

CDSS L3 Documentation – Initial Treatment of Genital Ulcers

Group 7

1. Introduction

The focus of this CDSS is to provide support for medical doctors and healthcare professionals in the treatment of sexually transmitted infections (STIs). It considers risk factors such as exposure to STIs, and whether an ulcer is present and if it is painful or not. This CDSS is based on guidelines from UpToDate and the World Health Organization. These guidelines were transformed into decision logic (L2) to guide the creation of the human-readable code (L3). This documentation specifically refers to the L3 stage of development, which has been implemented using XLSForms for use with ODK.

2. XLSForm

The CDSS for the management of genital ulcers has been developed using an XLSForm, which is a format that uses Microsoft Excel as a basis. This form incorporates various types of questions and parameters to guide the user through the decision-making process. Below is an overview of the key components and parameters considered in this form:

Used Sheets within the XLSForm file:

a) Survey

- Description: contains the questions of the formular, and the notes with the recommendations.
- Used parameters:

type	Defines the type of question or action.
name	Unique identifier for the question or group.
label	Text displayed to the user.
relevant	Conditions to display the question.

b) Choices

- Description: Contains the response options for selection questions.

list_name	Name of the option group.
name	Internal value of the option.
relevant	Text visible to the user.

Types of questions:

a) Option selection: boolean

- Description: These are questions where the user selects between two options: yes or no.
- Example: "Has the patient had a known exposure to a Sexually Transmitted Infection (STI)?"

b) Option selection: multiple choice

- Description: These questions allow the user to select one or more options from a predefined list.
- Example: "Select the Sexually Transmitted Infection (STI) the patient has been exposed to."

c) Notes

- Description: These are used to provide additional information or instructions to the user.
- Example: "The patient has been exposed to herpes. Therefore the following diagnostic tests must be performed, initiate the recommended empirical treatment and await for results."

Parameters for questions:

When selecting an option, whether it is a boolean or multiple choice, the following parameters may be applied:

a) Required

- Description: This parameter specifies whether a response is mandatory for the form to be submitted.
- Usage: Marked as TRUE if the question must be answered.

b) Relevant

- Description: This parameter determines if a question should be displayed based on the answer to a previous question. It defines a condition that must be met for the question to be relevant and visible.
- Usage: For example, a question about specific STIs might only be relevant if the user previously indicated that the patient was exposed to an STI.

Examples:

a) Example of the survey sheet:

type	name	label	relevant
begin_group	group_A	Please confirm	
select_one yes_no	q1_exposure	Has the patient had a known exposure to a Sexually Transmitted Infection (STI) that causes genital ulcers in the last 90 days?	
end_group	group_A_end		
begin_group	group_B	STI exposure	<code>\${q1_exposure} = 'yes'</code>
select_multiple sti_list	q2_sti_selection	Select the Sexually Transmitted Infection (STI) that the patient has been exposed to:	<code>\${q1_exposure} = 'yes'</code>
end_group	group_B_end		
begin_group	empiric_treatment_C	Empiric Treatment	<code>selected(\${q2_sti_selection}, 'herpes') or selected(\${q2_sti_selection}, 'syphilis') or selected(\${q2_sti_selection}, 'chancroid') or selected(\${q2_sti_selection}, 'granuloma')</code>

b) Example of the choices sheet:

list_name	name	label
yes_no	yes	Yes
yes_no	no	No
sti_list	herpes	Herpes (HSV-1, HSV-2)
sti_list	syphilis	Syphilis (Treponema pallidum)
sti_list	lgv	Lymphogranuloma venereum (Chlamydia trachomatis)
sti_list	chancroid	Chancroid (Haemophilus ducreyi)
sti_list	granuloma	Granuloma Inguinale (Klebsiella granulomatis)
herpes_dx	hsv_pcr	Polymerase Chain Reaction (PCR)
herpes_dx	hsv_culture	Viral Culture
herpes_dx	hsv_none	Diagnostic methods not available

3. Implementation

a) Testing the CDSS.

To test the CDSS, please upload the XLSForm file in the following URL: <https://getodk.org/xlsform/>

It is needed that the file is stored locally in the computer. Please use the choose file button to navigate using the file explorer to the XLSForm file. Select it and upload it.

Then, click on the submit button, and click on "Preview in browser". Then, you can navigate through the CDSS.

b) Implementation in a production environment

To be able to use it, it is required the following:

- Each user has to have ODK Collect installed on a device. ODK Collect can be easily downloaded from Google Play.
- It is needed that there is a ODK Central installed. This can be done on premise, using the own infrastructure, or using ODK Cloud or other cloud providers, like AWS or Digital Ocean (Recommended by ODK).
- ODK Central is where the XLSForm will be stored, and ODK Collect on each device has to be configured to have access to the form.

c) Support and Maintenance

Cloud environment is recommended in order to be able to adapt potential updates directly through the Cloud, reaching all users at once.