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EVALUATION OF THE GUIDELINE FOR INTEGRATED MANAGEMENT OF ADULT AND ADOLESCENT ILLNESS ON HIV PATIENTS IN ADDIS ABABA

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Acronyms

IMAI Integrated Management of Adolescent and Adult Illness

WHO World Health Organization

HIV Human immunodeficiency virus

ART Antiretroviral therapy

ARV Antiretroviral

IMCI Integrated Management of childhood illness

TB Tuberculosis

AIDS Acquired immunodeficiency syndrome

AAU Addis Ababa University

MOH Ministry of Health

FHI Family Health International

HRH Human resources for health

SUMMARY

Back ground:-Acute Care module is one of Integrated Management of Adult and Adolescent illnesses(IMAI) modules relevant for HIV care which are interim guidelines released for country adaptation and use to help with the emergency scale-up of antiretroviral therapy (ART) in resource-limited settings.

The module covers disease classifications and treatments for the care of acute illness such as pneumonia, diarrhea, fever and sexually transmitted infections in adolescents and adults.

Ethiopia is one of the first countries to adapt and apply the guide lines, however, no study to assess the validity of the guide line in identifying the problem of patients and in leading to appropriate management decision is performed.

Objective: - To assess The performance of Acute Care guideline for IMAI against the etiologic and / or clinical approach.

Methods:- The study applied a health center based Cross-sectional study design where by patients seen by nurses who use acute care guideline in one room will be seen by physicians using the etiologic and\or clinical approach in another room.

Results: - A total of 648 clients who were eligible for enrolments during the study period were included in the study .63.3% of the clients were females and most 39.5 % were aged 25-34 years. In the study the sensitivities of the guideline for URTI, pneumonia and tuberculosis were found to be 100%, 100%, and 87.5% respectively. The specificity of the guideline for the mentioned disorders was 92.1%, 96.6% and 100% respectively. The positive predictive value was 94.3%, 94.5%, and 100%.And the respective NPV was 100%, 100%, and 99.4%.However, specificity for severity of pneumonia was only 40.4%.

Accordingly in patients with diarrhea the sensitivity, specificity, PPV and NPV of the guideline for dysentery were 92.5%, 100%, 100%, and 96.6% respectively.

The sensitivities were 78.3% and 75.8%, specificities were 83.6% and 42.9%, and positive predictive values were 60.0% and 41.0% for the diagnosis of sever and some dehydration, respectively.

Using the guideline sixty percent of the patients with acute pneumonia were treated with oral anti biotic and IM antibiotics were given to 29.3% of them. However the physicians decided to treat 3 patients identified as sever pneumonia cases using the guideline with IM antibiotics and only 26.7 of acute pneumonia cases were treated with IM antibiotics.

Most patients diagnosed as dysentery were treated with oral antibiotics both by the physicians and the health workers using the guideline, though 5.4% of them were sent to home only with ORS and advise on additional fluid intake by the group using the guideline.

Conclusion & Recommendation:-

The findings of the study suggested that syndromic management of the mentioned diseases at the health center level is possible. However, the performance of the guideline was very poor regarding level of severity in pneumonia, anemia and dehydration. Therefore the tested guideline needs further modifications with emphasis on its ability in delineating the level of severity.

1. INTRODUCTIO N

1.1 Back ground

Ethiopia's HIV/AIDS epidemic is classified as "generalized" and continues to impact every sector of society. In 2005, the fitted national HIV prevalence was 3.5 %. Accordingly a total of 1 320 000 (590 000 males and 730 000 females) persons were living with HIV/AIDS and there were a total of 137 499 new cases. Addis Ababa's HIV prevalence estimate for 2005 is 11.7 %. Due to the relatively large population size and high HIV prevalence rate Addis Ababa accounted for 30 % of PLWHA, and 29 % of new infection living in Ethiopia in 2005 (1).

HIV/AIDS is currently the leading infectious cause of death among adults worldwide. In Ethiopia adult death due to AIDS progressively increased up to 2005 when they accounted for 35% of young adult deaths. The cumulative number of AIDS deaths was 1 267 000 by 2005 and projected to reach 1.9 million by 2010 if present trend continues (1).

Integrated Management of Adolescent and Adult Illness (IMAI) 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) (2).

IMAI extends the integrated management of the most common clinical conditions to the relatively neglected adolescent and adult groups, including the elderly. It responds to the need for more and better health care in these age groups resulting from the increasing burden of disease due to the high prevalence of HIV/AIDS in many developing countries. It is designed to better meet the health care needs of adolescents and adults, through improved case management, disease prevention and health promotion (3).

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. The clinical guidelines have been simplified and systematized so that they can be used by nurses, clinical aids and other multi-purpose health workers.

The guidelines are aimed at first-level facility health workers and lay providers in low resource settings (1).

Acute Care module is one of IMAI modules relevant for HIV care which are interim guidelines released for country adaptation and use to help with the emergency scale-up of antiretroviral therapy (ART) in resource-limited settings. It presents a syndromic approach to the most common adult illnesses including most

opportunistic infections. The module covers disease classifications and treatments for the care of acute illness such as pneumonia, diarrhea, fever and sexually transmitted infections in adolescents and adults (4).

The algorithm 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, counseling, and preventive interventions.

Instructions are provided so the health worker knows which patients can be managed at the first-level facility, and which require referral to the district hospital or further assessment by a more senior clinician. Preparing first-level facility health workers to treat the common, less-severe opportunistic infections will allow them to stabilize many clinical stage 3 and 4 patients prior to ARV therapy without referral to the district (2).

1.2 Rationale of the study

Primary healthcare facilities in developing countries face several constraints in relation to optimal management of patients with these problems. These constraints include limited access to laboratory technology necessary for etiological diagnoses, shortage of trained staff resulting in high workloads and, therefore, limited staff time available per patient. The World Health Organization (WHO) has advocated a simpler and more cost-effective method for detection and management of these cases through a syndromic approach.

Ethiopia is one of the first countries to adapt and apply the guide lines, hoping that it will be an important input in the current effort to massively scale up care and support to people living with HIV/AIDS(4).

There are encouraging results from a pre-test of the draft IMAI acute care algorithm by IMCI-trained nurses (2). However, little is known about the validation of IMAI acute care guide line. Hence this study tries to provide base line data in the validation of the guide line.

2. LITERATURE REVIEW

HIV/AIDS is currently the leading infectious cause of death among adults worldwide. By the end of 2004, approximately 40 million people were infected with HIV and 25 million people had died from AIDS-related complications (2). If current trend continues, the national intelligence council (NIC) estimates that just in five countries (India, china, Nigeria, Ethiopia and Russia) up to 75 million people will be infected by 2010(5).

Ethiopia's HIV/AIDS epidemic is classified as "generalized" and continues to impact every sector of society. In 2005, the fitted national HIV prevalence was 3.5 %(10.5% for urban and 1.9% for rural). The combined HIV prevalence for the country revealed a stabilizing trend with the number of people newly infected and dying being almost equal. Based on these estimates a total of 1 320 000 (590 000 males and 730 000 females) persons were living with HIV/AIDS and there were a total of 137 499 new cases in the year 2005. Addis Ababa's HIV prevalence estimate for 2005 is 11.7 %. Due to the relatively large population size and high HIV prevalence rate Addis Ababa accounted for 30% of PLWHA, and 29% of new infection living in Ethiopia in 2005 (1).

Table 1. HIV related figures of Addis Ababa and Ethiopia by the year 2005.

