simple counselling and suicide precautions when required. The questions related to depression require local adaptation.

In the women's genito-urinary section of the acute care module, the primary focus is on sexually-transmitted infections (STIs) and urinary tract infections. However, with the broad entry of "genito-urinary symptoms or lower abdominal pain", it is important to address menstrual problems and other vaginal bleeding. The draft addresses very heavy periods, menstrual pain, irregularity, and other abnormal bleeding and cross-references these guidelines to the IMPAC Essential Care Practice Guidelines (ECPG) for pregnancy (uterine and ectopic) and post-abortion care and to various family planning guidelines. The management for adolescents is differentiated from that of adult women especially as they age (where the possibility of cancer rises). However, this distinction may be less appropriate given the significant increase in cervical cancer in HIV-infected women.

Appropriate modifications have been made in this module to reflect the different approach to voluntary HIV testing and counselling (with informed consent) in a clinical context, compared to testing at Voluntary Counselling and Testing (VCT) centres.

Validation studies are still needed for the *Acute care* algorithm before it can be field-tested. There are encouraging results from a pre-test of the draft IMAI acute care algorithm by IMCI-trained nurses. The nurses were able to follow the flow of the acute care algorithm without training since it matches the IMCI algorithm in its approach to assessment, use of colour-coded severity classification tables, and listing treatments for each classification. The study using syndromic adult guidelines in an industrial clinic setting in Harare, Zimbabwe (principal investigators Dr Liz Corbett and Dr Charity Alfredo) has provided useful information on the utility of such an approach and on HIV testing in the context of clinical care. HIV testing was well accepted by patients in this setting.

There is general agreement that the validation studies should be conducted using the target populations of health workers who will later use the guidelines and a patient population seeking primary care. The classifications and treatment choices using the IMAI guidelines should be validated against the conclusions of an expert clinician plus a series of the best available laboratory results or other tests. Planning is ongoing to determine the sample size and outcome variables required to assess the integrated acute care algorithm.

Sites experienced in IMCI (such as the multi-country evaluation sites) could provide good platforms for IMAI development and testing.

5.2 *Quick check and emergency treatments*

This module covers the triage assessment and emergency treatments for severe medical illness, trauma and common psychiatric emergencies in adolescents and adults. The guidelines are intended to provide the health worker with simple procedures for the initial treatment of conditions such as shock, convulsions, and trauma. Training in the guidelines will prepare first-level facility health workers with the skills to recognize severe illness and provide emergency treatments that can stabilize patients before referral to hospital or, if the health worker is working in the outpatient or emergency department of a district hospital, to provide the first 15–20 minutes of care until a more senior clinician arrives.

Trauma has become a major cause of death and disability worldwide, particularly in adolescents and adults. Improvements in trauma management based on limited skills, supplies and equipment can strengthen the care of injured patients on first contact at primary care facilities. In addition to interventions to reduce mortality, improved management of extremity trauma has the potential to avert many serious disabilities. Basic trauma care has therefore been included in the *Quick check* module. Relevance to children of the trauma sections of the IMAI *Quick check* is being reviewed. Trauma care within this module will contribute to a broader approach to improving the planning of trauma care at multiple levels of the health system sponsored by the WHO Injuries and Violence Prevention Department (the Essential Trauma Care project).

Drafting of the *Quick check* guidelines started in 2001 as part of the Practical Approach to Lung Health (PAL). The format is the same as that of IMCI Emergency Triage Assessment and Treatment guidelines (ETAT).

Dr Lulu Muhe presented the experience with the IMCI ETAT. In a 7-country study, it was found that there was a lack of standardized guidelines, understaffing and poorly trained staff, lack of appreciation of the need for emergency care, inadequate triage and insufficient supplies (*Lancet* 2001, 357:106-110). The IMCI ETAT allows health workers to rapidly triage patients into those requiring emergency care based on a list of key signs, those who should be given priority for acute care, and those who can have normal priority in the queue. The ETAT guidelines are intended for use by doctors, nurses, and paramedical workers. Health workers have different roles and responsibilities in the emergency room and some need only to be trained in triage assessment and to call for help when a positive sign is identified. Most emergency care at night depends on nursing staff in developing countries. The guidelines have been validated in Brazil and Malawi (with revisions based on the validation results) and used in a refugee setting in Tanzania alongside the outpatient IMCI guidelines and a synthesis of the inpatient guidelines. The validation studies showed that ETAT guidelines effectively classify most sick children. They performed well in identifying and giving priority to most children who were admitted and/or died and there was good agreement between nurses and expert paediatricians on ETAT priority signs and classifications (*Arch Dis Child* 1999;81:478-82 and 473-77). Further work on the draft training materials is planned for November 2002.

The IMAI *Quick check* uses the same approach and format as the IMCI ETAT and the Quick Check/Rapid Assessment and Management at the beginning of the IMPAC ECPG guidelines. There is good potential for collaborative work between the three emergency guidelines in validation studies, field-testing and eventual implementation. It would be possible and desirable to produce an integrated emergency guideline, given the substantial overlap in core content, as illustrated in Annex 5.

The *Quick check and emergency treatments* module requires validation then feasibility studies, especially taking into consideration the difficulty in referring patients in many countries. While much is known on the substantial burden of injury in adolescents and adults, there is a need for more information on the epidemiology of injury in developing countries. It is important to identify the most common clinical conditions whose management can be significantly improved with simplified guidelines and limited supplies prior to either referral, involvement of a more experienced clinician and/or admission. More data are needed on which trauma interventions can feasibly reduce disability and mortality in settings with limited resources. Field-testing of the *Quick check* should help provide this information.

Training materials are being developed for the *Quick check*.

5.3 Tuberculosis care

The *Tuberculosis care* module for the adolescent/adult provides simple directly observed treatment guidelines to peripheral health workers at the first level facility, which extends treatment beyond the district hospital and allows more patients to be treated at home. As such it is an essential component of the DOTS expansion strategy. Cases are detected

using the acute care algorithm and the chronic HIV guidelines (ensuring that patients with HIV are systematically checked for TB at each visit). The module describes a simplified system for TB management including initiation of treatment for patients who are sputum positive, clinical follow-up for all types of patients, and directly observed treatment using a clinic, work place or community TB treatment supporter.

This module is the furthest advanced. Dr Karin Bergstrom reported that the TB health centre training course has recently been successfully field tested in Malawi. Some minor revisions but no further major developments are anticipated. A review meeting to confirm the field test modifications will be followed by completion of the modifications. Country support will then be provided for its adaptation and implementation.

The TB module within IMAI (and PAL) needs minor modifications to be made fully compatible with the TB Health Centre training course while at the same time fitting into the integrated IMAI (and PAL) guidelines. Further harmonization with PAL and the revised TB Handbook will take place before the end of the year.

It is anticipated that the revised TB module within IMAI (and PAL), the revised TB Health Centre training course, and the TB Handbook should all be harmonized and ready for use by end January 2003. The TB module with this TB health centre training course will then become the first IMAI module ready for country use. Given the extensive prior country experience with similar training, country use will not require close monitoring, which will be required for the other modules after the corresponding training materials become available.

5.4 *Chronic care*

The *Chronic care* module gives the general principles of good care of chronic illness, stressing how adolescent and adult patients can be involved in managing their own illnesses, helping them adhere to treatments, and reducing risk, for example through physical activity and a healthy diet. Dr Joanne Epping-Jordan described the current draft module which covers epilepsy, asthma, chronic obstructive pulmonary disease (COPD), secondary prophylaxis for rheumatic fever/rheumatic heart disease, leprosy, and chronic management of depression and psychosis. Several components are still in development: general principles of care, hypertension, other cardiovascular disease and cardiovascular risk reduction, and diabetes mellitus. The chronic management of patients who are known to be HIV positive is presented in a separate module (*HIV care*), following the same general principles of care for chronic illness.

Developing countries suffer the greatest impact of major chronic conditions. Of the total number of deaths attributable to non-communicable diseases worldwide, 77% are estimated to occur in developing countries (*World Health Report 2000*). Despite this, most health systems are oriented only to the management of acute illness. The patient's role in care is not emphasized or supported. Follow-up is sporadic. Prevention of the major risk factors for chronic illness is usually neglected.

• **General principles** — Traditionally, health systems modelled on acute care are a challenge to chronic care. The acute care dominated model mitigates against prevention and ongoing care. To institute the *Chronic care* approach requires concerted multi-level system change with support from a positive policy environment (macro level), health care organization (meso level) and appropriate patient-provider interactions (micro level). In the community, all actors need to be prepared, informed and motivated. Its translation into integrated policies is a challenge.

The IMAI *Chronic care* module addresses the micro level change in patient-provider interactions. It aims to summarize an effective approach to good chronic care, supported by training materials. These are based on an information/motivation/behavioural skills (preparedness) model with an emphasis on forming a true partnership with the patient, using a team approach to provide continuity of care and to support good adherence to care. These general principles of good chronic care are applicable to all chronic conditions. Once a health worker is trained (and their team and facility prepared) to deliver good chronic care for one condition, much of this can be applied to other conditions. This would allow a continuing adaptation process as first-level facility health workers become progressively able and equipped to manage additional chronic diseases. This will allow flexibility in district responses, based on their own burden of disease and health sector capacity.

The approach to the chronic care of different diseases will vary as to where treatment is initiated (at the first-level facility or at the district hospital), whether care is time-limited or lifelong, whether the disease is usually fatal, whether the patient is symptomatic, the degree of behavioural change required for disease management, etc. Where possible, peripheral initiation of treatment (with subsequent supervision and review by district staff) should be recommended, to minimize referral. This will be subject to country adaptation and may vary between districts and between urban and rural settings.

