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UNIVERSITIES
FOR EXPO 2015
SCIENTIFIC COMMITTEE
CITY OF MILAN



Telemedicine for Africa: remote consulting

to support the fight against HIV/AIDS in Swaziland

Department of Computer Science - University of Milan
*CRC Sustainability and Human Security,
Cooperation and Governance*
Institute of Infectious Diseases,
L. Sacco Hospital - University of Milan - ITALY

Speaker

Rita Pizzi



FAR VOLARE
MILANO



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HARP Project settings

ESTHER Alliance

L. Sacco Hospital (Milan)

Good Shepherd Hospital - Siteki (Swaziland)

Goals:

Platform for e-learning, clinical data exchange, consultations and online collaboration

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Good Shepherd Hospital – Siteki (Swaziland)





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Health and social issues

AIDS and Malnutrition

Life expectancy lowest in the world (32)

The highest rate of deaths from HIV (64%)

Health emergency

Connected with AIDS

HIV > Malaria, Dysentery, ... > Malnutrition

Digital Divide / Digital Apartheid

Unequal access to information





HIV and AIDS Estimates

Total Population*	1.4 million (mid-2010)
Estimated Population Living with HIV/AIDS**	190,000 [180,000–200,000] (end 2007)
Adult HIV Prevalence**	26.3% [25–27.4%] (end 2007)
HIV Prevalence in Most-at-Risk Populations**	STI patients (Hhohho): 48.9% (2000)
Percentage of HIV-Infected People Receiving Antiretroviral Therapy***	85% (2009)

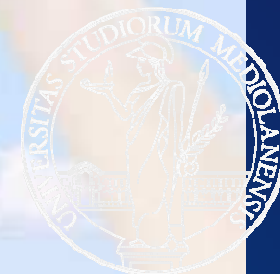
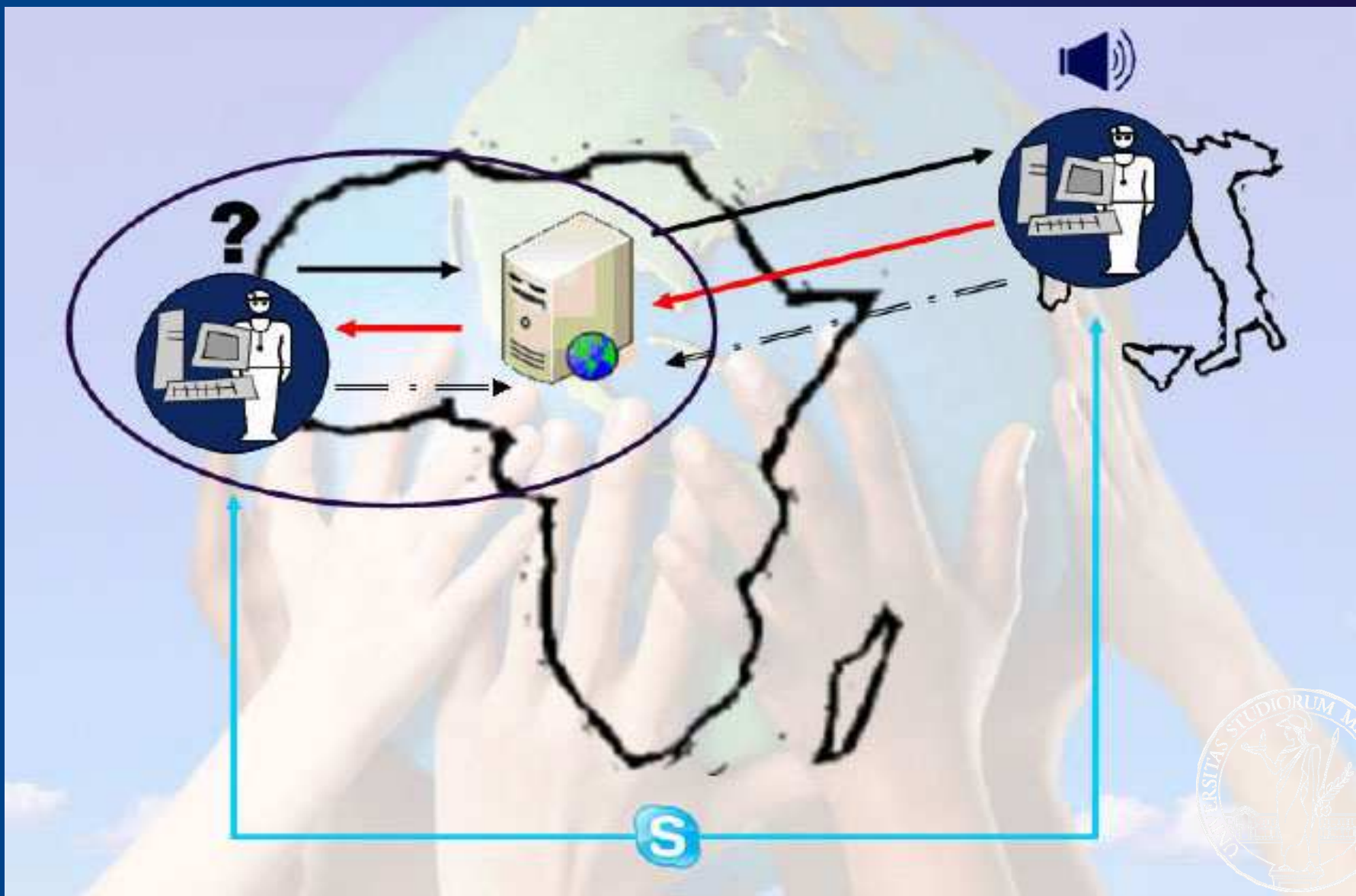
*U.S. Census Bureau **UNAIDS ***WHO/UNAIDS/UNICEF *Towards Universal Access*, 2010