	Addis Ababa	Ethiopia

Adult prevalence	11.7	3.5
Adult Incidence	1.4	0.26
HIV positive pregnancies	7 995	105 675
HIV positive births	1 920	30 338
Needing ART	45 753	277 757
AIDS orphans	109 130	744 088
PLWHA	207 207	1 319 395
New HIV infection	20 904	128 922
New AIDS cases	22 394	137 499
Annual AIDS deaths	23 045	134 450

The U.S. Census Bureau estimates that life expectancy in Ethiopia will decline to about 42 years due to AIDS by 2010; without AIDS, life expectancy would be 55 years(6). In 2005 it is estimated that there were 134 450 AIDS deaths in the country. HIV /AIDS accounted for about 32% of estimated 141 000 total TB cases in 2005. Adult death due to AIDS progressively increased up to 2005 when they accounted for 35% of young adult deaths. The cumulative number of AIDS deaths were 1 267 000 by 2005 and projected to reach 1.9 million by 2010 if present trend continues (1).

The number of adults AIDS deaths in urban Ethiopia is estimated to have been larger than that in rural Ethiopia until 2005 but was projected to be higher in rural Ethiopia from 2006 onwards due to greater availability of ART in urban areas.

It was also estimated that there were a total of 4 885 337 orphans aged 0-17 years of which 744 100 were AIDS orphans .And the total number of AIDS orphans in Ethiopia is projected to increase until 2010 although the rate is expected to lessen due to the impact of the planed ART services (1).

A total of 277 757 persons including 213 306 (76.8%) adults in the age group 15-49 years and 43 055 (15.5%) children in the age of 0-14 years were requiring ART in 2005. Estimations and projections show that the total number of people requiring ART will increase by around 73 000 in 2010 from its level in 2005 (1).

On December 2003, when pilot projects had shown the feasibility of antiretroviral therapy (ART) in the poorest regions of the world, and the prices of antiretroviral drugs had steeply decreased, the World Health Organization (WHO) launched its ‘3 by 5’ initiative, aiming to provide ART to 3 million people by the end of 2005 (7).

In January 2005 the government of Ethiopia launched the “Accelerating access to HIV/AIDS treatment in Ethiopia road map 2004-2006”.The plan aims to provide universal access to ART for all AIDS patients by the year 2008 . According to the road map the plan was to enroll 100 000 patients by the end of 2006 (8).

However by the end of July 2006, 45 595 patients had ever started on ART at 132 facilities across the country and of this 35 460 are on treatment currently .In Addis Ababa there were 32 ART sites and 10 012 ever started on ART and 10 441 currently on ART. If universal access to ART achieved the national HIV prevalence will slightly increase from 2.8 % without ART to 3.1% with ART in 2010. There will be 41% fewer AIDS deaths compares to the projection with out ART program. Also estimated number AIDS orphans could be 13% lower with universal ART access by 2010 (1).

Although the overall prevalence in Ethiopia is low because of the large population the absolute number of persons infected with HIV and affected by HIV is significant. Universal provision of prevention, care and treatment to the estimated 1.32 million PLWHA and AIDS orphans poses substantial challenges to the public health system of one of the poorest countries in the world (1).

The lack of human resources for health (HRH), particularly in sub-Saharan Africa, has been identified as the main constraint for scaling-up ART (9, 10). The challenge is to combine the urgent measures for rapidly increasing the number of HRH available for scaling-up ART, without negatively affecting the rest of the health care provision, with strategies to secure a sufficient long-term supply of HRH (11). One of these, the WHO’s Integrated Management of Adult and Adolescent Illness (IMAI) model has designed simplified ART protocols to make it feasible to delegate a number of tasks from medical doctors to nurses and from nurses to community health workers (12).

The WHO IMAI guidelines are for the first level health workers in health centers and outpatient departments in sub Saharan Africa, They include: acute care booklet which is a simplified diagnosis and treatment guideline. The guideline helps in making a syndromic diagnosis (with limited laboratory tests), identifies the signs and symptoms suggesting that urgent referral is required, and/or the treatment and advice to give. The guideline also helps identify the conditions which are likely to be HIV-related and so who should be recommended to have an HIV test (4).

Primary health care facilities in developing countries and other resource-poor settings face several constraints to the optimal management of patients. These constraints include: Lack of access to the laboratory technology necessary for making etiologic diagnoses and Shortages of well-trained staff. Thus, syndromic approach is well suited to resource-poor settings and enables health-care workers to make a diagnosis within a short time without special skills and sophisticated laboratory tests (13).

However, there are number of concerns about the use of the syndromic approach. Some of the most common criticisms of the approach raised by clinicians include ,

1. It does not use a service provider's clinical skills and experience like the clinical approach does.
2. The approach does not seem scientific enough.
3. It is better to treat the client for the most common cause first, and then to treat the client for a second cause only if the client's symptoms do not improve.
4. The syndromic approach wastes money: It requires us to waste a lot of drugs by treating clients for infections they may not have. And
5. Fear for increased potential for antibiotic resistance with this approach (14).

The IMAI acute care booklet follows the format of the Integrated Management of Childhood Illness (IMCI) guidelines which has already been implemented in over 100 countries. The validation study conducted in Brazil and Malawi showed that IMCI 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 pediatricians on priority signs and classifications (15).

According to a study conducted in Siaya District Hospital in western Kenya; The sensitivities and specificities for classification of illness by the health worker using the

IMCI algorithm compared to diagnosis by the physician were: pneumonia (97% sensitivity, 49% specificity); dehydration in children with diarrhea (51%, 98%); malaria (100%, 0%); ear problem (98%, 2%); nutritional status (96%, 66%); and need for referral (42%, 94%). Detection of fever by laying a hand on the forehead was both sensitive and specific (91%, 77%) (16).

A report from a study in Western Uganda showed that Medical assistants had some difficulty in completing the IMCI assessment, leading to incorrect classification of findings (13%). The findings of this study indicated that use of IMCI guidelines would substantially reduce the number of children referred to hospital from an outpatient facility (17).

Results of validation exercise on the flowchart without speculum examination for RTI showed 100% sensitivity in detecting infections caused by bacterial vaginosis, candidiasis, or trichomoniasis with 52% positive predictive value and indeterminate specificity. The flowchart with speculum examination for RTI was 100% sensitive with indeterminate specificity for diagnosis of bacterial vaginosis or trichomoniasis, but the

positive predictive value was 24.8%. For candidiasis, the flowcharts had sensitivity and specificity of 64.4% and 49.4% respectively and positive and negative predictive values of 37.4% and 74.5%, respectively. The flowcharts had a sensitivity of 37.7% for cervicitis (cervical infection with N. gonorrhoeae and/or C. trachomatis) with a positive predictive value of 4%. The specificity of the flowchart for cervical infection was 63.9% with the negative predictive value of 96.2% (18).

3. OBJECTIVES

3.1 General Objective

To assess the performance of Acute Care guideline for Integrated Management of Adult and Adolescent illnesses against the etiologic and / or clinical approach.

3.2 Specific Objectives

- To calculate sensitivity, specificity, and predictive values of the integrated management guideline in accordance with expert clinician decision.
- To compare management decisions reached by using the guideline and etiologic and /or clinical approach.
- To provide relevant recommendations based on findings

4. METHODOLOGY

4.1 Study Setting

This study was conducted in three governmental health centers in Addis Ababa town between March and May 2006. These are:-Arada, Kazanchise, and wereda 19 health centers. The health centers were selected based on the information obtained from the regional health bureau and WHO country office. The criteria used for identifying the health centers was the presence of IMAI trained nurses and well established ART unit.

