CHISU Results in Action

Strengthening Subdistrict Facility Malaria Data Validation and Verification Capacity Improves Routine Malaria Data Quality in Sunyani West District

BACKGROUND

Over the past 12 years, Ghana Health Service (GHS) has successfully implemented the District Health Information Management Systems 2 (DHIMS2) for data collation, storage, analysis, and visualization. Like other districts in Ghana, malaria data is recorded in paper registers, then transferred to paper reporting forms, and subsequently entered into DHIMS2. Data validation rules have been incorporated into DHIMS2 to help facilitate data validation at all the hierarchical levels of GHS. These rules check for the adherence, completeness, consistency, and accuracy of data entered into DHIMS2, including malaria-related data or indicators. But it's important that staff know how to use these rules to ensure malaria data are high quality—so that ultimately they can strengthen their efforts around malaria elimination.

The Country Health Information Systems and Data Use (CHISU) program supported the National Malaria Elimination Program (NMEP) to build the capacity of subregional staff in six selected regions to use the DHIMS2 data validation rules and to strengthen existing systems for data validation and verification—with the goal of improving the quality of malaria data reported in DHIMS2. The existing systems and processes for data validation and verification included regular District Health Management Team (DHMT) and Subdistrict Health Team meetings to review the activities and expected outputs in

their respective work plans.

STEPS TAKEN

CHISU supported data quality improvement training for district-level staff in Sunyani West district. The training focused on tools for data validation and verification, as well as workflow processes (e.g., standard operating procedures). The training equipped participants with the required knowledge and skills to use the DHIMS2 data quality check features and to build a simple but effective Microsoft (MS) Excel tool to conduct data validation at both the district and facility levels.
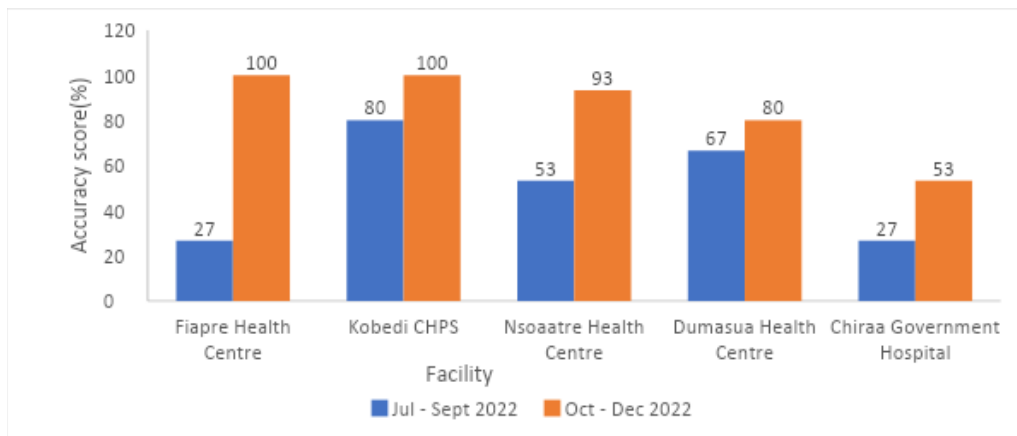
The participants from the Sunyani West District (the District Director and his team) replicated the training they received for four subdistrict health information officers (HIOs) in the region in October 2022. The four officers were trained on the malaria data validation rules, DHIMS2 data quality check feature, and MS Excel data validation template.

RESULTS + NEXT STEPS

This step-down training empowered the subdistrict HIOs to be able to lead data validation activities at the subdistrict facilities. The outcome of training the facility staff resulted in an overall improvement of the quality of malaria-related data reported in DHIMS2 in the district.