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A model of telemedicine for Africa





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Design: collection of the health needs

Analysis of Medical and Health requirements

Type of user

E-Learning

Finding attached files

Synchronous and asynchronous communication, request of consultations, Articles, Whiteboard

Public and private messaging

Integration with SQL Reporting Service

Privacy

Localization (English)





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Design: technologies

CMS – Content Management System

Creating, updating and managing Web Sites quickly and easy

Drupal, Joomla and WordPress

(OpenSource CMS)

Usability, active Community, Safety requirements





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Design: technologies

LMS – Learning Management System

Software Package for Teaching and the students Resources Management

Moodle (Opensource LMS)

- XHTML-compatible, flexible and accessible
- Layered management of the roles
- Tracking the students activities
- Software development faster than alternatives





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Design: Wordpress

The choice of WordPress:

- embedded database MySQL
- Plug-in for many extensions
- Intuitive for the user and for the Medical Staff
- Very active community, extensive documentation
- Simple roles management
- Quick installation and configuration



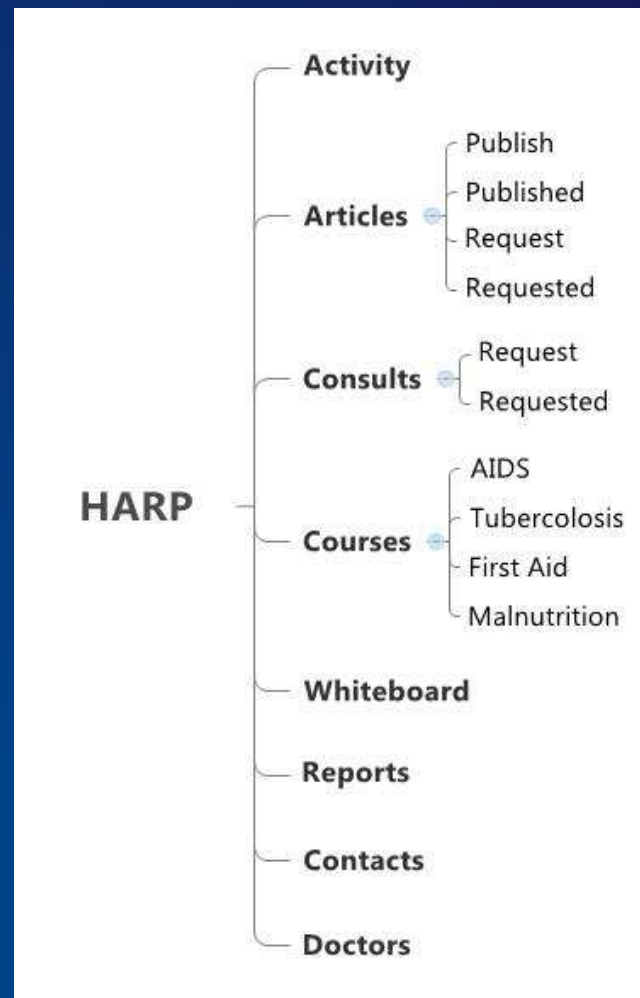


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HARP sitemap

HARP sitemap

ACTIVITY
ARTICLES
CONSULTS
COURSES
WHITEBOARD
REPORTS
CONTACTS
DOCTORS





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Website installation

Installation on Server

L. Sacco Hospital (IIS6 and Microsoft Server 2003)

Compatibility of WordPress3 with IIS6:

- Developed for Apache server, Wordpress has been installed on Microsoft Internet Information Server Services IIS6
- The ISAPI plug-in (HeliconTech) gives IIS the ability to manage WordPress
- Permalinks problem (mod_rewrite Apache)
- Solution with plug-in ISAPI_ReWrite3 Problem solving between ISAPI_ReWrite3 and Reports





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Development tools

WordPress3 plug-ins:

- ***SearchEverything***
- ***Scholar Press Courseware (LMS)(course management)***
- ***Buddy Press (interactive posting management, synchronous and asynchronous)***