4.2 Study design

A Health center based, Cross-sectional study design was used. Patients were evaluated by IMAI trained multipurpose nurses and by physicians using the etiologic and\or clinical approach in two different rooms. The sign symptoms of the patients, the diagnosis made, and the management decision of personnel's in the two rooms was recorded on Patient card and standard format.

4.3 Study population

4.3.1 Source population

Patients aged more than 15 years seeking services at designed units in the study health centers for cough, pallor, white or red patches in the mouth, diarrhea, and skin problems during the study period were used as source population.

4.3.2 Sample size

The sample size was calculated for a binomial proportion using the formula

$$N=Z^2 \times P(1-P) / d^2,$$

Where;

Z score is 1.96 for the confidence level 95%

P=Expected sensitivity of the flowchart:

D=Desired precision of this expected proportion

And the finding was multiplied by the prevalence of the disease in the groups to which the guideline will be applied in order to find the minimum sample size required.

According to the results of a study conducted in Addis Ababa the prevalence rate of pneumonia in HIV patients with cough was about 25 % (17).And because we couldn't find study results on the prevalence of other illnesses included in the study 50 % was used. For validation of the guideline we expected a sensitivity of 70 % with a 10 % precision (range of sensitivity from 60 % to 80 %).

Hence,

$$N = \frac{(1.96)^2 \times 0.7 \times (1-0.7)}{0.1^2} = 80.7, \text{ or 81 infections.}$$

Therefore, the minimum sample size needed to test validity of the guideline in the detection of pneumonia and other diseases included in the guideline was 324 and 162 respectively.

4.3.3. Sampling procedure

Proportional allocation was used to determine the number of clients to be enrolled in the study from each health center. The symptoms considered as inclusion criteria were cough, pallor, white or red patches in the mouth, diarrhea, and skin problems. Patients with the above mentioned complaint were selected after registration, in order of arrival at the study health centers.

In evaluating the guide line, the study explored its validity in the detection of URTI, pneumonia, and tuberculosis in clients with cough. In patients with diarrhea the study explored the validity of the guideline in the identification of dehydration and dysentery .The validity of the guide line in the detection of anemia, esophageal and oral thrush, and skin diseases were also explored in clients with pallor, patches in the mouth, and skin problems respectively.

4.4 Data Collection Procedures

4.4.1 Data-collection instruments

The data-collection instruments included standard clinical record-keeping sheets, patient cards, an interview questionnaire and check lists (appendix 9.2-9.5). The trained nurses completed the clinical record-keeping sheets and the physicians used the patient cards. The information recorded in the clinical record-keeping sheets and in patient cards included detailed clinical history, findings of physical examinations, diagnosis and treatments.

The interview questionnaire contained structured questions. Information collected during these interviews included: sociodemographic characteristics (age, religion, civil status, education, monthly household expenditure, and occupation) of the clients.

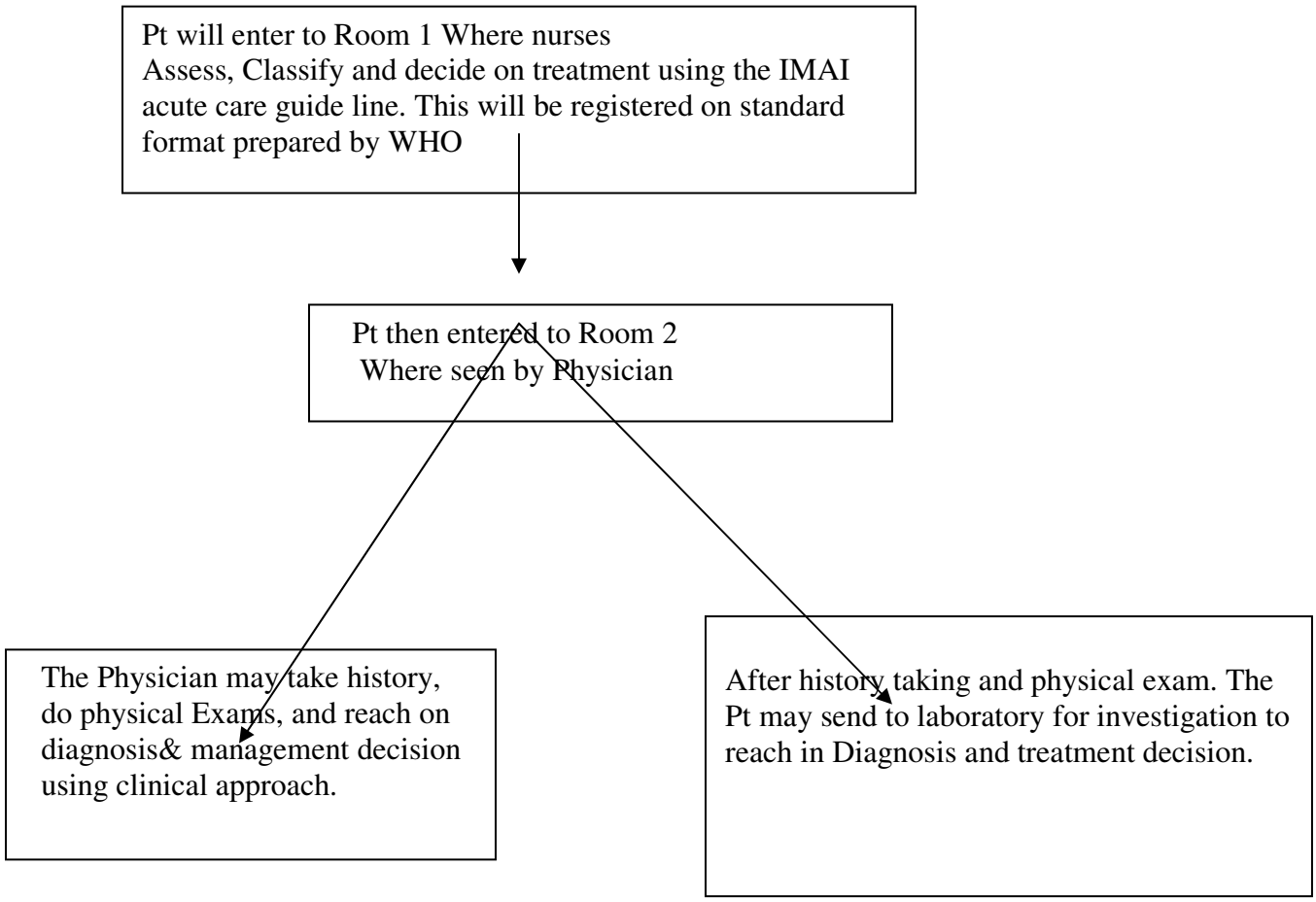
Trained data collectors /nurses/ collected important information on the variables from the standard format filled by personnel using IMAI acute care guideline and patient's card filled by the physician using the prepared check list. The patients were also interviewed by the data collectors concerning their sociodemographic characteristics.

4.4.2 Data Collection Procedures

Each enrolled patient was seen by two health personnel at different rooms. First Patients were evaluated by personnel in the health centers who took training on the implementation of the IMAI Acute care guide line. Here, the health care personnel took history, made physical examination, and reached on diagnosis and management decision using the flow chart indicated on the guideline (appendix 9.1). And this was recorded using a standard recording format.

The patients then saw a physician who, after examination, Order appropriate laboratory tests and reach on diagnosis and prescribe treatment based on the identified etiology or the physician's clinical judgment.

