Table 1 Coding framework

PRISM themes	Themes from ORCA	Codes
Technical factors	Denominator	• Wrong denominator • Outdated denominator
	Complexity of forms and procedures for data recording and reporting	• Lack of guideline for recording • Complexity of Indicator definitions • Multiple forms • Parallel reporting
	Language issues;	• Language barrier
Behavioral Factors	Knowledge and skills to manage HMIS	• understanding of health data • Experience on data collection and reporting • Lack of program knowledge • Poor capacity on recording • Low training • Lack of skill operating computers
	Indicator definitions	• Knowledge on Health data and indicator definition
	motivation	• motivation
	Perception towards data quality and the level of emphasis given	• Perception towards data quality and the level of emphasis given
	Available interventions to improve Data quality and use,	• Available interventions to improve Data quality and use,
	Data use	• Data use
Organizational Factors	Communication between levels;	• Communication platform between the hierarchy • Communication between departments • HMIS Communication and feedback • communication among HMIS, logistic and nutrition focal
	Monitoring,	• Routine data quality assessment • Performance monitoring team
	supervision and evaluation	• feedback and learning • HMIS data quality assurance methods • Report evaluation practice
	Accountability	• Incentive mechanism
	Training: inadequate training,	• Capacity buildings • Trained man power • training for a wrong person
	Staff turnover,	• staff Turnover
	Staff retention	• attrition • Staff rotation • lack of HR resource
	Workload	• Workload

Availability of resources	Supply and availability of equipment for HMIS activity	• Shortage of HMIS tools
	Availability of source documents;	• HMIS budget, logistics and infrastructure • transportation logistics
	Availability of computers and electricity	• availability of printing materials • availability of computer • availability of electricity
	Human resource for HMIS (shortage in number),	• Shortage of human resource for HMIS
	finance	• Finance
RHIS Processes	Data flow	• Data flow/Difference
	Data recording and reporting practice	• Wrong reporting/over reporting/under reporting
	Triangulation of data within routine health information system	• Different Reporting period • Separate Logistics and TB Service reporting
	Completeness,	• double reporting during referral
	timeliness,	• Delay in reporting
	accuracy of reporting	• Source of data • Reporting format difference (HC and HP) • Under report for private sector