Evangelical Lutheran Church in Tanzania

User Guide to Telemedicine

ELCT IT Unit
Arusha, Tanzania
May 2009

Introduction to Telemedicine User Guide

Hospitals located far from each other can benefit from specialist skills in other hospitals through a virtual network called iPath https://www.ipath-network.com/tanzania/. This is an online consultation system, which is used in many countries. The software is easy to use needing only basic Internet and typing skills. Consultations can be easily sent online or using a regular email program. The iPath server informs the consultants by email. An automatic alarming system has shortened the response time to less than 48 hours. Consultants are volunteer expatriate doctors and Tanzanian doctors.

The initiative for this Tanzanian telemedicine network comes from ELCT (Evangelical Lutheran Church Tanzania).

For questions please contact the ELCT IT Unit:
ictinfo@elct.or.tz
+255 27 2502752
www.health.elct.org

For more copies of this manual, please contact AfyaMtandao:
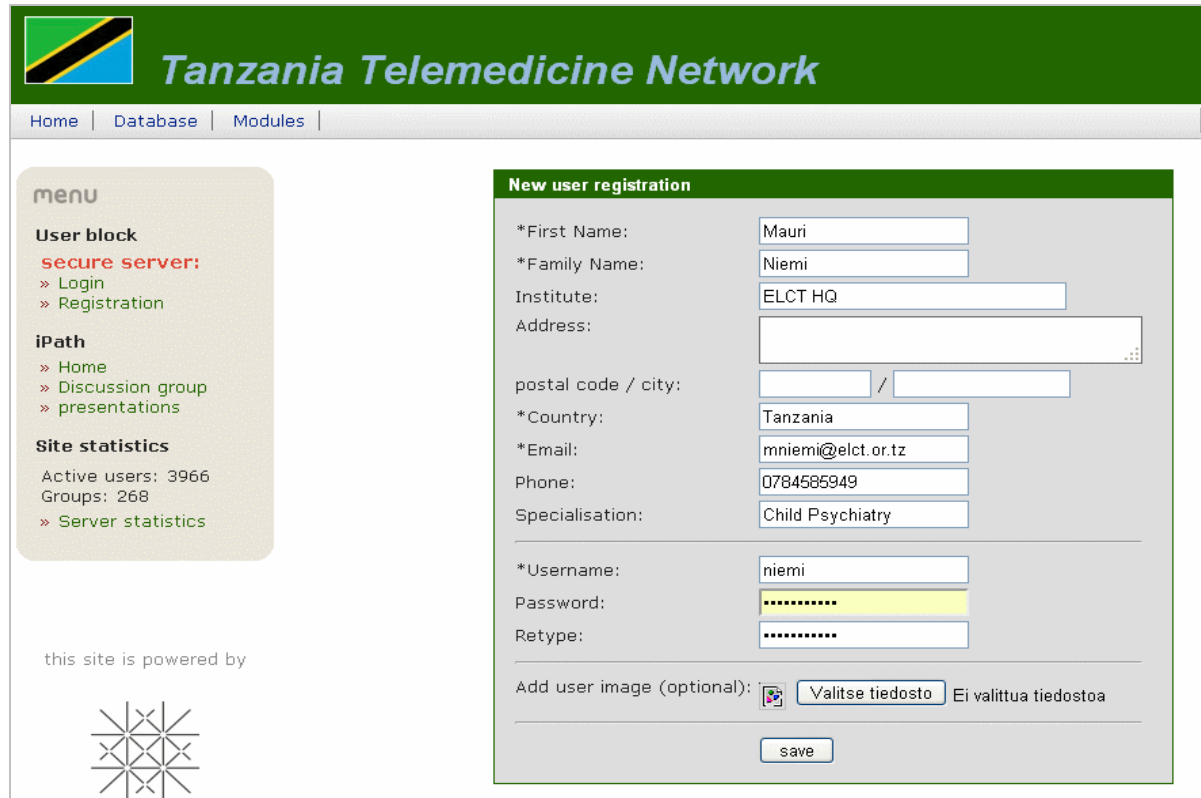afyamtandao@afyamtandao.org
+255 22 2135070
www.afyamtandao.org

1. Registration in iPath and basic settings

To use the iPath telemedicine site the first thing you must do is to register on the site.
The address is: https://www.ipath-network.com/tanzania/, or https://www.ipath-network.com/mobile/