Figure 1 .Diagram showing data collection procedure



N .B. The study Subjects were seen by physician in room 2 only for the purpose of the study. Both the diagnosis and treatment decision won't interfere the decision of the personnel working in room 1.

4.4.3 Variables &Definition of terms

Variables

Patient's socio demographic characteristics (age, sex, occupation, etc)

Symptoms presented by the patient

Signs observed by health personnel

Diagnosis by personnel using WHO guideline

Diagnosis by physician

Measure taken; treatment

Referral or admission

Definition of terms

Etiological diagnosis**:** using laboratory tests to identify the causative agent

Clinical diagnosis**:** using clinical experience to identify the symptoms typical for a specific disease.

A flow-chart**;** is a diagrammatic map which guides you through a series of decisions and actions you need to make. Each decision or action is enclosed in a box, with one or two routes leading out of it to another box, with another decision or action.

Sign(s): An indication of the existence of disease or any objective evidence of a disease as is perceptible to the examining healthcare provider.

Symptom(s): Any subjective evidence or perception of disease or of a patient's condition.

Syndromic case management: The management of a patient whereby a syndrome (consistent group of symptoms and easily recognized signs) is used as a basis for the treatment of the causative organisms.

4.4.4 Data processing & analysis Procedure

Collected data were cleared, edited, entered to computer, and after the different diagnosis and management decision made for the corresponding symptoms is identified using SPSS version 11. Specificity, sensitivity, positive predictive value, and negative predictive values were calculated using EPI info version 6.0 by taking the decisions made through the etiologic or clinical approach as a gold standard.

The following standard formulas were used for this analysis:

Sensitivity =P (T+/D+) =disease with positive test

All diseased

Specificity =P (T-/D-) =disease free with negative test

All disease free

PVP =P (D+/T+) = disease with positive test

All with positive test

PVN=P (D-/T-) =disease free with negative test

All with negative test

Where, T+ is test positive

D+ is disease positive

T- is test negative

D-is disease negative

**Test refers to the WHO guideline in this context

4.4.5 Data Quality Control

Prior to data collection, several preparatory tasks, such as pre-testing of all data-collection tools, and recruitment and training of data collectors were undertaken. Multipurpose nurses who had 3-5 years of working experience and recent training on the application of the guideline were participated during the study. Also the interviewers had previous experience in administering interviews for research purposes.

Supervisions were made on daily basis. It was ensured that the decisions made by nurses who implement the acute care guideline in the first room were not communicated with the physicians in the next room. And the collected data was cleared, coded and entered to computer every day.

4.5 Ethical Consideration

After explaining the aim of the study, oral and signed written consent was obtained from each study Subject. Ethical clearance and approval was also obtained from department of community health, faculty of medicine, A.A.U. And the necessary permission was obtained from the regional health office and the health centers. Neither any special diagnostic procedures nor any hazardous materials were used in the study.

Data obtained during the study were kept strictly confidential. The data collectors regularly submitted the completed questionnaires to the investigators on the day of each collection. The investigators kept those in a separate place where they only had access to collected information. Clinical and laboratory data were kept

separately in files where medical officers or medical or any laboratory personnel not directly involved in the study had access. The study subjects retained the right to leave the study at any time.

4.6 Dissemination and utilization of Result

The thesis will be submitted to department of community health, AAU as partial fulfillment of masters in public health. The findings will be communicated to WHO, HIV department, IMAI project which produce the guideline, MOH which adopt the guideline, FHI Ethiopia which take part in initiating the program in Addis Ababa Health Centers. Pertinent findings will also be published in scientific journals.

Strength & Limitation of the study

Strength

- Conducted before the guideline is widely applied.
- Can be used as baseline data.

Limitation

- Presence of very limited studies for comparison purpose could be considered as a constraint factor for the study.
- Inability to use gold standard test for comparison.

5. RESULTS

A total of 648 clients who were eligible for enrolment during the study period were included in the study. As shown in Table 2, sociodemographic characteristics of the study population indicated that 410 (63.3%) of the clients were females. Most 256 (39.5%) were aged between 25-34 years followed by the age group 35-44. The large majority, 290 (44.8%) were married and 21.6 percent of them were divorced. Thirty eight percent had education background of above12 grade and 37% of them were with education background of 1-6 grade. Almost three fourth of the study subjects had monthly family income less than 500 birr.

Table 2.Back ground characteristics of the study subjects

characteristics	number	percent
Age		
15-24	146	22.6
25-34	256	39.5
35-44	156	24.1
45-54	80	12.3
55+	10	1.5
Sex		
Male	238	36.7
Female	410	63.3
Education		
1-6 grades	240	37
7-12 grades	162	25
> 12 grade	246	38
Marital status		
Single	102	15.7
Married	290	44.8
Divorced	140	21.6
Widowed	116	17.9
Monthly income		
<500	402	62.1
500-1000	62	9.6
1000-1500	96	14.8
1500-2000	56	8.6
>2000	32	4.9

Table 3 shows that from a total of 324 clients presented with cough or difficulty in breathing, 205 (63.3%) of them were diagnosed as URTI, 104 (32.1%) as acute pneumonia, 8 (2.4%) as sever pneumonia and 7 (2.2%) as R/O tuberculosis using the guide line. However similar diagnoses made by the physicians were 61.7%, 30.6%, 4.0% and 3.7% respectively.

Twenty nine percent of clients presented with pain or difficulty in swallowing were diagnosed as esophageal thrush using the guideline .While 21.2 % of them have got similar diagnosis by the physicians. Eighteen percent of them were diagnosed as tonsillitis using the guide line, where as patients diagnosed as tonsillitis by physicians were 25.9 %. From patients with patches in mouth 64.3% of them were diagnosed as oral thrush using the guideline .Similar diagnosis made by physicians were 68.6% (table 3).

There were 162 clients presented with diarrhea. Dysentery was the diagnosis of 22.8 % and 24.7 % patients using the guideline and by physicians respectively.

Using the guideline, 25% of patients with pallor were identified as sever anemia and 75% as acute anemia. While 41.7% and 58.3% were identified as sever and acute anemia respectively by physicians (table 3).

From the patients visited the health centers for skin problems 58.8% were identified as adverse drug reaction and 41.2% as herpes zoster using the guideline .The respective diagnosis made by physicians were 47.1% as drug reactions 41.2% as herpes zoster and 11.8 % as contact dermatitis.

Table 3. Diagnoses made by using the guideline and by physicians in patients with different syndromes.

Type of diagnosis in syndrome	By Using guideline (%)	By physicians (%)
Cough/difficulty in breathing		
URTI		
Acute Pneumonia	63.3	61.7
Sever Pneumonia	32.1	30.6
Tuberculosis	2.4	4.0
Pain/difficulty in swallowing	2.2	3.7
Esophageal thrush		
Oral thrush		
Patches in mouth	29	21.2
Tonsillitis	18	25.9
Diarrhea		
Dysentery	64.3	68.6
Dehydration		
Pallor	22.8	24.7
Anemia	28.4	27.2
Sever anemia		

	75	58.3
Skin problem	25	41.7
Herpes zoster		
Drug reaction		
Contact dermatitis	41.2	41.2
	58.8	47.1
	--	11.7

As indicated in table 4 ,relative to the diagnosis made by physicians the sensitivities of the guideline for URTI, pneumonia and tuberculosis were found to be 100%, 100%, and 87.5% respectively. The specificity of the guideline for the mentioned disorders was 92.1%, 96.6% and 100% respectively. The positive predictive value was 94.3%, 94.5%, and 100%.And the respective NPV was 100%, 100%, and 99.4%. However, specificity for severity of pneumonia was only 40.4%.

