

Appendix 1

WHO Clinical Staging of HIV/AIDS in Adults and Adolescents

	Description
	<i>Clinical Stage 1</i>
1	Asymptomatic
2	Persistent generalized lymphadenopathy
	<i>Clinical Stage 2</i>
1	Moderate unexplained weight loss (<10% of presumed or measured body weight)
2	Minor mucocutaneous manifestations (seborrheic dermatitis, papular pruritic eruptions, fungal nail infections, recurrent oral ulcerations, angular cheilitis)
3	Herpes zoster
4	Recurrent upper respiratory tract infections (sinusitis, tonsillitis, bronchitis, otitis media, pharyngitis)
	<i>Clinical Stage 3</i>
1	Unexplained severe weight loss (over 10% of presumed or measured body weight)
2	Unexplained chronic diarrhea for longer than one month
3	Unexplained persistent fever (intermittent or constant for longer than one month)
4	Persistent oral candidiasis
5	Oral hairy leukoplakia
6	Pulmonary tuberculosis
7	Severe bacterial infections (e.g., pneumonia, empyema, pyomyositis, bone or joint infection, meningitis, bacteraemia)
8	Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis
9	Unexplained anemia (below 8g/dl), neutropenia (below 0.5 x 10 ⁹ /l) and /or chronic thrombocytopenia (below 50 x 10 ⁹ /l)
	<i>Clinical Stage 4</i>
	<i>Conditions where a presumptive diagnosis can be made using clinical signs or simple investigations</i>
1	HIV wasting syndrome
2	<i>Pneumocystis jiroveci</i> pneumonia (PCP)
3	Recurrent severe bacterial pneumonia (>2 episodes within 1 year)
4	Cryptococcal meningitis
5	Toxoplasmosis of the brain
6	Chronic oro-labial, genital or ano-rectal herpes simplex infection for > 1 month
7	Kaposi Sarcoma
8	HIV encephalopathy
9	Extra-pulmonary tuberculosis
	<i>Conditions where confirmatory diagnosis testing is necessary:</i>
1	Cryptosporidiosis, with diarrhea > 1 month
2	Isosporiasis
3	Cryptococcosis (extra-pulmonary)
4	Disseminated non-tuberculosis mycobacterial infection
5	Cytomegalovirus (CMV) retinitis or infection of the organs (other than liver, spleen, or lymph nodes)
6	Progressive multifocal leucoencephalopathy (PML)
7	Any disseminated mycosis (e.g., histoplasmosis, coccidioidomycosis)
8	Candidiasis of the oesophagus or airways
9	Non-typhoid salmonella (NTS) septicaemia
10	Lymphoma cerebral or B cell non-Hodgkins's Lymphoma
11	Invasive cervical cancer
12	Visceral leishmaniasis
13	Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy

Appendix 2: Association between CDSS alerts and action on treatment failure among HIV patients in Siaya County, Kenya, in 2013
(Complete Case Analysis using Generalized Linear Mixed Methods)

Characteristic	Category	Unadjusted odds ratios		Adjusted odds ratios	
		OR (95% CI)	p-value	OR (95% CI)	p-value
Site status	Control	1.0		1.0	
	Intervention	3.22(1.12-10.22)	0.0470	3.24(1.04-10.13)	0.0434
Sex	Male	1.11(1.04-1.19)	0.0016	1.15(1.08-1.21)	<.0001
	Female	1.0		1.0	
Age group, years	<15 years	0.85(0.69-1.05)	0.1395	0.98(0.79-1.13)	0.8480
	15-24 years	1.18(0.84-1.65)	0.3433	1.44(1.02-2.05)	0.0386
	25-49 years	1.32(1.18-1.46)	0.0039	1.36(1.21-1.54)	<.0001
	50+ years	1.0		1.0	
WHO stage	WHO I	1.0		1.0	
	WHO II	1.65(1.34-2.04)	<.0001	1.62(1.30-2.01)	<.0001
	WHO III	1.68(1.55-1.82)	<.0001	1.63(1.55-1.72)	<.0001
	WHO IV	1.46(0.90-2.37)	0.1257	1.38(0.89-2.13)	0.1445
Marital status	Married	1.20(0.96-1.50)	0.0989		
	Divorced/Separated	0.88(0.64-1.22)	0.4240		
	Widow	1.0			
	Single	0.96(0.83-1.11)	0.5935		
Baseline CD4 category	<350	3.02(2.33-3.92)	<.0001		
	350-500	1.97(1.20-3.23)	0.0091		
	>500	1.0			
First line regimen	Nevirapine	1.72(1.28-2.30)	0.0003		
	Efavirenz	1.37(0.89-2.13)	0.1516		
	Other	1.0			
Art adherence	Satisfactory	1.55(1.25-1.93)	<.0001		
	Unsatisfactory	1.0			

Appendix 3: Association between CDSS alerts and action on treatment failure among HIV patients in Siaya County, Kenya, in 2013.
(Analysis based on Generalized Estimating Equations)

Variable	Label	Unadjusted odds ratio (95% confidence interval)	Adjusted odds ratio (95% confidence interval)
Site status	Control	1.0	1.0
	Intervention	2.91(2.43 - 3.49)	2.96(2.45 - 3.56)
Age group, years	<15 years	1.17(0.83 - 1.65)	1.10(0.77 - 1.57)
	15-24 years	1.52(1.05 - 2.19)	1.62(1.1 - 2.38)
	25-49 years	1.40(1.09 - 1.80)	1.51(1.17 - 1.97)
	50+ years	1.0	1.0
Sex	Male	1.10(0.93 - 1.32)	1.12(0.93 - 1.35)
	Female	1.0	1.0
Marital status	Married	1.39(1.1 - 1.76)	
	Divorced/Separated	1.16(0.72 - 1.87)	
	Single	1.26(0.94 - 1.69)	
	Widow	1.0	
CD4 category	<350	2.5(1.59 - 3.93)	
	350-500	1.65(0.94 - 2.91)	
	>500	1.0	
WHO stage	WHO I	1.0	1.0
	WHO II	1.71(1.33 - 2.2)	1.68(1.29 - 2.19)
	WHO III	1.76(1.38 - 2.24)	1.5(1.16 - 1.95)
	WHO IV	1.64(0.84 - 3.19)	1.27(0.61 - 2.63)
First-line regimen	Nevirapine	1.29(0.47 - 3.58)	
	Efavirenz	1.13(0.39 - 3.25)	
	Other	1.0	
ART adherence	Satisfactory	1.53(0.14 - 16.9)	
	Unsatisfactory	1.0	