The module will need several common Treatment Cards, to track patient care. Several are already developed and in wide use (the TB Treatment Card and the Leprosy card) and others will be needed. A generic card could be used for several conditions.

In addition to Treatment Cards, district clinicians who diagnose and initiate treatment need to convey the patient's Treatment Plan both to the patient and to the first-level facility health worker. The complexity of the Treatment Plan will depend on whether treatment needs to be stepped up and down (such as for asthma) or is constant, with monitoring for side-effects.

For chronic illness, it is particularly important that health planning balance needs (based on community burden of disease) with demand for health services (based on health facility attendance).

The following summarizes progress on several chronic illnesses which are already part of the *Chronic care* module.

• **Mental health** — The mental health care component of IMAI addresses the continuum from acute to chronic care. Management of mental health disorders appears in the IMAI guidelines in multiple locations- the *Quick check* (to manage psychiatric emergencies

such as high suicide risk and violent or severely agitated patients), the *Acute care* module (to detect and treat or refer psychosis, depression, hazardous alcohol use, and anxiety), and in the *Chronic care* module. Counselling the depressed patient and the psychotic patient and family, as well as the provision of fluphenazine every 2 weeks to manage psychosis, are currently included.

- ***Chronic lung problems*** — The IMAI guidelines for asthma, chronic obstructive pulmonary disease (COPD) and TB are identical to the Practical Approach to Lung Health (PAL) guidelines, reflecting the origins of IMAI in the PAL guidelines which are themselves based on the IMCI and TB approach to standardized, syndromic guidelines. Dr Robert Scherpbier presented PAL as a primary health care strategy which addresses the integrated management of priority respiratory diseases including tuberculosis, pneumonia, COPD, and asthma. Standardization through the use of clinical practice guidelines is based on use of a limited number of clinical signs and symptoms, classification of disease severity, and definition of the minimal essential required drugs and equipment. The objectives of PAL are: to improve the quality of respiratory care through improved TB detection and standardization and integration care of chronic respiratory diseases; to improve the efficiency of service delivery through rationalized drug prescription, rationalized referral and counter-referral, and improved planning and resource management; and to reform the health management information system.

Several scenarios have been developed during PAL adaptation to respond to differences in the epidemiologic transition, socioeconomic circumstances, national policies, and national health systems.

A 6-month pilot PAL adaptation has been carried out in Nepal and South Africa. Adaptation had also been done in Morocco, with early introduction. The results of implementation in Morocco demonstrated that rational drug use, particularly antibiotic use, through application of country-adapted PAL guidelines results in substantial savings. A reduction of 33% in antibiotic use was achieved. This represents savings which could cover all estimated costs for chronic respiratory disease management.

- ***Leprosy*** — The leprosy elimination goal is to reach less than 1 case per 10,000 in the 12 remaining countries where leprosy still occurs. Populations need to know that leprosy can be treated free of charge and be cured. Leprosy elimination is increasingly integrated into general health care and is in the final push stage. Its inclusion in the generic IMAI guidelines will help the remaining endemic countries to continue efforts towards achieving and sustaining elimination. This will pave the way for dismantling of the vertical/specialized structures still operating in many national programmes, which WHO considers to be an expensive and unnecessary element in the elimination strategy.

Dr Vijaykumar Pannikar reported that whereas leprosy was previously considered to be a complex and incurable disease, it has been transformed into a disease which is easy to diagnose and easy to treat and cure. The diagnosis is clinical; classification can be made on number of skin lesions; treatment is standardised and free (based on blister packs for Multidrug Therapy, MDT); and a simple reporting system has been developed.

Integrating the leprosy guidelines into IMAI required only reformatting. These guidelines had already been simplified so as to permit diagnosis, initiation and monitoring of treatment at the first-level facility, based on a very short training. Leprosy is a good example of a disease which previously was only diagnosed and treated by specialist doctors and now can be managed by any primary health care worker after limited training. These health workers can also recognize and manage most complications. An advantage of integration is early case detection and treatment; early interruption of transmission; prevention of the development of deformities; and further reduction of stigma.

- **Cardiovascular disease and diabetes mellitus** — The guidelines addressing an integrated approach to cardiovascular risk management (including hypertension) and diabetes mellitus are in development. The guidelines for secondary prophylaxis of rheumatic fever or rheumatic heart disease summarize an approach supported by many national programmes which can be integrated into primary health care services.

Dr Shanthi Mendis reported that most of global burden of hypertension, cardiovascular disease (CVD) and diabetes mellitus is in low-income countries despite common perceptions that these are mainly problems of the developed countries.

A primary care approach has been developed with emphasis on reducing the key risk factors (smoking, physical inactivity, unhealthy diet) and intermediate risk factors (hypertension and diabetes mellitus). A CVD Risk Management Package is ready for validation and is placing increasing emphasis on combined behavioural and other risk factors over single intermediate risk factors. It is developed for three scenario levels for diagnosis and treatment based on availability of human, equipment and drug resources: non-physician health worker; medical doctor or specially trained nurse; and medical doctor with access to full specialist care. The guideline for non-physician health worker will be most relevant to the IMAI outpatient chronic care guidelines. It is based on a systolic blood pressure threshold only of 140 mm Hg (requiring a blood pressure measurement device) and a check for urine sugar, if available.

The *Chronic care* module may be ready for early use with close monitoring by early 2004.

5.5 HIV care The *HIV care module* provides preventive interventions and chronic care for patients known to be HIV positive. It describes a simplified approach to the treatment and follow-up of the HIV patient including management of HIV-related complications, education, counselling, support and prevention. The general approach to chronic care described in the chronic care module also guides this module. The tuberculosis status of the patient is reviewed at each visit and the guidelines are linked with the TB module as needed. The current draft has just incorporated guidelines on adherence support and clinical monitoring of anti-retroviral (ARV) therapy. The guidelines are intended for use by nurses and other first-level facility health workers, who will need to play an important role in providing chronic HIV care, with or without ARV treatment. This may happen at either the district clinic in close consultation with a nearby clinician, or in a peripheral clinic (requiring good communication with a district clinician if ARV treatment is to be monitored).

The acute and palliative care modules also provide many interventions relevant to HIV care and are cross-referenced from the *HIV care* module. The health worker is instructed to consider HIV-related illness when specific signs are found on examination. Voluntary HIV testing is offered in the context of clinical care, with informed consent and counselling. The health worker is prepared to explain the benefits of HIV testing which vary in individual settings.

The FCH/HIV Department has taken technical responsibility for the HIV content of the modules and convened an expert panel in June 2002 to review them. Compatibility of these guidelines with the several WHO guidelines for district level HIV care is kept under review, including *Scaling Up Antiretroviral Therapy in Resource-limited Settings*, its regional versions (including the draft AFRO clinicians' manual), and the second edition of the *TB/HIV Manual*. The latter guidelines are intended for use by doctors, clinical officers and nurse-practitioners and emphasize medical management, with less attention to patient education, counselling and adherence support. Compatibility of these and the IMAI guidelines will allow simultaneous use within a district for the various cadres of health workers.

There is considerable overlap between the IMAI guidelines and those required for the Prevention of Mother to Child Transmission Plus (PMTCT+) initiative which adds ongoing care for women and their children after receiving interventions to try to prevent transmission of HIV during labour and delivery. The IMAI guidelines are potentially the same as those needed for care of HIV positive women after 6 weeks post partum and are also useful as an adjunct to antenatal guidelines, when the pregnant woman becomes ill with non-pregnancy related diseases.

Plans for field-testing the module were discussed. Initial testing will be at a busy district clinic actively providing HIV care where ARV treatment will be initiated, with the nurse working in close consultation with a senior clinician. As a second phase, the module will be tested in more peripheral clinics.

5.6 Palliative care

The *Palliative care* module covers both the management of symptoms (during acute or chronic illness) and terminal care for adolescents and adults and works on the basis that family and community carers will provide most care at home with back-up by health workers. An illustrated booklet summarises non-medical strategies for home care. Health workers can use this to educate families and community-carers. The module also guides health workers on the use of medication to provide effective relief of pain and other symptoms.

A WHO palliative care project presented by Dr Cecilia Sepulveda, *Community health approach to palliative care for HIV/AIDS and cancer patients in Africa*, is in progress in five countries in southern Africa with the objective of improving the quality of life for HIV/AIDS and cancer patients by facilitating the development of palliative care programmes with a community health approach which will provide pain relief and holistic care to an increasing proportion of patients suffering from chronic life-threatening

conditions. Needs assessments have been completed in all 5 countries. The findings reveal a great need for palliative and bereavement care and for pain relief and holistic care at community level for cancer and HIV terminal patients (including pain control, food, family support and counselling and strategies to uplift family income) as part of the continuum of care preceded by curative and life prolonging care.

Hospice programmes run by non-governmental organizations (NGOs) have taken an integrated, systematic approach to palliative care. This has not yet occurred through government health facilities with few exceptions. Most successful home-based palliative care has been based on NGO activity and has been implemented in limited areas. The unmet need for good palliative care at home is enormous. In order to expand access to palliative care, the IMAI palliative care approach assumes that most of the care will be given by the patient's family and community carers at home, with back-up by government health workers at first-level facilities, with some support from the district team.

The *Palliative care* module supports the provision of liquid oral morphine at home, administered by the family, for pain relief in terminal illness. There is a serious need to expand the availability and use of morphine for pain relief in Africa and many other regions. Africa's morphine *per capita* consumption is the lowest in the world. Access to drugs for palliative care is problematic.