In clients with pain or difficulty of swallowing the sensitivity, specificity, PPV, and NPV of the guideline for esophageal thrush were found to be 100%, 89.6 %, 72 %, and 100 % respectively. And for tonsillitis it was found to have sensitivity, specificity, PPV, and NPV of 68.2 %, 100 %, 100 %, and 90% respectively.

The guideline was 93.8 % sensitive and 100 % specific for oral thrush with PPV and NPV of 100 % and 89.3 % respectively.

Accordingly in patients with diarrhea the sensitivity, specificity, PPV and NPV of the guideline for dysentery were 92.5%, 100%, 100%, and 96.6% respectively.

The sensitivities were 78.3% and 75.8%, specificities were 83.6% and 42.9%, and positive predictive values were 60.0% and 41.0% for the diagnosis of sever and acute dehydration, respectively.

The guideline was found to be 60% sensitive, 100% specific with PPV and NPV of 100% and 77.8% for sever anemia in patients with pallor. It had 100% sensitivity, 60% specificity, 77.8% PPV, and 100% NPV for acute anemia.

It is found that the guideline was with sensitivity of 100%,100% 0%, specificity of 77.8%,100%,100% , PPV of 80%,100%, undetermined , and NPV of 100%,100%,88.2% for drug reaction, herpes zoster, and contact dermatitis respectively in patients with skin problems.

Table 4 Validation of the IMAI guideline

Diagnosis	Sensitivity	Specificity	PPV	NPV
Pneumonia	100	96.6	94.5	100
Tuberculosis	87.5	100	100	99.4
Dysentery	92.5	100	100	96.6
Esophageal thrush	100	89.6	72	100
Drug reaction	100	77.8	80	100
Herpes zoster	100	100	100	100
Contact dermatitis	0	100	undetermined	88.2

Concerning the management decision made by the group using the guideline, all the patients diagnosed as sever pneumonia were referred to hospitals after a single dose of IM antibiotic. Sixty percent of the patients with acute pneumonia were treated with oral anti biotic and IM antibiotics were given to 29.3% of them. However the physicians decided to treat 3 patients identified as sever pneumonia cases using the guideline with IM antibiotics and only 26.7 of acute pneumonia cases were treated with IM antibiotics.

Most patients diagnosed as dysentery by the physicians were treated with oral antibiotics both by the physicians and the health workers using the guideline, though 5.4% of them were sent to home only with ORS and advise on additional fluid intake by the group using the guideline.

Table 5 Management decisions made for different diagnosis.

Dx & Mx decision	By Physicians	By guideline

Pneumonia		
Oral antibiotic	66.7	60.0
IM antibiotic	26.7	29.3
Referrals	6.7	10.7
Dysentery		
Oral antibiotics	100	94.6
ORS only	-	5.4
Dehydration		
Referral for iv fluid	22.7	39.1
ORS	77.3	60.9
Esophageal thrush		
Referral	100	100
Oral anti fungal	-	-

6. DISCUSSION

The syndromic approach is a tool by which the case management services can be easily provided from health centers with resource-poor settings at the first contact. The World Health Organization has recommended syndrome management guidelines to be used by first level facility health workers (19).

It is believed that in the absence of etiological tests for diagnosis and also in absence of specialized clinicians who can base their management only with clinical approach, the syndromic approach is an effective and appropriate management strategy (12). However the capacity of the guidelines should be evaluated and assured.

Regarding the IMAI guideline validity studies were yet not conducted. However there are study results regarding different types of syndromic approach. Syndromic management for urethral discharge in men, and genital ulcers in men and women, has proved to be both valid and feasible in different settings.

Several studies were also conducted to evaluate the performance of the WHO vaginal discharge algorithm. Results of many of those studies showed low specificity and low positive predictive value of these algorithms for detection of cervical infections (13).The result of this study also showed similar finding regarding different degree of anemia and dehydration.

A study conducted to evaluate the IMCI algorithm which is of similar type with the IMAI guideline, showed 97% sensitivity, 49% specificity for pneumonia and 51% sensitivity, 98% specificity for dehydration. In this study, however the sensitivity for pneumonia and dehydration was 100% and the respective specificity was 96.6% & 98.8% (12).

In this study, the IMAI acute care guide line were evaluated in managing HIV clients complaining of cough , diarrhea ,pallor ,skin problem, and patches in the mouth. It was observed that the health workers were adapted to the steps in the guideline easily which could be attributed to the IMCI guideline that already been implemented. The guideline was found to be valid in detection of respiratory tract infections; however, its performance in delineating the level of severity was poor. This could be confounded by the actual ability of the Health workers to carry out the examinations and interpreting the findings.

Most of dysentery and dehydration diagnosis were confirmed by physicians (92 % and 95%).Yet, the guideline also faced difficulties in identifying different level of dehydration. The sensitivities were 78.3% and 75.8%, specificities were 83.6% and 42.9%, and positive predictive values were 60.0% and 41.0% for the diagnosis of sever and some dehydration, respectively.

In the study, the guideline had also high sensitivity for esophageal thrush, herpes zoster, and drug reaction. However the specificity for drug reaction and esophageal thrush was relatively low, only (72%) and (80%) of them were confirmed. The sensitivity of the guideline for contact dermatitis was very low, though there were 8 patients diagnosed as contact dermatitis none them were diagnosed similarly by the health workers who had been using the guideline.

All of the anemia diagnosis made by using the guideline was confirmed by physicians. However the guideline had low sensitivity for sever anemia and low specificity for some anemia.

Concerning the management decisions the number of referrals made was larger in those who had been using the guideline. And more patients were given IM antibiotics in patients with pneumonia. This can be explained by low specificity of the guideline for sever pneumonia. Similar explanation could be given for the larger number of dehydration patients treated with IV fluids.

7. CONCLUSSION &RECOMMENDATION

CONCLUSSION

- The advantages of syndromic management include immediate care, treatment at first visit, and cost-saving by not requiring expensive laboratory tests.

- The use of flowcharts in the management of acute illnesses standardizes diagnosis, treatment, referral, and reporting.

- The main disadvantages of syndromic management are: (a) the costs relating to over-diagnosis and over-treatment when multiple antimicrobials are given to a patient with no or only one infection and (b) excessive use of antimicrobials which increases selective pressure for resistant pathogens in the community.

- The findings of the study suggested that syndromic management of the mentioned diseases at the health center level is possible.

- The performance of the guideline was very poor regarding level of severity in pneumonia, anemia and dehydration.

- The tendency to underestimate the severity of illness in anemia patients was particularly alarming.

- The diagnostic capacity of the syndromic approach depends on the inclusion of combinations of diagnostic criteria in relation to the common diseases.
- Poor specificity in some diseases might have resulted into over-treatment of patients.

- The study showed that the health workers tried to follow each and every steps included in the guideline, and did not show any difficulty in adopting the approach. However, they were facing difficulties in reading the fine write ups of the recording format. And they were not using the guideline persistently for routine activity.

RECOMMENDATION

- The results confirmed that the tested guideline needs further modifications with emphasis on their ability in delineating the level of severity. Therefore, for an effective management approach the capacity of the guideline in diagnosis of sever pneumonia, sever anemia and sever dehydration should be addressed.

- To help further modifications of the guideline further study regarding signs and symptoms presented in relation to their absence and presence with specific diseases should be conducted.

