Annexures

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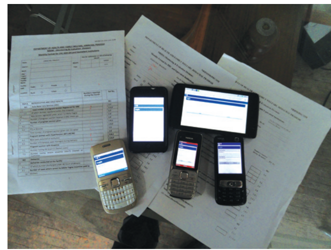

Annexure 1: Tali Tool to Assess Levels of Information Usage

Level	Broad description	Detailed description of criteria
Level 1	**The information system is working technically according to its specification:** timely and accurate data is submitted to the district; district manages data in database, reports to region and feedback to facility. Similar at regional and central levels.	Clearly defined Essential datasets for all compulsory reporting have been defined? Has an information manager been identified? Have all the expected routine reports been submitted? Have feedback reports been issued? User friendly guideline including information handling at that level is available?
Level 2	**Data is analysed, disseminated and used:** Summary reports of data produced and disseminated regularly Indicators are being assessed against performance / targets on a regular basis.	Are summary reports available Are indicators graphed? Are indicators discussed in management meetings?
Level 3	**Information from the system used for planning and evaluation of achievements:** Indicators and information are used by managers to inform their action plans. Indicators and information used to document performance in all written reports	Are indicators interpreted and understood? Are problems identified based on available information? Have any problems been addressed, and can these steps be documented, and an improvement shown using indicators and data?

Annexure 2: Readiness Matrix for Information for Action

Note: Please mark each sub dimension on one of four levels moving from "least ready" to "most ready."

Dimension	Sub-dimension	Level				Comments
		0	1	2	3 (institutionalised)	
Technology:						
	Software customisation requested:	No additional customisation requested	Minimum customisation requested	Significant customisation requested and carried out	Established institutional procedure in place for dealing with customisation requests	
	Server capacity:	No server used	NHSRC shared server used	Own server used	Own server self managed	
	Internet access:	Only available at state level	Available in most cases at District level	Available in most cases at Block level	Available in most cases PHC-level	
Information system processes:						
	Regularity of up-ward reports:	Not being submitted with-out external intervention	Partial submission taking place, but not completely independently	Significantly completion rate being done indepen-dently	100% complete, timely and independently	
	Practice of feedback reports:	No practice existing	Some practice of feedback, mostly informal	Regular systematic feedback through written communication	Well established institu-tions for feedback includ-ing discussions	
	Procedure for data verification:	No procedure existing	Only taking place at district level	Some verification also tak-ing place at Block level	All levels systematic pro-cedure in place, including feedback on changes made	
Data Quality:						
	Completeness:	No reporting	Very low level of complete-ness (< 40%)	Significantly complete (> 40%)	Fully complete	

	Accuracy:	No checking being done	Significant validation queries raised (>25%) during checking	Minimal validation queries raised (<25%) during changes	No validation queries raised during changes	
	Verification procedures in place:	No procedure in place	Informal procedures existing	Detailed written procedures signed, distributed.	Detailed written procedures signed, distributed and followed	
Human Capacity:						
	Adequacy of team:	State team not established	State team in place	Public health components in state team	District team also in place	
	Adequacy of training:	Limited training at state and district levels	Primarily technical focus in training	Use of information training carried out	State trainers in place who are capable of conducting training	
	Advocacy on information for action:	No advocates at state level	Some external advocates at state level	Internal advocates	Advocates also present at district level	
Institutional collaboration:						
	Involvement of program management:	No involvement of programme officers	Limited involvement of programme officers	Significant involvement of programme managers	Program manager formally part of the HMIS-team	
	HIMS budgets in place:	No clear budget line for HMIS	Only state budget defined for HMIS	District offices also have HMIS budget in place	MO at PHC-level also have HMIS budget in place	
	Integration of systems:	Stand alone HMIS	One or two systems integrated with HMIS (RIMS, IDSP)	More than two systems integrated	All systems under one institutional structure	
Use of Information for action:						
	Data analysis:	Not carried out	Externally being done	Frequently done internally	Systematically done internally	
	Feedback reports being generated:	Not carried out	Externally being done	Frequently done internally	Systematically done internally	
	Action taken:	No action	Limited action	Some regular action	State PIPs being made based on HMIS	

Annexure 3: National HIS Assessment Tool – HMN

Note: The grading is from 0 representing No/None to 3 representing Yes/fully adequate. As far as possible, each situation that the four values 0-1-2-3 should represent has been specified.