Educational tools for integrated palliative home care management are needed. An illustrated booklet for caregivers is under development in Uganda (Dr John Walley and colleagues with the Ministry of Health, Reachout and Hospice Uganda). After this has been tested, experience will be sought in a second country in adaptation and pre-testing. The aim is to have an effective generic tool and a protocol to guide its rapid adaptation and testing in each country or region. This is similar to the approach taken for country adaptation and testing of the IMCI counselling card for infant and young child nutrition.

A palliative care needs assessment has been carried out in eastern Uganda as part of the WHO palliative care project in five countries. By means of a cross sectional household survey, the prevalence of terminal illness, diagnoses of terminal illness at home, utilization of the health services, problems encountered by families and principal needs of terminal patients at home were assessed.

In order to approach palliative care, some problematic technical areas need to be addressed.

• ***Palliative care definition*** — The module title and palliative care definition can be confusing. WHO's recent definition of palliative care is clearly broader than terminal care:

Palliative care is an approach which improves the quality of life of patients and their families facing life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual...[Palliative care] is applicable early in the course of illness, in conjunction with other therapies that are intended to prolong life...(WHO: *National Cancer Control Programmes: Policies and managerial guidelines*, 2nd edition, 2002, Geneva.)

In developing the IMAI *Palliative care* module, it was intended that it apply to symptomatic management for all conditions, both acute and chronic, as well as terminal care for all chronic illnesses. However, many people still understand palliative care as terminal care only. This is unlikely to be overcome by adding a definition on the cover.

Conclusion: Consider changing the module title to “Palliative care: symptom management and terminal care”.

• ***Pain management*** — The pain management ladder follows WHO recommendations developed for cancer pain relief. These are not applicable for all acute pain. For example, many clinicians would be uncomfortable providing morphine for severe lower back pain on an outpatient basis. The pain complicating infectious complications of HIV/AIDS can rapidly become severe and, once treated, diminishes or disappears.

Conclusion: Consider separating pain management for acute and chronic conditions. Consider specifying that step II can be omitted in HIV/AIDS and including instructions on decreasing pain medication when pain resolves.

• ***Applicability of the palliative care guidelines to young children*** — It is intended that the guidelines, once finalized, be applicable for all age groups. Further work is required on the child-specific pages and thorough review and testing of the module as a whole in guiding the care of children.

• ***Decision on terminal status*** — The decision on terminal status is important since it changes treatment and referral. It is a difficult decision to make, especially in HIV/AIDS where the patient may appear to be terminal when suffering from opportunistic infections but regain substantial functions and live for many months after appropriate antimicrobial treatment and hydration. Because this is a difficult decision, it would be unreasonable to relegate it to the family or even to an inexperienced first-level facility health worker. How to address this in the guidelines needs to be resolved.

5.7 Adolescent job aid

The *Adolescent job aid*, presented by Dr Peju Olukoya, gives guidance on adolescent-friendly approaches to encourage use of the health services by this age group. Adolescents often do not access health services particularly if health workers have not been prepared to interact with them with an appropriate attitude. Special skills are required to determine what the adolescent’s problem is and to counsel on normal development. The job aid covers the determination of problems and needs, special considerations in the care of adolescents, preventive interventions and special counselling related to sexual maturation and health.

The *Adolescent job aid* will be a useful tool which can be readily used alongside IMAI, IMPAC and family planning essential care practice guides, and other WHO and national guidelines. Its use should be complemented with school interventions and outreach strategies to improve the use of the health services by adolescents.

6. The evidence base and country adaptation of the generic guidelines

6.1 *Background: IMCI adaptation experience*

Policies and guidelines require country adaptation before use in order to ensure that they cover the most important illnesses and are appropriate for the local conditions that affect the care of families in the health facility and at home. The adaptation process is a key element in national preparation for implementation. It is a mechanism for developing consensus on technical issues across disease conditions and control programmes. A well-managed adaptation process can also mobilize expertise, within and outside ministries of health, to contribute to locally effective guidelines and training materials and to support their implementation.

The IMCI adaptation experience shows that a structured adaptation process gives positive results and assures substantial country ownership and involvement of key partners within the country. Most countries have made only small changes in the generic signs and symptoms and incorporated additional conditions and drugs as appropriate to their disease conditions.

6.2 *Using cost-effectiveness ratios during country adaptation*

Dr. Tessa Tan Torres presented data on the cost-effectiveness of adult interventions relevant to IMAI. The cost effectiveness analysis and priority setting process are from WHO-CHOICE (Choosing Interventions that are Cost Effective). WHO-CHOICE is producing cost effectiveness ratios based on a standardized methodology which compares the application of the intervention to the modelled lack of any intervention (the “null” point) or to alternative interventions. Some interventions included within IMAI have already been analysed. Analyses of more interventions within IMAI are planned (see www.who.int/evidence).

6.3 *Using sentinel DSS data during country adaptation*

The sentinel Demographic Surveillance System (DSS), presented by Dr Don de Savigny, is an effective and affordable tool for measuring the burden of disease at household level. An expanding network of DSS sites throughout Africa and other regions can provide key data to support district decision making to improve resource allocation for health services according to their relative burden. It complements the health information system (HIS), which measures the “burden of attendance”.

In parts of Tanzania, sentinel DSS data is presented to district managers in two district planning tools – the Burden of Disease (BOD) profile and the District Health Accounts tool. The BOD profile is used to assist priority setting. It graphically presents the district disease burden that can be addressed by available cost-effective interventions. The analysis includes packages of interventions such as IMCI that addressed 37% of the total burden of disease in the coastal sentinel district in 2000. The District Health Accounts

tool allows direct comparison of the proportion of district health budget or expenditures on various interventions packages with the burden of disease that they address.

The IMAI relevant burden was estimated based on age and all causes of death, using 2.5 years of data from the rural coastal district Rufiji (85,000 people with 2,583 deaths, all analyzed by verbal autopsy). Cause-specific years of life lost (YLLs) were analyzed according to proposed IMAI age groups. Once the guidelines are more final, the YLLs by IMAI targeted causes will be analyzed and IMAI will be included in the Burden of Disease tool. These preliminary analyses showed that in the age group from 10 years to 65 years+ that communicable diseases caused 62.4% of YLLs (with TB/AIDS and acute febrile illness accounting for the majority), maternal mortality 4.5%, injuries 4.3%, and other non-communicable causes 18% (with cardiovascular disorders accounting for 43%). An estimate was also made of the proportion of the burden requiring acute versus long-term care. For IMCI causes, acute care was required for 97% whereas for IMAI causes, it is approximately 58%. This supports the emphasis within IMAI on chronic care.

When comparing sub-Saharan Global Burden of Disease disability-adjusted life year (DALY) data with empirical data from Tanzania across the IMAI age groups, there is good concordance in relative shares of burden by age and good concordance with top causes within broad causes despite absence of disability measure in the YLL approach. The major difference in GBD sub-Saharan Africa DALY data is the higher proportions for injury and lower proportions for communicable causes than are seen in empirical data from Tanzania. Once intervention strategies are finalized, it will be possible to re-map specific IMAI targeted addressable burdens by either DALY estimates or DSS mortality data.

6.4 IMAI Adaptation Guide

The IMAI adaptation guide, compared to that of IMCI, needs to be broader to address:

- a. Choice of modules and sections within the chronic care module, to support country adaptation then district choice (from a menu).
- b. Progressive addition of modules/sections
- c. More guidance on adjustments to fit health systems
- d. Health facility support for home-based interventions

Implementation scenarios, based on the epidemiological transition, economics and other data should be developed, based on early country experience with IMAI and using a step wise approach. These should be included in the adaptation materials.

The technical basis section of the IMAI adaptation guide will provide access to data to support adaptation decisions including:

- a. Burden of Disease tool, including how to access the most relevant district sentinel DSS data.
- b. Standardised cost-effectiveness ratios (from WHO-CHOICE).
- c. Malaria transmission data (Mara Lite).
- d. Global and regional GBD data.

- e. The regional and global 2000 GBD disease-specific data (presented in an easily accessible format).
- f. Cochrane reviews of the effectiveness of interventions.

Although the health system may not facilitate syndromic approaches like IMCI or IMAI, experience has shown in some instances that a positive response to integrated health care packages may lead to adaptive changes in the system. Adjustments should go both ways during country adaptation and implementation.

As in the IMCI adaptation process, several study protocols are likely to be helpful to facilitate country adaptations to significant cultural differences and to differences in available foods. These might include:

- a. Adaptation and pre-testing of the family education booklet for palliative care in the home.
- b. Adaptation of the questions to detect depression.
- c. Adaptations to make ARV adherence preparation and support more effective.
- d. Nutrition recommendations for HIV care.

7. Timeline

The timeline proposed for the development of IMAI, shown in Annex 5, is optimistic and depends on availability of the field sites and adequate resources. The timeline also depends on rapid work from several WHO departments and other collaborators on key interventions and adequate staffing and funding to allow the pursuit of multiple activities in parallel. It will be kept under review and modified if necessary.

8. General conclusions and recommendations

8.1 Advantages of IMAI

- By providing an integrated and syndromic approach, IMAI is a very appropriate and important set of interventions to improve prevention and care for adolescents and adults including the elderly, in low resource settings, particularly at first-level facilities.
- One of the benefits of IMAI is the integration of important but neglected non-communicable disease problems such as mental health disorders, in particular depression. The management of mental health problems is included in the *Quick check*, *Acute care*, *Chronic care*, *HIV care* and *Palliative care* modules.
- Feedback from Tanzania in places where IMCI is working well indicates that both health workers and the public want an adult version of IMCI.