- Possible efforts should be made to increase the specificity of the flowchart to reduce over-treatment by further modifications through selecting signs and symptoms that would contribute to its specificity in addition to its high sensitivity. This would be of real economic benefit to hospitals as well as the children's families by resulting in substantial saving in drug costs, reduce hospital referrals and potentially the use of hospital inpatient resources.

- Continuous follow up and controlling mechanism regarding proper application of the guideline should be launched by responsible bodies.

- The size of fonts used on the recording sheets should be increased to make it easily readable.

- In general operations research is essential to assess and improve the guideline in addressing the issues mentioned above.

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9. ANNEX

9.1 Assess Acute Illness/ Classify/Identify Treatments

Assess Acute Illness

▶ In all patients: Do you have cough or difficult breathing?

IF YES, ASK:	LOOK AND LISTEN	Classify in all with cough:
• For how long? • Are you having chest pain? — If yes, is it new? Severe? Describe it. • Have you had night sweats? • Do you smoke? • Are you on treatment for a chronic lung or heart problem, or TB? Determine if patient diagnosed as asthma, emphysema or chronic bronchitis (COPD), heart failure or TB. (Also look in Chronic Disease Register.) • If not, have you had previous episodes of cough or difficult breathing? — **If recurrent:** -- Do these episodes of cough or difficult breathing wake you up at night or in the early morning? -- Do these episodes occur with exercise?	• Is the patient lethargic? • Count the breaths in one minute—repeat if elevated. • Look and listen for wheezing. • Determine if the patient is uncomfortable lying down. • Measure temperature. If not able to walk unaided or appears ill, also: • Count the pulse. • Measure BP.	

AGE	FAST BREATHING IS:	VERY FAST BREATHING IS:
5-12 years	30 breaths per minute or more	40 breaths per minute
13 years or more	20 breaths per minute or more	30 breaths per minute or more

Use this classification table in all with **cough or difficult breathing:**

SIGNS:	CLASSIFY AS:	TREATMENTS:
One or more of the following signs: • Very fast breathing or • High fever (39°C or above) or • Pulse 120 or more or • Lethargy or • Not able to walk unaided or • Uncomfortable lying down or • Severe chest pain.	**SEVERE PNEUMONIA OR VERY SEVERE DISEASE**	• Position. • Give oxygen. • Give first dose IM antibiotics. • If wheezing present, treat (p. 74). • If severe chest pain in patient 50 years or older, use *Quick Check*. • If known heart disease and uncomfortable lying down, give furosemide. • Refer urgently to hospital. • Consider HIV-related illness (p. 54). • If on ARV therapy, this could be a serious drug reaction. See *Chronic HIV Care* module.
Two of the following signs: • Fast breathing • Night sweats • Chest pain	**PNEUMONIA**	Give appropriate oral antibiotic **Exception: if second/third trimester pregnancy, HIV clinical stage 4, or low CD4 count, give first dose IM antibiotics and refer urgently to hospital.** • If wheezing present, treat (p. 74). • If smoking, counsel to stop smoking. • Consider HIV-related illness (p. 54). • If on ARV therapy, this could be a serious drug reaction; consult/refer. • If cough > 2 weeks, send sputums for TB (p. 63). • Advise when to return immediately. • Follow up in 2 days (p. 62).
• Cough or difficult breathing for more than 2 weeks or • Recurrent episodes of cough or difficult breathing which: - Wake patient at night or in the early morning or - Occur with exercise.	**POSSIBLE CHRONIC LUNG OR HEART PROBLEM**	• If cough > 2 weeks, send 3 sputums for TB or send the patient to district hospital for sputum testing. (Record in register.) • If sputums sent recently, check register for result. If negative, refer to district hospital for assessment if a chronic lung problem has not been diagnosed (p. 63). • If smoking, counsel to stop. • If wheezing, treat (p. 74). • Advise when to return immediately.
• Insufficient signs for the above classifications	**NO PNEUMONIA COUGH/COLD, OR BRONCHITIS**	• Advise on symptom control. • If smoking, counsel to stop. • If wheezing, treat (p. 74). • Advise when to return immediately.

▶ Check all patients for undernutrition and anaemia:

IF YES, ASK:	LOOK AND FEEL
• Have you lost weight? • What medications are you taking? **If wasted or reported weight loss,** how much has your weight changed? • Ask about diet. • Ask about alcohol use. **%** weight loss = $\frac{\text{old–new}}{\text{old weight}}$ **If pallor:** • Black stools? • Blood in stools? • Blood in urine? • In menstruating adolescents and women: heavy menstrual periods?	• Look for visible wasting. • Look for loose clothing. **If present,** did it fit before? **If wasted or reported weight loss:** • Weigh and calculate **%** weight loss. • Measure mid-upper arm circumference (MUAC). • Look for sunken eyes. • Look for oedema of the legs. **If present:** • Does it go up to the knees? • Is it pitting? • Assess for infection using the full ***Acute Care*** algorithm. • Look at the palms and conjunctiva for pallor. Severe? Some? **If pallor:** * • Count breaths in one minute. • Breathless? • Bleeding gums? • Petechiae?

If visible wasting or weight loss:

If pallor:

* If haemoglobin result available, classify as SEVERE ANAEMIA if haemoglobin < 7 gm; SOME ANAEMIA if < than 10 gm.

Use this table if **visible wasting or weight loss:**

SIGNS:	CLASSIFY AS:	TREATMENTS:
• MUAC < 160 mm or • MUAC 161-185 mm plus one of the following: - Pitting edema to knees on both sides - Cannot stand - Sunken eyes	**SEVERE UNDER-NUTRITION**	• **Refer for therapeutic feeding if nearby or begin community-based feeding.** • Consider TB (send sputums if possible). • Consider HIV-related illness (p. 54). • Counsel on HIV testing.
• Weight loss > 5 % or • Reported weight loss or • Loose clothing which used to fit.	**SIGNIFICANT WEIGHT LOSS**	• Treat any apparent infection. • If diarrhoea, manage as p. 28-30. • Increase intake of energy and nutrient-rich food—counsel on nutrition. • Consider TB (send sputums if possible); diabetes mellitus (dipstick urine for glucose); excess alcohol; and substance abuse. • Consider diabetes mellitus if weight loss accompanied by polyuria or increased thirst (dipstick urine for glucose). • Consider HIV-related illness (p. 54). • Counsel on HIV testing. • Follow up in two weeks.
* Weight loss < 5 %.	**NO SIGNIFICANT WEIGHT LOSS**	• Advise on nutrition.

Use this table if **pallor**

• Severe palmar and conjunctival pallor; • Any pallor with: - 30 or more breaths per minute or - Breathless at rest; • Bleeding gums or petechiae; or • Black stools or blood in stools.	**SEVERE ANAEMIA OR OTHER SEVERE PROBLEM**	• **Refer to hospital.** • If not able to refer, treat as below and follow up in one week. • Consider HIV-related illness (p. 54). • Consider ARV side effect (especially ZDV) or cotrimoxazole side effects. (See ***Chronic HIV Care.***) • Consider malaria if low immunity or increased exposure (p. 24).
• Palmar or conjunctival pallor.	**SOME ANAEMIA**	• Consider HIV-related illness (p. 54). • ARV drugs, especially ZDV and cotrimoxazole, can cause anaemia. (See ***Chronic HIV Care.***) • Consider malaria if low immunity or increased exposure (p. 24). • Give twice daily iron/folate. • Counsel on adherence. • Advise to eat locally available foods rich in iron. • Give albendazole if none in last 6 months. • If heavy menstrual periods—see p. 35. • Follow up in 1 month.