Click on the registration button on the left-hand side and you will get a form called 'New user registration' like the one shown below:
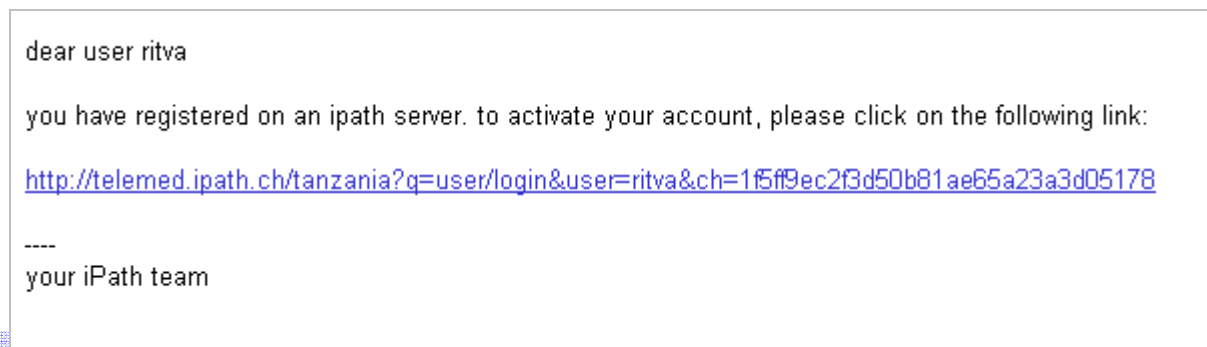

The fields with the * sign are mandatory, but at least fill in the name of your hospital in the 'Institute' field and your phone number along with any specialisation you might have. Be very careful when you type your email address. If you make a mistake in it you will not able to register. You can select any Password you like but you must type it in twice. This is to make sure that you have typed it correctly the first time. Finally, press the 'Save' button.

After registration you will receive an email from iPath in your email box. It will look like this:

dear user ritva

you have registered on an ipath server. to activate your account, please click on the following link:

http://telemed.ipath.ch/tanzania?q=user/login&user=ritva&ch=1f5ff9ec2f3d50b81ae65a23a3d05178

----
your iPath team

Just click on the link and it will take you back to the iPath site where you will be able to confirm your registration by typing in your password. Initially, you will only get one group called the Tanzania New users forum. But moderators of the other Tanzanian groups will give you groups for different specialties within a day or two.

After you have registered and after you have got all the Tanzanian groups it is important to select which groups you want to send emails to your email box if you wish to get a reply to your consultations case, or if you want to follow cases from other doctors.

Click on 'Alert' link on the left side and you get a pop-up menu like the one above. The first example is the Tanzania Center of Telemedicine. There, 'New case', 'New Comment on any case', 'New comment on my case' are selected and you will get any case coming to this group and all the comments on it. This is a good tactic if you are interested in a specific specialisation.

The second example is the Tanzania Cytology Group. There, you will only get comments on your own case but not from cases sent by other doctors.

Both groups have an option called 'Include full case report (HTML email)'. It is good to select this, because it sends the text of the consultation directly to your email box and you do not need to go to the iPath website to read it.

1.1   Using iPath for new consultations

After you have registered, you can start using iPath to send consultations.

First go to: https://www.ipath-network.com/tanzania/ and log in using your user name and password. After you log in you will get to the different groups. When you arrive there you can select the group that you wish to send the case to.

Group list

Group name	total
Tanzania Center of Telemedicine ∞	1
Tanzania Cytology Group	0
Tanzania Dermatology ∞	16
Tanzania General Medicine ∞	1
Tanzania HIV/AIDS ∞	5
Tanzania Infection Prevention ∞	1
Tanzania Internal Medicine ∞	22
Tanzania KCMC Pathology ∞	5
Tanzania New users forum ∞	10
Tanzania Obstetric-Gynecology ∞	11
Tanzania Ophtalmology ∞	2
Tanzania Pediatrics ∞	27
Tanzania Peramiho Pathology OSB ∞	749
Tanzania Radiology ∞	38
Tanzania Surgery ∞	28
Tanzania Teaching Cases ∞	7
Tanzania Test ∞✗	9
Test ∞✗	192

When you have opened the group you will get list of old cases, which you can browse through if you are interested. To make a new case, click on the 'New' button which is displayed in the top left-hand corner of the *Tanzania New users forum* menu below.