8.2 Partnerships

- The IMAI collaboration is growing within WHO and internationally. At this time, 20 WHO departments or special programmes in 6 clusters are now involved in this development effort. The international collaboration is also expanding, based on the original Rockefeller Foundation-supported HIV care syndromic working group.
- The IMAI developmental work should be linked with other relevant clinical research work. Further involvement of other WHO departments in planning and managing the work and feeding in other relevant work is desirable.
- Community-based organizations and NGOs will remain an important means of outreach for palliative care. There is an emerging need to test the feasibility of fully engaging the public health services for palliative care education and support, using NGOs for technical support.
- Further development of the sentinel Demographic Surveillance System (DSS) to include morbidity surveillance should be encouraged in ways that are optimal to support IMAI. This should be presented to the next meeting of the InDepth network. In addition to current efforts to collect data on risk, information could also be collected on household members requiring home care, whether pain is controlled, and whether they are receiving appropriate chronic care (for certain conditions) or palliative care.

8.3 Role of WHO

- The IMAI interventions not yet analysed using cost-effectiveness ratios with WHO-CHOICE and IMAI as a whole should be analysed in the future. A combined request from the Directors of the participating departments should be considered in order to accelerate and prioritize this work.
- Ways of using routine health information systems to monitor IMAI performance when it is implemented should be developed, as well as efficient ways to link population to health facility data. Combining HIS data with modelling from DSS data can allow calculations of coverage.
- Broader integration of care: IMCI, IMPAC, IMAI and other syndromic approaches provide an integrated approach to case management, disease prevention and health promotion across age groups. They should work together to overcome common health system problems (e.g. referral, availability of drugs) and work jointly on specific issues (e.g. emergency care validation and eventual combined guidelines, training and support for implementation)
- WHO is requested to make every effort to work with member states to reduce taxes and tariffs on essential drugs within national policies and legislation.
- The timeline of IMAI should be adjusted after more detailed planning of the validation studies. It will also need to be adjusted if there are delays in the work of the different WHO departments involved due to funding or other constraints.

8.4 Guideline module development

Common to all modules:

- Referral: low compliance with referral of patients is a common and important problem which has been encountered in many countries by IMCI and should be anticipated for IMAI. Some referral could be avoided by case consultation between the first-level facility health worker and district clinician by improving communications (using for example solar-powered radios or cell phones); this would also facilitate essential referrals. Some referrals are essential – for emergency treatment of severe illness, obstetrical emergencies and for a number of chronic conditions.
- IMCI, IMPAC and IMAI should work together to identify modifiable barriers to referral, to find solutions, and to assure a strengthened referral system shared by children, adolescents, pregnant women and other adults.
- Where at all possible, interventions should be moved to the lowest level of the health sector, to reduce the need for referral.

Specific to one module

- The initiation of the first validation study for the *Acute care* module should be given a priority to assure all requisite preparation in a timely fashion.
- Additional qualitative work will be required to adequately address the acute care of adolescents and other subgroups.
- Cultural considerations need to be taken into account in choosing the text and illustrations for palliative care materials to prepare families for their role in home-based care. In some countries, several sub-national recommendations may be necessary.
- Extending the availability of oral morphine for use in terminal care in the home is important. This will often require policy changes to allow an extension of who can prescribe or supervise morphine use.
- Further in-depth consultation on chronic care research is needed.

For further information or technical correspondence, please contact:

Dr Sandy Gove, IMAI Technical Coordinator
World Health Organization
1211 Geneva 27, Switzerland

Tel: (+41) 22 791 1646 – E-mail: goves@who.int

Annex 1

International Working Group Meeting on Integrated Management of Adolescent/Adult Illness (IMAI) Geneva, 24–25 September 2002

Agenda

24 September 2002

Salle D, 9.00–17.30

09.00–9.15	Opening	Dr D. Heymann
09.15–10.00	Current status of IMAI project	Dr L. Martinez/Dr S. Gove

Evidence base for the generic guidelines and the country adaptation process

10.00–10.15	Current plans for documenting the evidence base for the generic IMAI guidelines	Dr S. Gove
10.15–10.30	Burden of Disease tool and Tanzanian population- based data	Dr D. de Savigny
10.30–10.45	Coffee Break	
10.45–11.15	Cost-effectiveness of adult interventions relevant to IMAI	Dr T. Tan Torres
11.15–11.45	Summary of IMCI adaptation experience	Dr E. Kudlova
11.45–12.00	Development of an IMAI adaptation guide	Dr S. Gove
12.00–12.30	Discussion	
12.30–13.30	LUNCH	

Quick check and emergency treatments module

13.30–13.50	Review summary, remaining technical issues, training material development, validation study plans	Dr S. Gove
13.50–14.15	IMCI ETAT experience and plans; relevance of Quick Check trauma guidelines to children	Dr L. Muhe
14.15–14.45	Discussion	

Acute care module

14.45–15.00	Review summary, remaining technical issues, training material development, Zambia pre-test results	Dr S. Gove
15.00–15.30	Zimbabwe Industrial Clinics- experience with brief counselling and rapid HIV testing, preliminary results	Dr C. Alfredo
15.30–15.45	Coffee break	
15.45–16.15	Acute care algorithm validation/feasibility study plans	Rapporteur from 23 September meeting
16.15–16.35	Adolescent job aid	Dr A. Olukoya
16.35–17.45	Discussion	
17.00–18.45	Reception	All participants

25 September 2002

Salle D, 9.00–18.00

Tuberculosis module

09.00–09.30	TB health centre training course field-test results and plans Discussion	K. Bergstrom
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Palliative care module

09.30–09.45	Review summary, remaining technical issues, training material development	Dr S. Gove
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09.45–10.20	5 country needs assessment and project plans; relationship to the IMAI palliative care module	Dr C. Sepulveda
10.20–10.45	Development and testing of the family education booklet and palliative care module in Uganda.	Dr J. Walley
10.45–11.00	Discussion Coffee break	
Chronic care		
11.00–11.30	Review summary, remaining technical issues, field-testing possibilities	Dr S. Gove
11.30–11.45	General principles of chronic care in low resource settings	Dr J. Epping-Jordan
11.45–12.00	Asthma, COPD: PAL experience with adaptation and use	Dr R. Scherpbier
12.00–12.20	Leprosy- experience with training and first-level facility initiation of treatment; advantages of integration	Dr V. Pannikar
12.20–12.40	Hypertension, cardiovascular disease, and diabetes mellitus: integrated primary care guidelines.	Dr S. Mendis
12.40–13.00	Discussion	
13.00–14.00	LUNCH	
14.00–14.15	Building a referral system for chronic illness – experience in Uganda	Dr J. Walley
14.15–15.15	Chronic HIV care – issues from HIV expert panel review; feasibility testing; training material development; relationship to PMTCT+ and ARV plans	V. O’Dell, B. Vareldzis, V. Habiyambere, Scott McGill, C. Gilks, S Gove, others
15.15–15.30	Coffee break	
15.30–15.45	Discussion	
15.45–16.15	Further guideline and adaptation guide development	Dr S. Gove
16.15–17.00	Validation and feasibility studies, field-testing, clinical research	
17.00–17.30	Training material development	
17.30–18.00	Overall IMAI strategy	
18.00	Close of meeting	

Annex 2

International Working Group Meeting on Integrated Management of Adolescent/Adult Illness (IMAI) Geneva, 24–25 September 2002

List of Participants

Name	Address
Dr Don de Savigny	Research Manager Tanzania Essential Health Interventions Project Ministry of Health National Institute for Medical Research, Ocean Road, P.O. Box 78487 Dar es Salaam, Tanzania
Dr Kate Grimwade	Hlabisa Hospital, KwaZulu Natal Africa Centre for Population Studies and Reproductive Health P.O. Box 198 Mtubatuba 3935, South Africa
Dr Craig Cohen	Dept of Obstetrics and Gynecology Box 35640 University of Washington 3935 University Way, N.E. Seattle, WA 98105-3915, USA
Dr Christina Mwachari	Kenya Medical Research Institute PO Box 43460 Nairobi, Kenya
Dr John Walley	c/o WHO Representative Plot 4, Nile Avenue East African Development Bank Building PO Box 24578 Kampala, Uganda
Dr David Mabey	London School of Hygiene and Tropical Medicine University of London Keppel Street London WC1, UK
Dr Charity Alfredo	Biomedical Research & Training Institute University of Zimbabwe Campus P.O. Box CY 1753 Causeway Harare, Zimbabwe
Dr James Kiarie	University of Nairobi Faculty Member Clinical Epidemiology Unit (INCLIN) Nairobi, Kenya
Dr Neil French	Wellcome Trust Malawi Blantyre, Malawi (from October 2002) Wellcome Clinical Fellow and Honorary Consultant Physician in Infectious Diseases Liverpool School of Tropical Medicine, Liverpool, UK
Dr Jim Todd	London School of Hygiene and Tropical Medicine University of London Keppel Street, London WC1, UK

Unable to attend:

Dr Tim Evans	Rockefeller Foundation – New York, USA
Dr Liz Corbett	Biomedical Research and Training Institute – Harare, Zimbabwe
Dr Ahmed Latif	Department of Medicine University of Zimbabwe
Dr Wafaa El-Sadr	MTCT+ Project at Columbia University – New York, USA
Participant	UNAIDS – Geneva, Switzerland
Participant	Global AIDS Program (GAP), Centers for Disease Control and Prevention (CDC) – Atlanta, USA
Dr Lut Lynen	MSF Sinahouk Hospital Center of HOPE – Phnom Pehn, Cambodia