- ***WordPress Form Manager (forms for consulting requests and answers)***





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Development tools

Whiteboard:

Vyew platform, integrated using an iframe

Help (help in any page, in the sidebar)

An iframe links the report service of the local SQL server (SQL Reporting Services)





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HARP


(Health Assistance Remote Platform)

Home page

HARP
HEALTH ASSISTANCE REMOTE PLATFORM

ACTIVITY ARTICLES CONSULTS COURSES WHITEBOARD REPORTS

Welcome



HARP is a multimedia platform aimed to support healthcare operators fighting against diseases related to malnutrition in Swaziland region.

It was funded by the city of Milan as part of the project **"Milan for the Fight Against Hunger, Malnutrition and Related Diseases. Contributions for projects of solidarity and international cooperation for countries in Sub-Saharan Africa."**

The purpose of the platform is to provide a multimedia remote support to health professionals in which Italian doctors provide information, consults, articles and e-learning courses.

In particular, you'll be able to:

- Follow all the recent updates that have occurred on the platform since your last access. (**Activity**)
- Be able to request or provide healthcare information, submit documents or read the published ones. (**Articles**)
- Request or answer detailed consult requests. (**Consults**)
- Learn and follow new courses to be constantly up to date. (**Courses**)
- Collaborate in realtime with healthcare colleagues through our Vyew integrated virtual rooms. (**Whiteboard**)
- View easily our reports which provide information from the hospital database. (**Reports**)
- Contact directly the doctors subscribed to the platform. (**Doctors**)

If you have any problem accessing a feature, feel free to visit our **Help** section or **Contact Us** directly.

[Edit this page.](#)


admin
Log Out

July 23, 2012
New post published: an article
(submitted by: Torre, Ale) [Close](#)

Search

Search

Proudly powered by [WordPress](#) and [BuddyPress](#).





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HARP

(Health Assistance Remote Platform)

● Articles

Publish an Article

admin Log Out

Search

HELP:Articles

Request
In this section, you'll be able to request that articles be published and shared on the platform. After you submit the requests will be filed under "Requested" page.