Tanzania New users forum (10)   up

Home   New   Find   members   Export Import

ID	Case		Type	Sender	Date
214795 ∞✗	Kolandoto Hospital_25/02/09_ Burkitt's Lymphoma, TB Spine (Deformed Lumbar spine)	🔴	Orthopaedic	Kolandoto	2009-02-25
203036 ∞✗	Bumbuli_03122008_congenital skin conditiomn (Key problem)	🔴	case	mgogwe	2008-12-03
202678 ∞✗	Kolandoto hosp 2/12/08 Pneumonia (testing a tool)	🔴	case	Vivien	2008-12-02
201626 ∞	Bukumbi Hospital_26/11/08 Fungal infection (Candidiasis)	🔴	case	Vivien	2008-11-26
199862 ∞✗	Ndala Hospital_10nov2008_neurofibromatosis (von Recklinghausen/)	🔴	case	Wander	2008-11-10

After pressing the 'New' button you will get a form where you can fill in information about the patient. For easier classification please use the following format for the name of the case: Hospital_date_disease, for example: Marangu_22032008_pneumonia. Here, you simply overwrite the text in the title. If you wish to give more information you can do this under the heading 'Subtitle'.

However, when you give clinical information leave the titles in place and simply write under them. You do not need to touch any other buttons or check boxes.

Hospital_date_disease

🏠 Home   💾 save

Title:	Hospital_date_disease
Subtitle:	Key problem
Type:		Status: case is new ⌄

Sender: elct
Allow others to add items ☐
Hide comments ☐

description:

```
Important history:


Important clinical findings:


Important investigations:



Question to consultant:
```

images: before you can add images to this case, please fill out this form and save it. images can be added on the next page using the "add" button at the top of the page.

visibility: ☐ hidden ☐ public (no password needed to access this object)

[save]

When you have finished writing the text, press the 'save' button once only and wait until you see the text in place in the iPath site, as illustrated in the example below from Ndala hospital. Do not press the 'save' button several times because, if you do, it will end up sending the case several times too.

Ndalahospital_08012009_pericarditis? (207890)   < | up | >

Home   List Find   Edit Add Delete   Chat   image   Export Slideshow Compare referral print
                                                 drop

Ndalahospital_08012009_pericarditis? | **Type:** | **Sender:** | 2009-01-08 20:03
Subtitle: Key problem | | Emkars | Tanzania Pediatrics

Important history:
10 year old girl
History of fever, mild cough, chest pain and palpitations since 2 weeks In the night more
dyspoeic and increased chest pain. No TB-contacts.

Important clinical findings:
Bodyweight of 22 kg, BP 90/40 mmHg, pulse 130/min, JVP normal, not dyspnoeic, not pale,
low grade fever. No lymfadenopathy.
Chest: Cor: S1S2, pericardial rub at left sternal edge, systolic souffle pm at apex,
Lung: normal breathing sounds, no crepitations.
Abdomen: no abnormalities, no organomegaly or ascitis.
No oedema.

Important investigations:
Lab: Hb 9.7, L 7600 (lymf 80%, neutrof 18%, mono 2%), ESR 46
X-chest (see picture): enlarged globular heart, meniscussign left, and interlobair lines

Question to consultant:
On admission the girl was put on X-pen and Genta, ASA and furosemide. At the moment
there is no fever but I am thinking of TB-pericarditis. A pyogenic pericarditis is less likely to
me, because the child is not severe sick and because of the lymfocytosis.
Unfortunately were not able to do a ultrasound of the heart. Testing for HIV is asked.
Do you think this clinical picture is compatible with TB-pericarditis?

If you make a mistake in the text and wish to correct it, all you have to do is press the 'Edit' button and then save your changes.

If you have any pictures to send, press the 'Add' button which you can see in the menu-bar at the top of the screen-shot above.

You will get the simple form above called 'Edit image'. You then have to click on the 'Browse' button and look up the picture on your computer in the directory in which you have saved it. You do not need to write anything in the description field if you do not want to. Then press the 'save' button and – above all - be patient: it will take quite a lot of time to send the picture along our slow lines.

If you have more than one picture you can send them one at a time. Alternatively, you can click on the option called "add more than one image". But only use this option if your speed is good enough to send many pictures at the same time.

After you have sent the picture(s) you will see them on the iPath site, as shown in the example below called 'Gallery'.

Gallery:

pericarditis_360...JPG

Annotations   » Add comment

carstenkrueger
2009-01-08 23:26

Dear colleague,
the xray could be compatible with the diagnosis of a TB pericarditis, but also with a diagnosis of rheumatic heart disease with mitral valve stenosis and possibly insufficiency. I am a little bit surprised that there should not be any hepatomegaly, raised JVP or edema of the legs, because with any of these diseases there should be some degree of heart failure.
To distinguish these two conditions, it would be crucial to get an echo, even a rudimentary apical 4 chamber view would help (this can be done even with a normal ultrasound probe, you do not need a specific probe for echo). If there is significant pericardial effusion you should see it and could tap it from the subcostal area. If you see a very large left atrium then the diagnosis of mitral valve stenosis due to rheumatic heart disease is very likely.
In the former case, you tap and then treat for TB. In the latter you must treat the heart failure (digoxin, captopril, diuretics) and try to get the patient to a place where heart surgery is performed.
Hope this helps.
Yours sincerely,
Carsten Kruger

This also shows a comment from a consultant. If the consultant asks you for more information, just click on the "Add comment" option. Then type your text and save it. In this way, communication between you and the consultant can continue for as long as it is needed. If you have 'alerts on' for your case you will receive his or her comments in your email box.