WHO Secretariat

Dr Karin BERGSTROM	CDS/STB/TBS
Dr Jose BERTOLOTE	NMH/MSD/MBD
Dr Sylvie BRIAND	CDS/CSR/NCS
Dr Judith CANNY	NMH/MNC/CCH
Dr Francesca CELLETTI	NMH/MNC/CVD
Dr Luc de BERNIS	FCH/RHR/MPR
Dr Dirk ENGELS	CDS/CPE/PVC
Dr Howard ENGERS	CDS/TDR/RCS
Dr Joanne EPPING-JORDAN	NMH/MNC/CCH
Dr Olivier FONTAINE	FCH/CAH
Dr Antonio GERBASE	FCH/HIV/TSH
Dr Charles GILKS	FCH/HIV
Dr Sandy GOVE	CDS/STB
Dr Robin GRAY	HTP/EDM/PAR
Dr Vincent HABIYAMBERE	FCH/HIV
Dr Gottfried HIRNSCHALL	FCH/HIV/TSH
Miss Rania KAWAR	NMH/MNC/CCH
Dr Eva KUDLOVA	FCH/CAH
Dr Rafael LOPEZ OLARTE	CDS/STB
Dr Jean Dominique LORMAND	NMH/VIP
Dr Dermot MAHER	CDS/STB/TBS
Dr Paolo MATRICARDI	NMH/MNC/CRA
Mr Scott McGILL	FCH/HIV
Dr Lindsay MARTINEZ	CDS/STB
Dr Shanthi MENDIS	NMH/MNC/CVD
Dr Maristela MONTEIRO	NMH/MSD/MSB
Dr Lulu MUHE	FCH/CAH
Dr Francis NDOWA	FCH/RHR
Dr Porfirio NORDET	MNC/CVD
Dr Virginia O'DELL	FCH/HIV
Dr Peju OLUKOYA	FCH/CAH
Dr Vijaykumar PANNIKAR	CDS/CPE/CEE
Dr Poul Erik PETERSEN	NMH/NPH/ORH
Dr Leonid PRILIPKO	NMH/MSD/MBD
Dr Shamin QAZI	FCH/CAH
Dr Gojka ROGLIC	NMH/MNC/DIA
Dr Eduardo SABATE	NMH/MNC
Dr Robert SCHERPBIER	FCH/CAH
Dr George SCHMID	FCH/HIV
Dr Cecilia SEPULVEDA	NMH/MNC/PCC
Dr Walter TAYLOR	CDS/TDR/IDE
Dr Tessa Tan TORRES EDEJER	GPE/EIP
Dr Basil VARELDZIS	FCH/HIV

Unable to attend:

Dr Rufaro Chatora
Dr Thierry Mertens
WHO AMRO
WHO EMRO
WHO EURO
WHO SEARO
WHO WPRO

IMAI Focal Point in WHO AFRO – Brazzaville, Congo
WHO Centre on Vulnerability Reduction – Tunis, Tunisia

Annex 3

Key remaining technical questions and research priorities for IMAI as of September 2002

1. *Technical questions for IMAI as a whole*

1.1 Should the older child (5–9 years) be included with the adolescent/adult within IMAI or within the second version of IMCI?

1.2 The adequacy of case detection and management within the IMAI acute and chronic care modules for conditions with diverse clinical presentations and inter-related care need further assessment.

- Syphilis
- Symptomatic HIV infection
- Falciparum malaria
- Depression
- Diabetes mellitus

2. *Quick check*

2.1 Burden of disease data indicate that the contribution from injury and suicide are substantial, particularly in adolescents. More detailed clinical data are required on the common conditions, to determine whether the choice of interventions in the draft trauma section of the Quick Check is appropriately focused.

2.2 The role of first-level health facilities in peripheral locations in providing pre-referral emergency care for serious illness needs further examination. In developing the Quick Check, there has been a reliance on the opinion of national staff and experts experienced in developing countries on the choice and feasibility of certain interventions. This will vary by type of health facility, the clinical preparation of the health workers, and the availability of equipment and supplies.

- What is commonly available or could be feasibly made available for the management of emergencies? This may suggest moving certain interventions from the generic to the adaptation guide.
- Where referral is difficult or distant, are health workers at peripheral first-level facilities currently involved in providing pre-referral care for trauma, serious medical problems, or psychiatric emergencies? If not, what currently happens and how does this contribute to mortality and disability? What role could they assume be if they had minimal skills and supplies and the community were aware?

2.3 Validation studies comparing nurses using the Quick Check with an expert clinician (medical/trauma) before and after access to certain laboratory and radiological results are needed.

- How long does the triage assessment take for emergency signs if all are negative; for emergency and priority signs if all are negative?
- How does this compare to the time to do vital signs? Are the clinical signs for the detection of shock adequate?

2.4 Use of mock patients to test health worker performance:

- Can this approach be used to evaluate performance of Quick Check when used by nurses?
- Is it feasible and efficient to train a large number of health workers?

2.5 Should mention of ischaemic chest pain and aspirin (acetylsalicylic acid) treatment be retained in sub-Saharan Africa?

2.6 Should management of hysteria be added? (This is apparently common in some countries and may be more common than panic attacks).

2.7 Management of suicidal overdose:

- Given that some first-level facility health workers already know how to insert a nasogastric (NG) tube, should instructions on using this for lavage be included in the Quick Check?
- Why is there such resistance to NG use? What is required to overcome it?

2.8 Should sedation be by benzodiazepines rather than haloperidol? Or should this be an adaptation? Considerations include:

- Strong stigma of mental illness associated with haloperidol.
- Benzodiazepines are designed as a sedative whereas sedation by haloperidol is a side effect.
- Other side effects of haloperidol.
- Use of antipsychotics in emergency can make later assessment and diagnosis more difficult.
- Problem with oral diazepam abuse. (This is apparently one of the most common drug abuse problems related to availability in some essential drug kits.)

3. Acute Care module – overall

3.1 Validation of the integrated acute care algorithm is needed (a working group is planning several studies).

3.2 Is the division between those symptoms which are checked in all patients and those which are checked only if the patient volunteers the main symptom as a complaint appropriate?

This differs from IMCI. It will both save time in the assessment and classification and reduce time spent on minor symptoms that the adult might agree to on questioning but would not volunteer. Which symptoms are checked in all and which rely on the patient volunteering them will be subject to country adaptation. Should there be a change in the division in the generic? What would be the division and why?

3.3 Is the definition of acute/new illness functional?

3.4 Feasibility and utility questions for the acute care module as a whole

- Can target audience be trained in a limited period of time to use algorithm correctly?
- Nurse estimate of utility
- Organization of work/patient flow interventions in support of use of the acute care algorithm
- Time required for full case management

3.5 Voluntary HIV testing and counselling in the context of clinical care—is the approach presented in the *Acute care* module effective?

4. Cough or difficult breathing

See PAL research questions

4.1 Are the respiratory rate thresholds for fast and very fast breathing by age appropriate?

4.2 Referral of patients with severe pneumonia—are these signs adequate? Can they be reduced in number?

4.3 How common is acute wheezing illness, without diagnosed asthma (complicating an acute respiratory infection)? Is the management in the guidelines adequate or should it be treated as a separate entity?

4.4 Referral for possible chronic lung disease—it is appropriate as is? Or should this follow (sequentially) negative results on TB sputums?

4.5 What are the best antibiotic choices for pneumonia in high HIV prevalence settings?

4.6 Symptomatic management upper respiratory infections

- Does more need to be in the generic guidelines—or can these be added during local adaptation?
- How common is acute otitis media, chronic otitis media, external otitis in adolescents and adults? Can the IMCI guidelines be used?
- Allergic rhinitis—how common is this? Is it cost-effective to add its management?

4.7 Chest pain other than pleuritic:

- How common is ischemic chest pain?
- Is this adequately managed with the medical Quick Check?
- Do guidelines need to be added for esophageal reflux?

4.8 Is detection and management of patients with congestive heart failure adequate?

5. *Malnutrition and anaemia*

- 5.1 Should signs of anaemia be checked in all (including men and boys) or only women and girls?
- 5.2 What is the performance of the two clinical signs of anaemia
- 5.3 Performance of visible severe wasting in detecting severe malnutrition. Which signs perform best?
- 5.4 Should iron/folate tablets be given to women of childbearing age before and between pregnancy?
- 5.5 Should we be addressing “malnutrition” or “undernutrition”?

6. *Fever*

- 6.1 What is the role of deep breathing as a sign of severity in adults?
- 6.2 What is the overlap in clinical presentation between ALRI and severe malaria in adults?
- 6.3 Management of persistent fever in HIV infected adults
 - How should this vary by clinical stage?
 - Do the guidelines adequately address the management of malaria when there is persistent fever during clinical stage 3 or 4 HIV infection? How often should treatment be given for malaria?
- 6.4 Validation of the current fever algorithm is needed. (This will also be included in the acute care validation studies.)
- 6.5 Individual malaria risk definitions
 - Age threshold for lower immunity– should it be 5,10, or 15 years?
 - Is the individual estimation of malaria risk functional?
- 6.6 Other causes of fever
 - In low malaria risk patients–when not to treat with antimalarial?
 - How effective is the algorithm in directing treatment to other causes?