▶ Look in the mouth of all patients and respond to any complaint of mouth or throat problem:

If you see any abnormality or patient complains of a mouth or throat problem, **ASK:**	**LOOK**
• Do you have pain? — **If yes,** where? When does this occur? (When swallowing? When hot or cold food?) • Do you have problems swallowing? • Do you have problems chewing? • Are you able to eat? • What medications are you taking?	Look in mouth for: • White patches — **If yes**, can they be removed? • Ulcer - **If yes,** are they deep or extensive? • Tooth cavities • Loss of tooth substance • Bleeding from gums • Swelling of gums • Gum bubble • Pus • Dark lumps Look at throat for: • White exudate • Abscess Look for swelling over jaw. Feel for enlarged lymph nodes in neck. **If patient complains of tooth pain,** does tapping or moving the tooth cause pain?

Classify

If patient has white or red patches:

If sore throat, without mouth problem:

If mouth ulcer or gum problem, p. 22.

If tooth problem or jaw pain or swelling, p. 22.

If patient has **white or red patches:**

SIGNS:	CLASSIFY AS:	TREATMENTS:
• Not able to swallow	**SEVERE OESOPHAGEAL THRUSH**	• **Refer to hospital.** • If not able to refer, give fluconazole.
• Pain or difficulty swallowing	**OESOPHAGEAL THRUSH**	• Give fluconazole. • Give oral care. • Follow up in 2 days (p. 64). • Consider HIV-related illness (p. 54).
• White patches in mouth and • Can be scraped off	**ORAL THRUSH**	• Give nystatin or miconazole gum patch or clotrimazole. • If extensive, give fluconazole or ketoconazole. • Give oral care. • Consider HIV-related illness (p. 54).
• White patches/vertical ridges on side of tongue and • Cannot be scraped off and • Painless.	**ORAL (HAIRY) LEUKOPLAKIA**	• No treatment needed. • Consider HIV-related illness (p. 54). • Instruct in oral care.

Use this table if **sore throat without mouth problem:**

• Not able to swallow or • Abscess.	**TONSILLITIS**	• **Refer urgently to hospital.** • **Give benzathine penicillin.**
• Enlarged lymph node on neck and • White exudate on throat.	**STREPTOCOCCAL SORE THROAT**	• Give benzathine penicillin. • Soothe throat with a safe remedy. • Give paracetamol for pain. • Return if not better.
• Only 1 or no signs in the above row present.	**NON-STREP SORE THROAT**	• Soothe throat with a safe remedy. • Give paracetamol for pain.

go to next page

Use this table if mouth ulcer or gum problem:

SIGNS:	CLASSIFY AS:	TREATMENTS:
• Deep or extensive ulcers of mouth or gums or • Not able to eat	**SEVERE GUM/ MOUTH INFECTION**	• **Refer urgently to hospital unless only palliative care planned.** • **Trial aciclovir.** • **Start metronidazole if referral not possible or distant.** • **Consider HIV-related illness (p. 54).** • **If on ARV therapy, this may be drug reaction. (See *Chronic HIV Care.*)**
• Ulcers of mouth or gums.	**GUM/MOUTH ULCERS**	• Show patient/family how to clean with saline, peroxide or sodium bicarbonate. • If lips or anterior gums, give aciclovir. • Instruct in oral care. • Consider HIV-related illness (p. 54). • If on ARV, started cotrimoxazole or INH prophylaxis within last month, this may be drug reaction, especially if patient also has new skin rash. (See ***Chronic HIV Care***—refer, stop drugs.) • See ***Palliative Care*** for pain relief. • Follow up in 7 days.
• Bleeding from gums (in absence of other bleeding or other symptoms) • Swollen gums	**GUM DISEASE**	• Instruct in oral care.

Use this table if tooth problem, jaw pain or swelling:

• Constant pain with: - Swollen face or gum near tooth or - Gum bubble or • Tooth pain when tapped or moved.	**DENTAL ABSCESS**	• If fever, give antibiotics. • Lance abscess or pull tooth. • **Refer urgently to dental assistant if not able to do so.** • Consider sinusitis. (Do not pull teeth if this is cause.)
• Pain when eating hot or cold food or • Visible tooth cavities or • Loss of tooth substance.	**TOOTH DECAY**	• Place gauze with oil of clove. • Refer to dentist for care or pull tooth.

Consider HIV-Related Illness

Clinical Signs of Possible HIV Infection

- Repeated infections
- Herpes zoster
- Skin conditions including prurigo, seborrhoea
- Lymphadenopathy (PGL)—painless swelling in neck and armpit

- **Kaposi lesions (painless purple lumps on skin or palate)**
- **Severe bacterial infection—pneumonia or muscle infection**
- **Tuberculosis—pulmonary or extrapulmonary**
- **Oral thrush or oral hairy leukoplakia**
- **Oesophageal thrush**
- **Weight loss more than 10 % without other explanation**
- **More than 1 month:**
  - **Diarrhoea (unexplained)**
  - **Unexplained fever**
  - **Herpes simplex ulceration (genital or oral)**

Other indications suggesting possible infection:

- Other sexually transmitted infections
- A spouse or partner or child:
  - known to be HIV positive
  - has HIV or HIV-related illness
- Unexplained death of young partner
- Injecting drug use
- High risk occupation

Consider TB and send sputums for examination of TB (p. 106) if any of these signs:

- **Cough for more than 2 weeks**
- **Father, mother, partner, or sibling diagnosed as TB**
- **Weight loss**
- **Hemoptysis**
- **Painless swelling in neck or armpit**
- **Sweats**
- **Weight loss**

9.2 Standard WHO recording form

INTEGRATED MANAGEMENT OF ADOLESCENT/ADULT ILLNESS
ACUTE CARE RECORDING FORM

Name:_____ Sex:_____ Age:_____ Weight:_____ BP:____ (if not measured within year or if hypertension)

What are the patient's problems? _____

Acute illness / Follow-up acute / Follow-up chronic **Quick check–emergency signs?** Yes No If yes,_____