Requested
This section contains the list of all requested articles to date.
Clicking on the titles you'll be able to comment, reply, and add a file to your answer.

Publish
In this section, you'll be able to publish articles you

Author(s) *

Title *

Theme: Disease

Subject: e.g. "AIDS"

Summary

Attachment: Browse...

Note: The fields marked with * are mandatory.

Submit

Article Upload – First Report of AIDS

admin Log Out

Search

HELP:Articles

Request
In this section, you'll be able to request that articles be published and shared on the platform. After you submit the requests will be filed under "Requested" page.

Requested
This section contains the list of all requested articles to date.
Clicking on the titles you'll be able to comment, reply, and add a file to your answer.

Publish
In this section, you'll be able to publish articles you think could be useful to the others without being necessarily requested before. After you submit the requests will be filed under "Published" page.

Published
This section contains the list of all published articles to date.
Clicking on the titles you'll be able to comment, reply, and add a file to your answer.

Article Upload
Submitted by: admin
On: Nov 4, 2011 @ 4:50 PM
IP: 93.34.212.7

- Title: First Report of AIDS
- Theme: Disease
- Year of Publication: 2004
- Subject: AIDS
- Summary:
- Attachment: [First Report of AIDS \(11-04-11-04-50-29\).pdf \(261 KB\)](#)

Article Upload – Common symptoms of HIV and AIDS Nutrition Article Request –

Leave a reply

You may use these HTML tags and attributes: `<abbr title=""><acronym title=""><blockquote cite=""><code><del datetime=""><i><q cite=""><strike><trough>`

Post Comment

Upload Files

You can include images or files in your comment by selecting them below. Once you select a file, it will be uploaded and a link to it added to your comment. You can upload as many images or files as you like and they will all be added to your comment.

Select File: Browse...





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• Consults



HARP
HEALTH ASSISTANCE REMOTE PLATFORM

ACTIVITY ARTICLES CONSULTS COURSE



by Dr
Mamvura

Consult Request – 2012-07-06 15:34:01

Consult Request

Submitted by: Mamvura, Dr
On: Jul 6, 2012 @ 3:34 PM
IP: 41.215.145.1

- Birth-date: 01/01/58
- Sex: Male

- Pre-ART Enrolment Date: 09/09/10
- Date ART Initiation: 09/09/10
- Transfer-In Date: 09/09/10
- From:

- Visit Date: 06/26/12
- WHO T-Stage: III
- Weight (kg): 53
- Funct Stat: Ambulatory
- TB Screening: Positive

- CD4 abs: 17
- CD4 %: 1
- ALT: 39
- AST:
- Hb: 9.3
- LMP:

- Start Date: 09/09/10
- Drugs Name and Dosage: TDF (300mg) 3TC (300mg) EFV (600mg) taken OD
- End Date: 07/05/12

- Start Date: 07/05/12
- Drugs Name and Dosage: ABC (300mg) 3TC (150mg) Aluvia (2tabs) taken BD
- End Date: MM/DD/YY
- Attachment: [GSH case report – simelane \(07-06-12-03-34-01\).doc \(32 kB\)](#)
- Request: any ideas guys on the way forward. he is due to come back on the 19th of July 2012. thank you.

[← Article Upload – The Cost-Effectiveness of Cotrimoxazole in People With Advanced HIV Infection](#)

[Article Upload – Challenges in the Management of HIV-Infected Malnourished Children in Sub-Saharan Africa →](#)

1 response to Consult Request – 2012-07-06 15:34:01



stefano rusconi said on July 16, 2012

Dear Canaan,

this is a very interesting and challenging case.

We are going to give you some suggestion but probably not a definitive answer.