7. *Mouth and throat*

- 7.1 Will the distinction between thrush and oral hairy leukoplakia (which does not require treatment) reduce overtreatment? Is this distinction already being made?
- 7.2 Performance of the few clinical signs in identifying oesophageal thrush for empirical treatment? Is this empirical approach to treatment acceptable?
- 7.3 Mouth and gum ulcers–no distinction is made between herpes and aphthous ulcers. Is this acceptable?
- 7.4 Dental recommendations:
 - How are dental abscess and teeth requiring extraction currently handled by first-level facility health workers?
 - What is the feasibility of the recommended dental abscess management?
 - Can extractions be handled, to reduce referral? Does this differ for frontal and molar teeth?
 - Is dental care available at the district hospital?
- 7.5 In high HIV prevalence settings, should the health workers look in the mouth for candida in all adults?
- 7.6 What are the minimum requirements for looking in the mouth:
 - None (do not touch, use ambient light or sunlight through window)
 - Tongue depressor?
 - Small flashlight/torch?
 - Gloves?

7.7 Empirical treatment of streptococcal pharyngitis

- Performance of clinical signs in adolescent/adult
- Should there be an age threshold for the consideration of empirical streptococcal pharyngitis treatment (given that there is little rheumatic fever after age 15 years)?

8. *Diarrhoea*

8.1 Is the two-week definition of chronic/persistent diarrhoea appropriate in adults?

8.2 Should assessment of the rectal area be added in patients persistent with diarrhoea (suggested by nurses in Zambia)?

8.3 How often is CDD job aid still available and used? How should this influence country adaptation of the IMAI guidelines?

8.4 More evidence is needed on the effectiveness of high dose codeine, the maximum dose, how long it can be used, and when to recommend advancing to opioids (morphine or methadone) for control of persistent diarrhoea.

8.5 Should micronutrients be recommended for persistent diarrhoea in adolescents and adults? Should this be in the generic guidelines or an adaptation?

8.6 How well does the inner forearm serve as site for checking for turgor.

In specifying the signs of dehydration for the Integrated Management of Pregnancy and Childbirth (IMPAC) Essential Care Practice Guide (ECPG), the forearm was substituted for the abdomen in the pregnant women (for obvious reasons). It is easier and perhaps more acceptable in all adults to use the forearm rather than the abdomen. (The inner forearm was chosen, because there is less loss in turgor with age).

8.7 As in severely malnourished children, turgor does not perform well as a predictor of dehydration in patients with severe wasting which is common in late HIV/AIDS. It also loses value in the elderly. How should this be handled?

9. *Female GU problems and lower abdominal pain*

9.1 Urinary tract infections (UTI)

- How well do the signs in the draft perform in detecting and discriminating upper and lower UTI?
- Is the overlap of clinical with GC/chlamydia infection adequately handled in the guidelines (limited to follow-up of suspected UTI)?
- Is it safe not to refer all suspected pyelonephritis? Are the criteria for which case to refer functional?

9.2 Menstrual problems

- Are there tested guidelines on how a multi-purpose health worker should manage vaginal menstrual and other bleeding problems without skills in pelvic examination or relevant laboratory (and without referring everyone to a gynecologist which is clearly not practical in low resource settings)?
- Are the draft IMAI guidelines functional? Are they safe (will they adequately link with management of abortion, ectopic pregnancy) and effectively linked to antenatal care?

9.3 The STI guidelines in IMAI, consistent with new STI guidelines, have eliminated most of the risk approach and separated the treatment of cervicitis from vaginitis. The ongoing resolution of these issues is the responsibility of the STI unit in RHR.

9.4 Pelvic inflammatory disease (PID).

- How much loss in sensitivity is there if health workers do not check for cervical motion tenderness?
- Is lower abdominal tenderness sufficient to diagnose PID?

9.5 If health workers can do a bimanual examination, should uterine tenderness or mass be added (in addition to cervical motion tenderness)?

10. Lower abdominal pain – female and male

Are the clinical signs adequate to catch most severe conditions requiring surgical intervention and/or hospitalization?

11. Skin and lump pages

11.1 The distribution and characteristics of several skin conditions has changed in symptomatic HIV patients.

- Review of this section by clinicians with strong HIV experience is essential.
- Are the guidelines functional for HIV-infected patients?

11.2 Is it functional to have the health worker use both the classification table for infected skin lesions and choose amongst the skin lesions if the patient has both signs of infection and itching? This would result in classifications (and associated treatments) of impetigo and scabies in a patient with impetiginized scabies.

11.3 Infection table – guidelines vary as to whether some cases of impetigo and few or small abscesses are treated locally, without antibiotics.

- Are the divisions by severity and treatment appropriate?

11.4 Persistent generalized lymphadenopathy (PGL):

- Is the criteria for PGL functional and appropriate ? (Criteria seem to vary by source over time.)

11.5 Should metronidazole be included in the management of severe papular folliculitis?

11.6 How common is itching in psoriasis? Some sources indicate there is no itching but this is not the clinical experience in some countries.

11.7 What is the efficacy of capsicum cream in the management painful zoster after the acute phase?

11.8 Would these tables also function for children under 5? What would need to be added?

12. Neurology

12.1 What is the minimal essential neurological examination for detection of most (not all) focal signs; for use by health workers at first level facilities?

12.2 Management of painful foot, lower leg neuropathy-

- Should initial management be pyridoxine if on non-fortified INH then low dose amitriptyline?
- How common are other contributors (see treatment column)?
- Treatment trial are needed to compare empirical regimens for peripheral neuropathy in high HIV prevalence areas.

12.3 Headache management in low resource settings.

- How common is migraine?
- What is the best regimen (sequence of treatment) for pain control in acute migraine?
- What role does prophylaxis of migraine play?
- How common are headaches due to mydriasis?
- Tension headache is too commonly diagnosed by the algorithm. Do we need another classification title since this row includes headache associated with malaria, etc.? Simple headache or tension or fever-related headache?
- Which headaches can be ignored without further assessment (for example if patient has no fever; is alert and ambulatory; headache is not the chief complaint)?

12.4 Clinical signs and symptoms of cryptococcal meningitis:

- What should be the threshold for duration of headache (is 2 weeks appropriate)?
- Should there be additional criteria?
- How adequate is case detection by its current method of inclusion in the acute care algorithm?

12.5 Is the differentiation of cognitive problems and mental illness functional?

12.6 Management of dementia and delirium.

- How common is this, related to HIV and related to other causes?
- Is the differentiation from delirium functional?
- Will this reduce referral and assist the family?

12.7 Sinusitis

- Is case detection adequate?
- When should antibiotics be used in HIV-positive patients?

13. *Mental illness*

13.1 Country adaptation of the depression screening and classification questions is a key need. Review of prior work, simplification then trials in several countries related to initial studies and fieldtesting should lead to a short study protocol, used routinely as part of country adaptation.

13.2 Should the initial dose of antidepressants be lowered in symptomatic HIV patients?

13.3 What training is required to provide adequate capacity of first-level facility health workers to manage major depression and suicide risk.

13.4 Should physical symptoms be added to the signs of anxiety (palpitations, hyperventilation, sweating, etc.)?

13.5 Role of health workers in counselling and non-pharmaceutical anxiety interventions (slow breathing, progressive relaxation):

- How much counseling can we prepare this health worker to do with limited training? What are their innate skills in this?
- How effectively can they teach slow breathing?
- Progressive relaxation?

13.6 Should HIV mania be included in the generic or as an adaptation?

- How common is this?
- How important a contributor is this to HIV transmission?

13.7 Should hysteria be included (by adding it to the Quick Check)? Or should it be an adaptation?

13.8 Chronic care of depression and psychosis.

- For continuing care of patients with psychosis, is there relevant experience using first-level facility multipurpose health workers to give fluphenazine injections?

14. *Routine screening, prophylaxis and preventive interventions*

14.1 What should be added or deleted from the generic list?

14.2 Brief interventions for smoking cessation:

- Effectiveness in low resource settings with lower knowledge of health risks (brief interventions by health workers may have more impact than in settings where knowledge of risk is widespread).
Almost all of the trials of smoking cessation interventions have been carried out in the context of fair public knowledge on the health damage from tobacco use, extensive publicity in the mass media, actions against smoking in the workplace, and additional specific campaigns aimed at special groups to promote smoking cessation. It is possible that education on the harmful effects of tobacco use and firm advice against smoking in some developing country settings could have a greater impact (since the information may be new for some or not previously delivered through the health care system) or could have less impact (because it is not reinforced by other interventions).
- Will counselling on cessation be effective/ accepted by health workers who smoke?
- What are efficient ways to include in smoking cessation into busy primary care settings (such as a simple warning if time is very limited).

14.3 Brief interventions for hazardous alcohol use

- Can health workers deliver these effectively in areas with high alcohol use and where health workers also commonly drink?
- Is the sensitivity for detection of hazardous alcohol use on the mental problems page adequate?

14.4 Cancer

- For which cancers can we cost-effectively teach patient to report early signs, health workers to respond and refer, and the referral hospital to provide curative treatment?
- When should they be incorporated into routine screening? (Likely candidates are breast, cervix (direct visualization), colorectal, skin and oral cancer.)

15. Adolescent interventions

15.1 How well will the adolescent job aid augment efforts to create adolescent-friendly health centers and increase use of clinical services?

15.2 Adolescent preventive interventions (which appear in both the Adolescent Job Aid and Acute Care module)

- What are the highest priority interventions for all adolescents; for adolescent girls?
- Should interventions against intergenerational sex be included? What role should the health worker play?

16. HIV Care

16.1 The guidelines emphasize treatment of complications in the relatively immune competent. The guidelines assume that much of the initial, acute management is the same as for HIV negative patients. Does this work?