Data verification conducted in five of the facilities in the district showed great improvement. The cumulative accuracy score from the verification between register data and DHIMS2 data of the five facilities increased from 51 percent (July to September 2022) to 85 percent (October to December 2022), whereas the cumulative accuracy score between reporting forms data and DHIMS2 data increased from 73 percent to 88 percent in the same periods. The graphs (Figures 1 and 2) and the verification factor analysis dashboards 1 and 2 below show malaria data quality (accuracy source) improvement gained by the facilities visited after the subdistrict HIOs training.
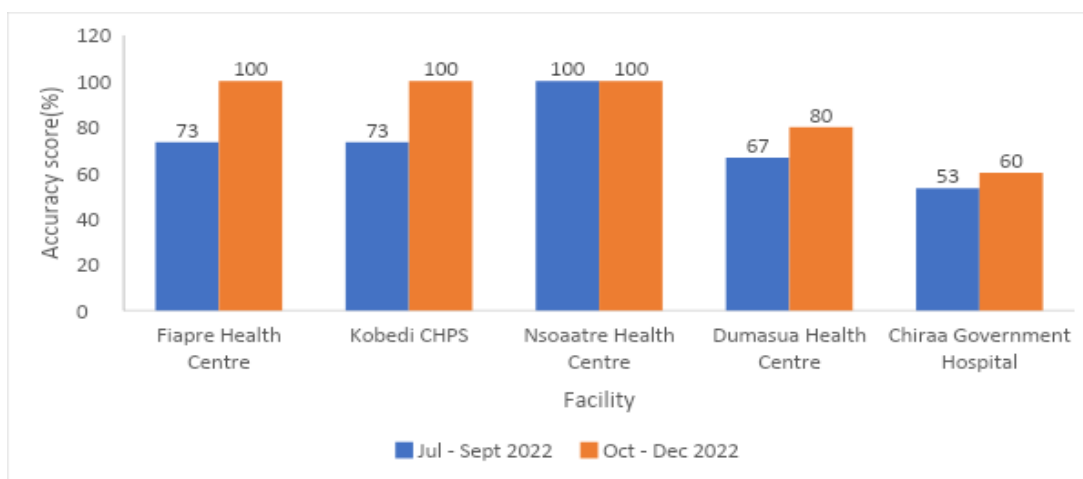
Figure 1: Data accuracy score between register data and DHIMS2 data of five health facilities in Sunyani West District, July–December 2022

Progressive leadership that empowered subdistricts to validate their data and resolve quality gaps resulted in an improvement in the overall district routine malaria data quality. Some challenges remain in generating accurate reports due to an issue with the electronic medical records software used by the facilities in Chiraa (Figure 1). In Figure 2, the data accuracy score at Chiraa and Dumasua facilities improved less than at other facilities due to data completion issues and a need for additional training for facility staff responsible for data entry—since these staff were nurses with limited orientation to the aggregated data from the register.

To sustain data quality improvement, the district has also planned to train all facility staff on malaria data capturing reporting and data validation using the subdistrict HIO and co-facilitators on the DHIMS2 data quality check feature and the MS Excel data validation template.

Figure 2: Data accuracy score between reporting form data and DHIMS2 data for five health facilities in Sunyani West District, July–December 2022

3

Dashboard 1: Pre-subdistrict training data verification dashboard (July 2022–September 2022)