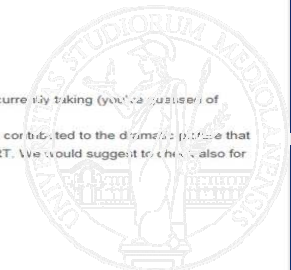
It would be interesting to know if he completed the antiTB therapy and which is the dosage of prednisone he's currently taking (you've mentioned of lymphoma, but not of generalized TB: what's your doubt based on).

The severe immune depression is causing the global picture of general cachexia. This and general malnutrition contributed to the dramatic picture that this patient presented at admission. The choice of Fefol was a bright one, as well as the choice of 2nd line HART. We would suggest to check also for intestinal parasites.

The working hypothesis are:

- NH or Burkitt lymphoma;
- extrapulmonary disseminated TB;
- atypical mycobacteriosis;
- other disseminated intracellular infections.

It all depends on your diagnostic possibilities and more so on the local epidemiology of OIs.





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HARP

(Health Assistance Remote Platform)

- Courses

The screenshot displays the HARP website interface. At the top, there is a navigation bar with the following menu items: ACTIVITY, ARTICLES, CONSULTS, COURSES (highlighted), WHITEBOARD, and REPORTS. The main content area is titled 'Courses' and includes a 'New Course' button. Two course listings are visible:

- AIDS**: active 1 week, 5 days ago. Description: Acquired immune deficiency syndrome or acquired immunodeficiency syndrome (AIDS) is a disease of the human immune system caused by the human immunodeficiency virus (HIV). [1][2][3] The illness interferes with the [...]
- Tuberculosis**: active 1 year, 11 months ago. Description: Tuberculosis, MTB, or TB (short for tubercle bacillus) is a common and in many cases lethal infectious disease caused by various strains of mycobacteria, usually Mycobacterium tuberculosis.[1] Tuberculosis usually [...]

The right sidebar shows the user 'admin' with a 'Log Out' button. Below this, a notification states: 'July 23, 2012 New post published: an article (submitted by: Torre, Ale) Close'. There is also a search bar and a 'HELP: Courses' section with the text: 'Create a New Course To create a new course click on "New Course".'





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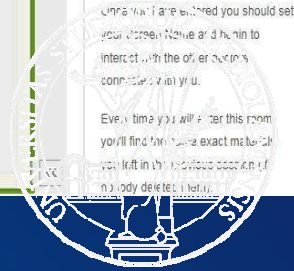
HARP

(Health Assistance Remote Platform)

Reports and Whiteboard

The screenshot shows the 'Reports' section of the HARP platform. At the top, there is a navigation bar with 'ACTIVITY', 'ARTICLES', 'CONSULTS', 'COURSES', 'WHITEBOARD', and 'REPORTS'. The main content area is titled 'Reports' and includes a 'Google-refine' section with instructions on how to use the reporting services. Below this, there is a search bar and a 'HELP: Reports' section. The interface also features a sidebar with 'Log Out' and 'admin' options, and a main content area with a search bar and a 'HELP: Reports' section.

The screenshot shows the 'Whiteboard' section of the HARP platform. At the top, there is a navigation bar with 'ACTIVITY', 'ARTICLES', 'CONSULTS', 'COURSES', 'WHITEBOARD', and 'REPORTS'. The main content area is titled 'Whiteboard' and includes a 'VYEW' section with a search bar and a 'HELP: Whiteboard' section. The interface also features a sidebar with 'Log Out' and 'admin' options, and a main content area with a search bar and a 'HELP: Whiteboard' section. The central part of the screen displays a document titled 'HIV and Its Treatment' from AIDSinfo, with a 'COMMENTS' sidebar on the right.





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Future Developments

- ***Increasing and extending the use of HARP :***
 - Data transmission from the Ministry database
 - Data analysis
 - Extending the telemedicine network to other Internet locations
 - Facilitating the interaction among doctors by improving the interfaces for data transmission and the posting system
 - Improving the platform security using a VPN





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Collaboration with:

<http://www.informatica-solidale.net/>



International Center Helder Camara onlus for Sierra Leone Freetown Hospital

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