16.2 Are the important clinical presentations and management of complications covered in either the Acute Care module, Chronic Care: HIV Care, and/or Palliative Care?

- Are the most common problems which can be managed as an outpatient included? Is the management feasible?
- Are those patients who would benefit from referral referred? Will the rate of referral be too high?
- Loefflers/strongyloidiasis has been reported as an HIV presentation in Haiti. Should this be in the generic or as an adaptation only?
- Is sepsis adequately detected by the draft algorithm?
- Pneumonia—should HIV infection be considered on the first episode? (In the generic or only in the very high prevalence settings?)

16.3 In responding to signs and symptoms associated with HIV infection, is it appropriate to make distinctions between:

- The response to herpes zoster or other signs or conditions that people already associate with HIV/AIDS. The health worker is encouraged to address their worries and to discuss the possibility/likelihood of HIV infection, in the context of offering testing and the possibility of prophylaxis/treatment as available. In some settings, this would include oral candida, TB, persistent diarrhoea, and wasting. These conditions may not be volunteered to the health worker due to stigma (or the patient may not attend clinic).
- The response to illnesses which may be HIV-related but which also occur commonly in HIV-negative patients and which people do not already associate with HIV/AIDS— such as pneumonia (offer testing and introduce the possible association).
- The response to conditions which are not a complication of HIV infection but are associated due to shared risk factors (risky sexual practices)—such as STIs (offer testing; discuss risk, prevention).
- The response to any sexually active adolescent /adult (with or without associated signs or symptoms) where VCT, condom use, counselling on safer sex, family planning etc should be offered. The HIV testing for this could be off-site.

16.4 Are the nutrition recommendations for HIV patients adequate?

16.5 Does the 7-step process for routine follow-up of patients with HIV infection in clinic address the major concerns efficiently?

16.6 Should the Uganda TASO model of initial reception by a counselor be retained in the generic?

16.7 What follow-up should be recommended when patients refuse HIV testing who have signs which are likely HIV-related?

16.8 Feasibility studies of the HIV Care module as a whole are needed.

- Phase I: train nurse, situate in busy district clinic actively providing HIV care; ARV treatment to be added in near future (in a setting with ready availability of consultation and supervision of care).
- Phase II: health centres in good communication with experienced district clinicians

16.9 Is detection of problems in cognitive function adequate?

16.10 Are there additional or other recommendations for prevention which should be in the generic guidelines?

16.11 Are there additional or other recommendations for psychosocial support which should be in the generic guidelines?

17. Tuberculosis

17.1 Case detection

- Adequacy of detection of pulmonary and extra-pulmonary TB
- 2 versus 3 weeks of cough? How to guide choice during country adaptation?

17.2 In patients with TB who do not cough, is the broader range of signs sufficient? What increase in sensitivity in case detection in HIV patients will this provide?

17.3 When should sputums be requested if cough with sputum production is not present?

17.4 Is the association of TB and HIV impairing case detection (by deliberate underreporting of cough or its duration)? How can this be countered (for example, Zambia has printed posters with somewhat obese patients with TB; by placing emphasis on investigating both reported and observed cough).

17.5 Inclusion of INH prophylaxis for HIV positive patients should only occur where DOT is running well.

- Should INH prophylaxis be in the generic guidelines or an adaptation?
- What is the most functional duration to include in the criteria for INH treatment “Not on TB treatment or INH prophylaxis within ... months?”

17.6 Should a linkage be added to the TB module to deal with more systematically with:

- Depression in TB patients, when the diagnosis has become associated with HIV infection? This could be a significant contributor to poor adherence.
- Peripheral neuropathy in populations with high HIV prevalence, given how common the problem is?

18. Chronic care: general principles

18.1 Are there proven approaches in low resource settings for:

- training patients in self-management
- integrating information-motivation-behavioural skills into patient interactions
- use of group appointments/teaching
- use of trained laypersons or expert patients for patients with the same chronic conditions?

18.2 Can a consistent treatment plan format be developed?

18.3 What are the best delivery models for chronic care in rural and urban settings in low resource countries?

18.4 Feasibility studies are needed first teaching the general principles of chronic care, using 1 to 2 chronic diseases as examples. Then (in 6-8 months) incorporating 1 or 2 other diseases. Evaluate the efficiencies of the approach; the ability to apply the same general principles of care, etc.

For adherence – see the adherence research agenda

19. Chronic care: asthma and COPD

Exercise:

- Is there sufficient evidence to recommend health worker education on exercise at home?
- How should this relate to the recommendations for exercise in all older or sedentary adults and in those with diabetes mellitus or hypertension?

See PAL research agenda.

20. Chronic care: epilepsy

20.1 Given the large treatment gap, should first-level facility health workers in some countries be allowed to initiate treatment in certain patients with epilepsy?

The generic guidelines assume that a treatment plan will be made at the district hospital and the first-level facility health worker would only monitor/adjust the phenobarbital doses. Should initiation of treatment be a possible country adaptation or included in the generic guidelines (for example, begin phenobarbital for adults with recurrent, generalized, spontaneous seizures with no aura and no other medical illness)? This could be done with the stipulation if they do not improve on treatment or continue to have seizures or develop any new symptoms, that they be referred.

20.2 In low resource settings, which patients can be started on antiepileptic medication without an EEG?

21. Chronic care: secondary prophylaxis of rheumatic fever/rheumatic heart disease

21.1 What proportion of patients stay on prophylaxis currently?

21.2 What is the experience using a patient card at first-level to keep track of patients?

21.3 What are the minimal essential symptoms to check when administering monthly benzathine penicillin?

Technical questions related to hypertension, diabetes mellitus, physical inactivity and diet are pending development of these guidelines.

22. Palliative care

22.1 Should the title be changed, given that many consider palliative care to be only terminal care? For example, Home-Based Care-Symptom Management and Terminal Care.

22.2 How can terminal care be a vehicle for preventive messages, for the rest of family or neighbours?

22.3 How can palliative care with good support lead to disclosure of HIV status? (Use South Coast Hospice experience).

22.4 Pain management-analgesic ladder

- Should the current pain guidelines be relabeled “Chronic” and a separate section on acute pain be added? What distinctions are essential between the management of chronic and acute pain?
- Should morphine be limited to chronic pain, acute pain complicating opportunistic infections in HIV/AIDS or extreme acute pain in non-ambulatory patients? Morphine is also of importance in sickle cell crises.
- What should be the requirements for oral morphine use in non-terminal patients and in acute pain? Its use is problematic in for back pain and other conditions in ambulatory patients.
- Should step II be skipped in HIV patients (cost considerations, better fit for acute pain complicating OI)?
- Is there a need to document the safety of oral morphine administration at home, following the guidelines?
- What is the importance and the feasibility of subcutaneous morphine for use by the health worker?

22.5 Should the caution against aspirin use be only in Stage III or IV HIV or all? Some have never seen a problem. Others (usually hospital-based clinicians) are familiar with thrombocytopenia and bone marrow failure.

22.6 Given that the multipurpose first-level facility health worker will be trained by the IMPAC ECPG to use magnesium sulphate for eclampsia and has a limited armamentarium of drugs, would it be advisable to mention the use of very slow IV magnesium sulphate as an alternative for severe, shooting pains, with relatively little pain in between?

22.7 Are the guidelines also applicable for the home care of children?

22.8 Family Education Booklet:

- Is a well designed and adapted booklet an effective aid to teach skills to both community volunteers, directly to family members, and via the community volunteers to family members?
- What is required for country adaptation and pretesting, to assure that it is an effective tool?

22.9 Is it feasible and sustainable to implement the Palliative Care guidelines through first-level facilities?

- What are the logistical and staffing requirements for government first-level facilities to provide clinical back-up to home-based palliative care?
- Is it essential to have a palliative care nurse specialist on the district or subdistrict team?
- What are the communication and transport requirements?
- What methods are most effective and efficient to train health workers to provide the care and education included in the Palliative Care module?

22.10 How (and by whom) should decisions be taken on the terminal nature of an illness, since this changes referral and other aspects of patient management? This can be a difficult clinical decision in an HIV/AIDS patient.

22.11 Using an established DSS site, determine the effectiveness of implementing palliative care (based on first-level facility health workers trained in the Palliative Care guidelines and a district palliative care nurse specialists, providing back-up to home-based care by family and community carers) by measuring the proportion of households with patients with inadequately controlled pain and other indices of effective symptom management and terminal care, before and after implementation.

23. Country adaptation of the IMAI guidelines

23.1 Conditions which are now only in the adaptation guide: should any of the following be in the generic? (What is their burden of disease, cost-effectiveness and feasibility of interventions delivered at a first-level facility?)

- Gastritis and the management *Helicobacter ducreyi* treatment where there are very high rates of infection. When to empirically treat and with what regimen?
- Rectal problems:
 - pinworm
 - prolapse
 - haemorrhoids
 - abscess/fissures
- Low back pain
- Arthritis
- Injecting drug use (now in adaptation guide; mentioned in HIV module)
- Ischemic heart disease (beyond emergency management in the Quick Check)
- Schistosomiasis
- Deworming for wheezing
- Deworming in chronic HIV care

23.2 How can an approach to country adaptation best be developed which allows flexibility in district choice amongst modules and, for chronic care, a menu of chronic care interventions? How can this be based on their own burden of disease?

23.3 Can simple additions allow the acute care algorithm to be used for surveillance of reportable diseases?

23.4 Should drug interactions and warnings on prior drug sensitization be developed as a possible country adaptation, or should this be added to the generic?