2.   Taking and editing pictures for iPath

Taking pictures with a camera needs some practice. Follow this simple guideline which explains how you can take good pictures of patients, x-rays, ultrasound, ECG films or other things that will help the consultant.

The following Guideline is for Fuji Finepix model which we provided for the hospitals.

Open the camera by pressing the button marked with an arrow: see the picture below.
The round button on the right side is to take pictures.

However, before taking pictures it is good to **select 3 things** that will guarantee good quality medical pictures.

1. Rotate the selection wheel on the right upper corner until the image of the 'shaking human figure' points to the black mark. This reduces camera movement when there is little light, which can happen when you take pictures of x-rays or ultrasound or if the patients are indoors.

2. Go to the Selection buttons on the lower right-hand side of the camera. Then press the 'flower' button to get a text that says "Macro Close-Up Shots" on the screen. This also shows a yellow flower. All of this will help you to get good, close-up pictures.

3. Press the button showing a 'bolt of lightening' on the righ-hand side quite a few times until you see a text on the screen that says "Suppressed flash. Flash deactivated". This prevents the flash from spoiling your pictures.

After you have selected these 3 things you will get icons on the upper left-hand side of the screen like the ones shown below.

If you do not see these small icons press the 'DISP/BACK' button once or twice to show your selections on the screen. (see the image to the left, underneath.)

2.1   Focusing the camera

Focusing the camera may need a bit of practice. You should press the button halfway down and hold it gently until the camera is focused. Then take the picture by pressing the button down completely.

You will know when the camera is focused from the 'peep' sound it gives. You can also follow the yellow square in the screen: this will changes from a bigger square to a smaller square as shown below.
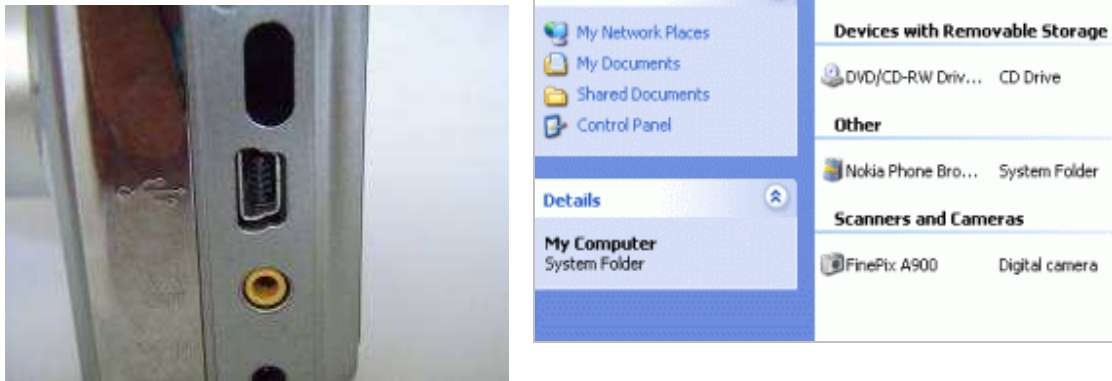

When you want to take pictures of a flat surface – such as an x-ray - it may not give 'peep' sound at all, but only changes the yellow square to a smaller one.

Normally it is good to take many pictures of the same object so that you can select the best one. If you want to see the pictures that you have taken so far with the camera, just press the button on the right-hand side that is marked with green arrow (see picture of buttons above). You can select the next picture by pressing the 'bolt of lightning' button and the previous picture by pressing the 'flower' button.

2.2   Copying pictures from the camera to the computer

When you copy the pictures to your computer you must use the special cable that came with camera. There is a socket on the right side of the camera. The cable can only be put in one way: make sure you insert it carefully and correctly. You need to use a small amount of force to push it in all the way: do not jam it in.

When you connect the camera to your computer you can either copy the pictures using the window that opens automatically. Or you can open 'My computer' and a pop-up icon will appear showing the FinePix Digital camera. Click on this and select the pictures you want to copy and find under 'My documents'. 'My pictures' is the name of the folder where you can paste them. It is good to make a special folder for all the medical pictures.