All patients

ASSESS (circle all signs present)	CLASSIFY
___Yes ___No **DOES THE PATIENT HAVE COUGH OR DIFFICULT BREATHING?**	
If yes, ASK: • For how long?___ • Are you having chest pain? If yes, new? Severe? Describe it:_ *Pleuritic* • Night sweats? • Do you smoke? • On treatment for: Asthma? Emphysema or chronic bronchitis (COPD)? Heart failure? TB? If no: Have you had previous episodes of cough or difficult breathing? *Recurrent episodes* If yes: - Do these episodes wake you up at night or in the early morning? *Yes No* - Do they occur with exercise? *Yes No* **LOOK, LISTEN:** • Is the patient: Lethargic? Confused? Agitated? • Count the breaths in one minute: ____ *Fast Very fast breathing? breathing?* • Look/listen for wheezing. • Measure temperature _____ *< 35°C 37.5°C or above ≥40°C* • If not able to walk unaided or appears ill, also: - Count pulse:_____ - Measure BP:_____ • Uncomfortable lying down?	
X CHECK ALL PATIENTS FOR UNDERNUTRITION AND ANAEMIA	
• Have you lost weight? • Taking medications? Which ones? _____ • If wasted or weight loss: - Diet: Problem:_____ - Alcohol use? • Pallor? If pallor: Black stools? - Blood in stools? - Blood in urine? • If menstruating: Heavy periods? • Look for visible severe wasting: Loose clothing? Did it fit before? • If wasted or weight loss: Weight:____kg Wt loss____% MUAC_____ - Sunken eyes? - Oedema to knee? - Pitting? • Look at palms and conjunctiva for pallor. *Severe pallor*? *Some pallor*? If pallor, - Count breaths in one minute:____ - Breathless? - Bleeding gums? - Petechiae? - Measure haemoglobin:_____	
___Yes ___No **DOES THE PATIENT HAVE ANOGENITAL ULCER OR SORE?**	
• Are these new? Recurrent? • Look for anogenital sores. If present, are there vesicles? • Look for warts. • Look/feel for enlarged lymph node in inguinal area. If present, is it painful?	
___Yes ___No **DOES MALE PATIENT HAVE DISCHARGE FROM PENIS? ANY OTHER GENITO-URINARY SX OR LOWER ABDOMINAL PAIN?**	
• What is your problem?_____ • Discharge from urethra? - If yes, for how long? • Burning or pain when you urinate? • Pain in your scrotum? - If yes, have you had any trauma there? • Do you have sores? Genital exam: • Look for scrotal swelling · Feel for tenderness. • Look for ulcer · Look for urethral discharge • Feel for rotated or elevated testis. • Feel for abdominal pain. If tenderness: - Rebound? - Guarding? - Mass? - Absent bowel sounds? - Temperature:_____ - Pulse:_____	
___Yes ___No **DOES THE PATIENT HAVE MOUTH OR THROAT PROBLEM?**	
• Do you have pain? If yes, Tooth, mouth or throat? - When swallowing? - When hot or cold food? • Problems swallowing? • Problems chewing? • Not able to eat? • Taking medications? Which ones? _____ Look in mouth for: • White patches - If yes, can they be removed? *Yes No* • Ulcer - If yes, deep or extensive? - Tooth cavities - Loss of tooth substance - Bleeding from gums - Swelling of gums - Gum bubbles - Pus - Dark lumps • Look at throat for: - White exudate - Abscess - Swelling over jaw - Enlarged lymph nodes • If tooth pain, does tapping/moving tooth cause pain?	

All patients

Prevention, prophylaxis—all patients
- Encourage insecticide-treated bednet
- Counsel on safer sex • Offer HIV testing and counselling
- Offer family planning • Counsel to stop smoking
- Counsel to reduce or quit alcohol
- If back pain history or risk, teach exercise & correct lifting
- Measure BP

Women of childbearing age:
- Update tetanus toxoid
- Give mebendazole if due
- If pregnant, give antenatal care
- If not pregnant, offer family planning

Adolescent girls:
- Update tetanus toxoid
- Encourage delay interventions if sexually active

9.3 Questioner to be filled by data collectors by interview

Instruction. Circle the alternative that fits to the client.

1 Age of the client

A 15-24 C 35-44

B 25-34 D 45-54

E 55+

2 Sex

A Male B Female

3 Educations

A. Illiterate C. 7-12 grades

B. 1-6 grades D. >12 grade

4 Marital statuses

A. Single C. Divorced

B. Married D. Widowed

5 Monthly incomes

A. <500 D. 1500-2000

B. 500-1000 E. >2000

C. 1000-1500

9.4 Format to be filled by data collectors from patient cards (physicians record)

Code no of the patient ---------- Sex---------- Age----------

Symptoms/ Signs

Laboratory Investigations (if any)

Diagnosis

Treatment

9.5 Format to be filled by data collectors from WHO recording format

Code no of the patient ---------- Sex---------- Age----------

Symptoms/ Signs

Classification

Treatment

9.6 Consent Form

Dear respondent, My name is ----------.I am working in research team of Addis Ababa University. We are interested to evaluate the performance of integrating management of adult and adolescent illness guideline as compared to the etiologic approach. Currently many health professionals are taking trainings on the application of the guideline. Because the guideline is applied in this health center, we need HIV positive clients getting service from the health center to participate in the study. When you participate in the study, we will ask your cooperation to be seen in two examination rooms by different health professionals. We hope you will participate in the study.

All the information you give us will be kept private. Any one who will not be willing to participate in the study will have the right to discontinue at any time in the process.

The results of the study will hopefully serve as an important serve as an important input to intervention programs that aims at improving the health system of the country.

We thank you in advance for taking your time .And if you are willing to participate, please confirm us by putting your signature.

Sign----------

በታማሚዎች ላይ በሚታዩ ምልክቶች ህብር በመመርኮዝ ለ ሴች. ስዩ. ቪ ሌድስ ተጓዳኝ በሽታዎች በሚሰጠው ህክምና ብቃት ላይ በሚደረግ ጥናት ተሳታፊ የሆኑ ታካሚዎች የስምምነት መግለጫ ቅፅ:

ይህ ከቀርብ ጊዜ ወዲህ ተግባራዊ እየሆነ ያለውን በምልክቶች ጥምረት ላይ በመመርኮዝ የሚሰጠውን ህክምና በስብዛኛው ከተለመደው በ “ላቦራቶሪ” ምርመራ ውጤት መሠረት ከሚሰጠው ህክምና ጋር በማነፃፀር ብቃቱን ለመመዘን የሚደረግ ጥናት ነው::

በዚህ ስዩነት ህክምና አሠጣጥ ላይ በርካታ የጤና ባሙያዎች እየሠሰጡ ያሉ ሲሆን በስዲስ ስበባ ባስሙያዎች ሠልጥነው ስራ ከጀመረባቸው ጤና ጣቢያዎች ስንዱ እዚህ በመሆኑ በጤና ጣቢያው የሚታከሙ ሴች. ስዩ. ቪ /ሌድስ ቫይረስ በደማቸው ያሉ ስዋቂዎች በጥናቱ እንዲሳተፉ እንፈልጋለን::

በጥናቱ ለመሳተፍ ፍቃደኛ ቢሆኑ ከተወሰኑት ሰዓታት በላይ እንደማናቅዮት እየገለፅን ለጥናቱ መሳካት ሲሉ ከወትሮው በተለየ መልኩ በተለያዩ መመርመሪያ ክፍሎች በሁለት ጤና ባስሙያዎች ለመታየት ፍቃደኛ ይሆኑ ዘንድ በማክበር ስንጠይቅ በጥናቱ መሳተፍዎ በሚያገኙት ህክምና ላይ ምንም ለውጥ እንደማያመጣ እንዲገነዘቡ እንፈልጋለን::

ከጥናቱ ጋር በተያያዘ ስድራሻ ወይም ማንኛውም ማንነትን የሚጠቁም ነገር ስለማይመዘገብ የጤንነትዎ ሁኔታ ሚስጥራዊነቱ የተጠበቀ ይሆናል::

በጥናቱ ያለመሳተት ወይም በማንኛውም ሰዐት ተሳታፊነትዎን የማቋረጥ እንዲሁም በጥናቱ ዙሪያ የሚነሱና መመለስ የማይፈልጓቸው ጥያቄዎችን ያለመመለስ ፍፁም መብትዎ የተጠበቀ መሆኑን እየገለፅን በጥናቱ ቢሳተፉ በዘገፉት የህክምና አሰጣጥ ላይ የሚያበረክቱት አስተዋፅኦ የሳቀ መሆኑን በመረዳ ተሳታፊ እንዲሆኑና ስምምነትዎን ከታች ባለው ክፍት ቦታ ላይ በመፈረም እንዲያረጋግጡልን እንጠይቃለን::

ፈርማ -------