Annex 4

WHO departments and special programmes involved in IMAI:

Child and Adolescent Health and Development (FCH/CAH)
Communicable Disease Control, Prevention and Eradication (CDS/CPE)
Communicable Disease Surveillance and Response (CDS/CSR)
Cooperation and Communication (SDE/CCO)
Cross Cluster Surveillance (NCD/CCS)
Essential Drugs and Medicines Policy (HTP/EDM)
Evidence for Health Policy (EIP/GPE)
Gender and Women's Health (FCH/GWH)
Health Service Provision (EIP/OSD)
HIV/AIDS (FCH/HIV)
Injuries and Violence Prevention (NMH/VIP)
Management of Noncommunicable Diseases (NMH/MNC)
Mental Health and Substance Dependence (NMH/MSD)
Noncommunicable Disease Prevention and Health Promotion (NMH/NPH)
Nutrition for Health and Development (SDE/NHD)
Reproductive Health and Research (FCH/RHR)
Research and Training in Tropical Diseases (CDS/TDR)
Roll Back Malaria (CDS/RBM)
Stop TB (CDS/STB)
Tobacco Free Initiative (NMH/TFI)
Vaccines and Biologicals (HTP/VAB)

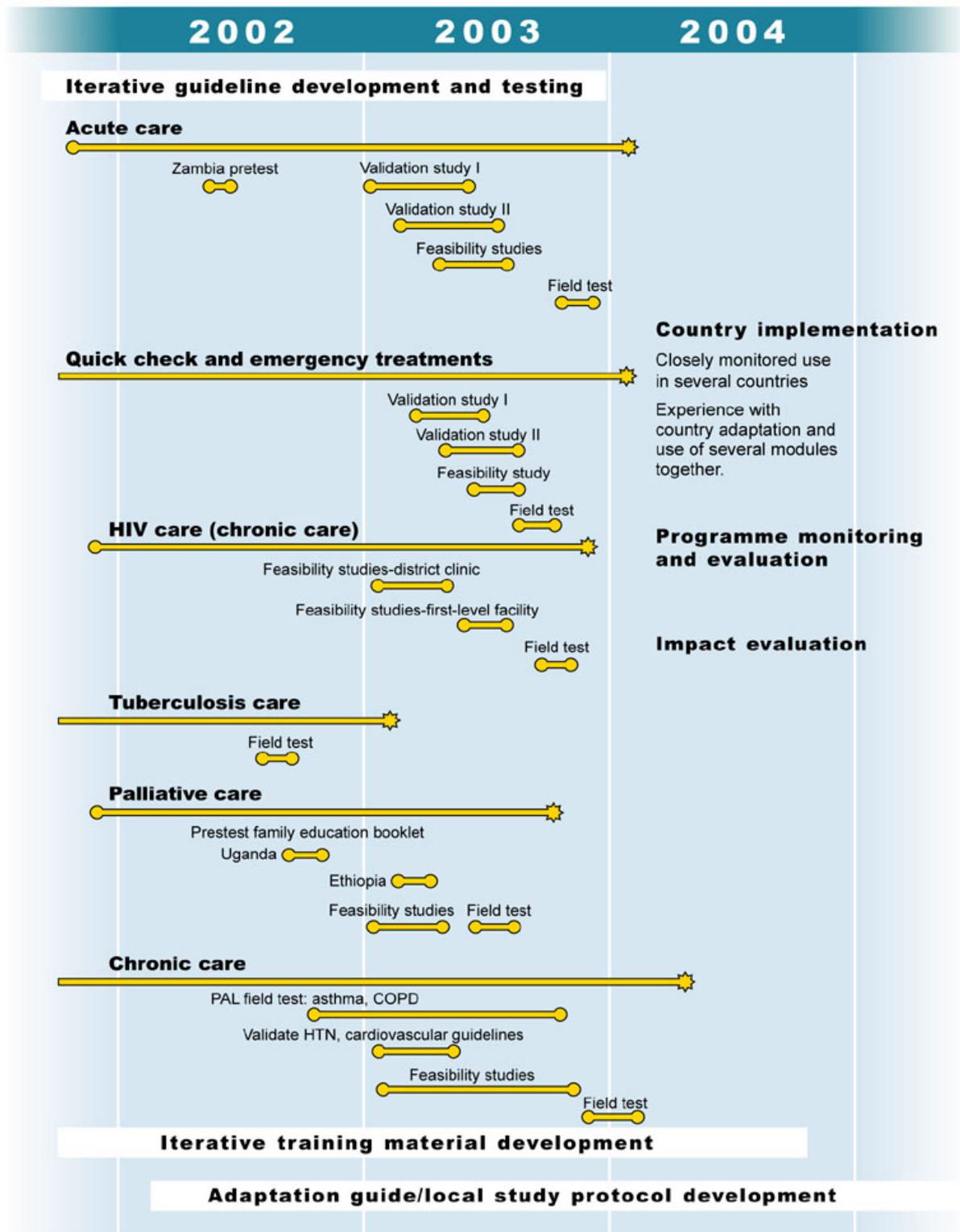
WHO Regional Office for Africa

IMAI Collaborating Partners (November 2002)

- Biomedical Research and Training Institute, Harare, Zimbabwe
- Centers for Disease Control and Prevention, Atlanta, USA
- Columbia University, (MTCT+ Project), New York, USA
- Harvard Medical School, USA
- Hospice Uganda
- International Clinical Epidemiology Network (INCLIN)
- Kenya Medical Research Institute (KEMRI), Kenya
- KwaZulu Natal Africa Centre for Population Studies and Reproductive Health, South Africa
- Liverpool School of Tropical Medicine, UK
- London School of Hygiene and Tropical Medicine, UK
- Macfarlane Burnet Institute for Medical Research and Public Health, Australia
- Médecins sans Frontières
- Ministry of Health, Uganda
- Ministry of Health, Zambia
- National Institute for Medical Research, (Tanzania Essential Health Intervention Project), Dar es Salaam, Tanzania
- Nuffield Institute of Health, University of Leeds, UK
- Rockefeller Foundation
- University of California San Francisco, USA
- University of Washington, USA
- University of Harare, Zimbabwe
- Wellcome Trust

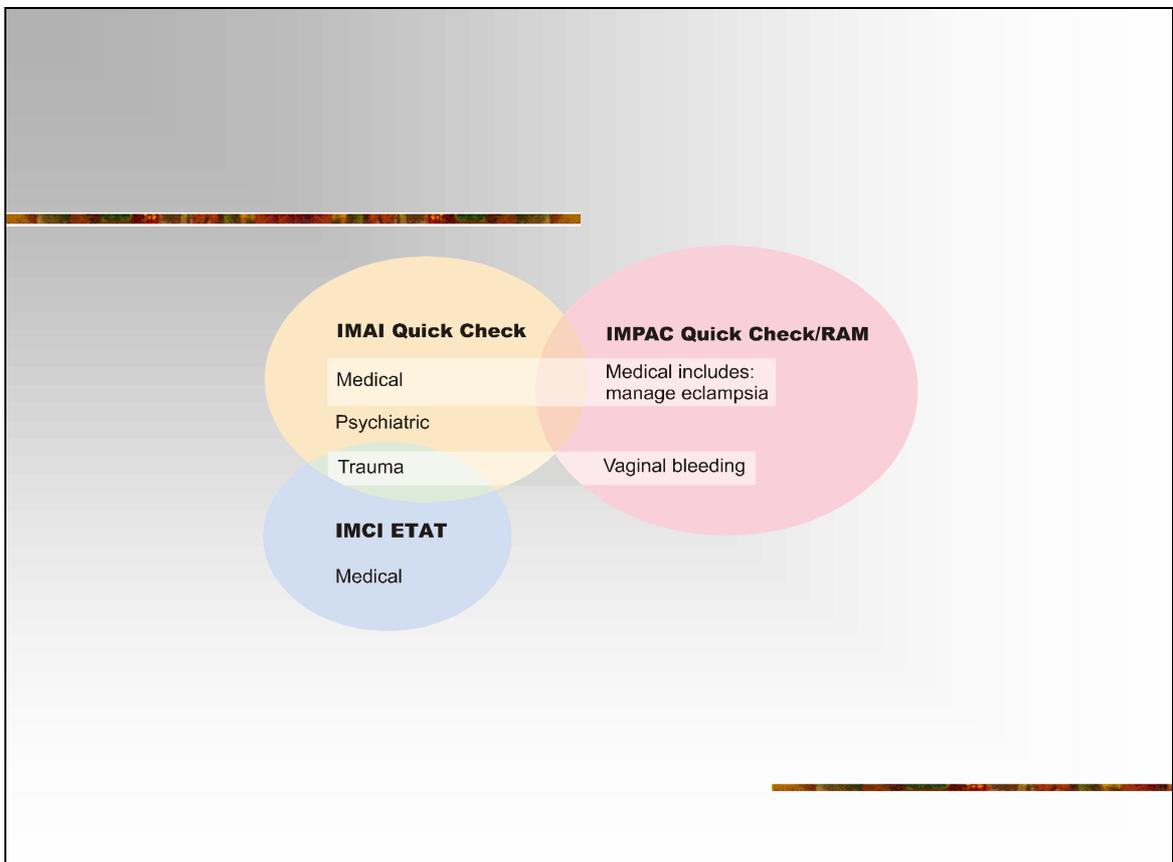
Annex 5

IMAI PROVISIONAL TIMELINE



★ Ready for use in selected countries with close monitoring

Integrated Emergency Care



For further information, please contact:

World Health Organization
Dr Sandy Gove, IMAI Technical Coordinator
1211 Geneva 27, Switzerland
Fax (+41) 22 791 4777