Period	Facility	VERIFICATION FACTOR (%) (DHIMS2 VRS REGISTER)					VERIFICATION FACTOR 9% (REGISTER VRS REPORTING FORM)					VERIFICATION FACTOR (DHIMS2 VRS REPORTING FORM)				
		SM	TM	PM	PPT	ITN PW	SM	TM	PM	PPT	ITN PW	SM	TM	PM	PPT	ITN PW
Jul-22	Chiraa Government Hospital	111	102	109	NR	100	111	102	109	NR	73	100	100	100	NR	136
Jul-22	Dumasua Health Centre	98	98	104	81	100	98	98	104	81	100	100	100	100	100	100
Jul-22	Fiapre Health Centre	110	109	98	257	100	110	109	99	110	100	100	100	100	235	100
Jul-22	Kobedi CHPS	96	91	97	100	100	96	91	97	NR	NR	100	100	100	0	0
Jul-22	Nsoaatre Health Centre	93	93	84	100	100	93	93	87	100	100	100	100	96	100	100
Aug-22	Chiraa Government Hospital	117	112	107	NR	98	117	112	107	NR	100	100	100	100	NR	98
Aug-22	Dumasua Health Centre	99	99	102	104	100	99	99	102	94	100	100	100	100	111	100
Aug-22	Fiapre Health Centre	142	139	111	NR	70	142	139	111	NR	100	100	100	100	NR	70
Aug-22	Kobedi CHPS	104	104	106	100	100	104	104	106	100	NR	100	100	100	100	0
Aug-22	Nsoaatre Health Centre	79	78	81	100	100	79	78	81	100	100	100	100	100	100	100
Sep-22	Chiraa Government Hospital	NR	NR	NR	NR	97	NR	NR	NR	NR	97	NR	NR	NR	NR	100
Sep-22	Dumasua Health Centre	NR	NR	NR	0	100	102	102	118	0	100	NR	NR	NR	94	100
Sep-22	Fiapre Health Centre	96	95	76	NR	100	96	95	76	NR	100	100	100	100	NR	100
Sep-22	Kobedi CHPS	103	103	118	100	100	103	103	118	100	NR	100	100	100	100	0
Sep-22	Nsoaatre Health Centre	96	96	82	100	100	96	96	82	100	100	100	100	100	100	100

Green: Verification factor between 95 and 105 percent

Red: Verification factor below 95 percent and above 105 percent

Dashboard 2: Post-subdistrict training data verification dashboard (Oct 2022–Dec 2022)

Period	Facility	VERIFICATION FACTOR (%) (DHIMS2 VRS REGISTER)					VERIFICATION FACTOR 9% (REGISTER VRS REPORTING FORM)					VERIFICATION FACTOR (DHIMS2 VRS REPORTING FORM)				
		SM	TM	PM	PPT	ITN PW	SM	TM	PM	PPT	ITN PW	SM	TM	PM	PPT	ITN PW
Oct-22	Chiraa Government Hospital	100	100	NR	NR	100	100	100	NR	NR	100	100	100	NR	NR	100
Oct-22	Dumasua Health Centre	106	100	109	100	100	96	100	100	100	100	110	100	109	100	100
Oct-22	Fiapre Health Centre	100	98	100	100	100	100	98	100	100	103	100	100	100	100	97
Oct-22	Kobedi CHPS	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Oct-22	N Nsoaatre Health Centre	100	95	83	100	100	100	95	83	100	100	100	100	100	100	100
Nov-22	Chiraa Government Hospital	100	100	NR	NR	100	100	100	NR	NR	100	100	100	NR	NR	100
Nov-22	Dumasua Health Centre	100	94	100	100	100	100	100	100	100	100	100	94	100	100	100
Nov-22	Fiapre Health Centre	100	100	100	103	100	100	100	100	103	95	100	100	100	100	105
Nov-22	Kobedi CHPS	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Nov-22	Nsoaatre Health Centre	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec-22	Chiraa Government Hospital	100	0	NR	NR	100	100	0	NR	NR	100	100	100	NR	NR	100
Dec-22	Dumasua Health Centre	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec-22	Fiapre Health Centre	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec-22	Kobedi CHPS	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Dec-22	Nsoaatre Health Centre	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Green: Verification factor between 95 and 105 percent

Red: Verification factor below 95 percent and above 105 percent

SM: Uncomplicated Malaria Suspected

TM: Uncomplicated Malaria Suspected Tested

PM: Uncomplicated Malaria Tested Positive

PPT: Outpatient Department Malaria Put on Antimalaria

ITN PW: Pregnant Women Given ITN (Insecticide-Treated Bed Net)