2.3   Compressing pictures

The pictures that the camera takes are so big that if you send them in their original format it will take up to 30 minutes for them to be transmitted along our slow lines. There are many programs that can be used to edit pictures. Here is guideline for using the program called Microsoft Office Picture Manager which is present in most computers.

Your computer may not be linked directly to this program but you can open the picture by pressing the button on the right-hand side of you mouse when you have selected the picture. Once you have done this, select 'open' and then select Microsoft Office Picture Manager.

When the picture is open, select 'Picture' on the menu and then 'Compress picture' and you will see a menu pop up on the right-hand side which looks like this (see right):

Select the 'Documents' button from the list. This will change the picture size so that the quality remains good, but the picture itself will now be able to travel 5-10 times faster than the original one. After selecting that button press 'OK'.

The picture still needs to be saved. Go to the menu and select 'File'. Then '**Save as'** and change the name to anything you like. That will make the new file smaller than the original.
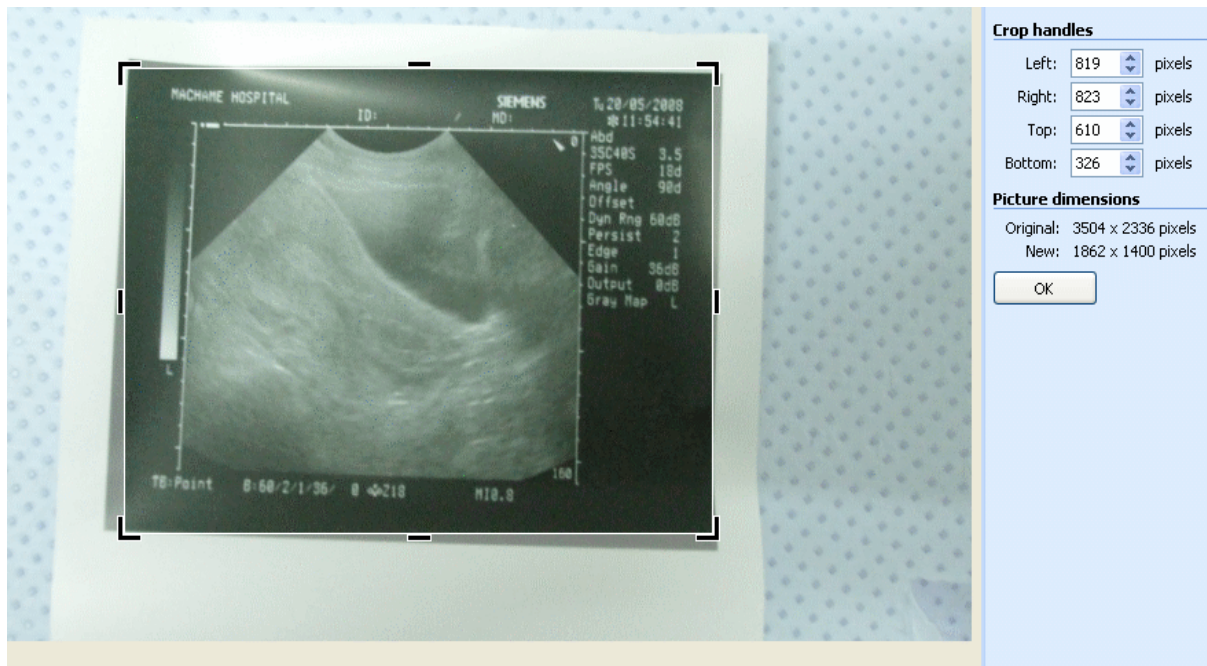
Then close the program and press 'Don't save'. In this way you can still keep the original picture in its full size and, if the consultant asks for more details, you can send it later.

2.4   Selecting a specific area of the picture

Sometimes it is good to select only part of the original picture. You can use the Microsoft Office Picture Manager for that as well. Go to the menu and select '**Picture**' and then '**Crop**'. Go with your mouse in the corners of the picture and - holding mouse - drag the frame to the place you wish to select. Do the same from the other corner to get the whole area as you wish to have it.

Below you can see the original picture going to blue background and how the selected area is seen highlighted in the middle. The black marks in the corners are the ones you can use to select the area.

After you have selected the area, go to the menu on the right-hand side and press 'OK'. After you have done this, you will only see the specific area that you have selected. Do the same as you did with compressing pictures: select 'File' from the menu and then **Save as** and change the name to whatever you like. Finally, close the program and then select 'Don't save' in order to preserve your original picture.