1. CONTEXT AND RESOURCES

Legal and regulatory framework

	Score (0= No to 3= Yes)	
	The country has recent legislation providing the framework for integrated collection, processing and use of health data, development planning, and HIS infrastructure development e.g. access to information, e-governance, electronic exchange of data, and electronic security measures (0: No, existing legislation is outdated or woefully inadequate; 1: Basic legislation exist, but not the regulatory framework; 2: Basic legislation and a regulatory framework exist, but not the resources and/or political/ administrative will to implement them; 3: Yes)	0 1 2 3
	There is a written HIS strategic plan in active use that emphasises integration of different data sources a) at the national level b) in a modified form at most sub-national areas and districts (0: No; 1: The strategic plan exists, but it is not used or is not pro-integration; 2: The strategic plan exist, but the resources to implement it are not available; 3: Yes, it exists and are being implemented)	 0 1 2 3 0 1 2 3
	There is a representative national HIS committee that actively encourages and supports research and development, innovation and an "entrepreneurial spirit" at all levels, thereby creating a balance between innovation and standardisation (0: No, all important decisions are centralised; 1: Local innovation and R&D are allowed, but must be authorised on beforehand; 2: Local innovation and R&D are generally sanctioned, but the national HIS committee are mostly following external advice ("stargazing"); 3: Yes)	0 1 2 3
	The national sets of goals, objectives, indicators and data elements are following international standards (0: No; 1: International standards and objectives are only considered in an ad-hoc manner; 2: Yes, but national innovations and views are generally not used as input to the same international standardisation processes; 3: Yes, work on standards are flowing both ways)	0 1 2 3

Human resources

	There are adequate numbers of dedicated **HIS staff** in approved posts at each level a) Full time Epidemiologist in HIS office in each subnational area b) District **Information Officers** (DIOs) functioning in every district (0: No; 1: Up to 40% have epidemiologist / permanent DIOs; 2: 40-80% of have adequate staff; 3: >80% have adequate HIS staff)	 0 1 2 3 0 1 2 3
	There are one or more **"hot-lines"** for HIS and IT support available at national, sub-national, and district levels (0: No hotlines available; 1: Hot-line(s) available only at national level; 2: Hot-line(s) available at all levels, but response time is slow; 3: Hot-line(s) available at all levels during HIS systems uptime hours (up to 24/7), providing on-the-fly support)	0 1 2 3

	HIS staff at sub-national/district level are able to **modify and improve their HIS** when changed circumstances (e.g. new programmes, new information needs) make this relevant (0: No, such skills are sorely lacking; 1: Huge variations in such skills are typical; 2: The majority have good knowledge, but still needs significant external support and further training; 3: Yes)	0 1 2 3
	Capacity building activities has occurred over the past year at **district** level a) for HIS staff (statistics, software and database maintenance, and/or epidemiology) b) program managers (epidemiology, report writing, information management) c) health facility staff (data collection, self-assessment, analysis, presentation) (0: No; 1: Limited capacity building; 2: Significant capacity building, but largely depending on external (e.g. donor) support and input; 3: Significant capacity building occurred as part of a long-term government-driven HRD plan)	 0 1 2 3 0 1 2 3 0 1 2 3
	Capacity building activities has occurred over the past year at **national** level for program managers (epidemiology, report writing, information management) (0: No; 1: Limited capacity building; 2: Significant capacity building, but largely depending on external (e.g. donor) support and input; 3: Significant capacity building occurred as part of a long-term government-driven HRD plan)	0 1 2 3
	Written **guidelines** exist defining how facility supervisors and district managers should use information and integrate it into overall health service management (0: No guidelines exist; 1: Written guidelines exist but are not implemented/used; 2: Written guidelines exist and are used, but not integrated into overall service supervision; 3: Yes)	0 1 2 3
Finances		
	There is a specific national **government budget** for core funding of HIS activities (0: No; 1: Yes, but mainly covering salaries and basic recurrent expenditure for existing staff; 2: Yes, but the budget allocations are not based on a long-term strategic HIS plan 3: Yes, with both recurrent and capital budgets based on a long-term strategic plan)	0 1 2 3
	Donor funds for HIS developments are "untied" and channelled through a consolidated fund within the national ministry (and/or sub-national ministries in federal systems) (0: No, donors pick projects with limited co-ordination and funds are often tied to goods and services from the donor country; 1: There is no consolidated fund(s) and often tied aid, but mechanisms for government co-ordination are in place; 2: There is a consolidated fund, but not all donors participate and/or significant funding are "tied"; 3: Yes)	0 1 2 3
	There is a specific **district budget** for HIS activities in at least 80% of all districts (0: No, HIS expenditure (if any) are centrally controlled; 1: Yes, but mainly covering salaries and basic recurrent expenditure for existing staff; 2: Yes, but the budget allocations are not based on a long-term strategic HIS plan 3: Yes, with both recurrent and capital budgets based on a long-term strategic plan)	0 1 2 3

	The district budget is able to cover the cost of providing facilities with locally customised primary **data collection tools** (registers, summary sheets, etc) (0: No, many facilities do not have primary data collection tools; 1: There is a budget line for it, but it is not sufficient to satisfy the needs; 2: Districts rely on higher levels to provide all data collection tools (i.e. no local customisation) 3: Yes)	0 1 2 3
Health Information Infrastructure / Computerisation		
	A complete and up to date national facility list exists for the public sector a) in regular use at national level b) data on infrastructure and human resources for each facility c) geographic coordinates available for each facility (0: none at all, 1: list very out of date or covers <50% 2: Up to date for 50-80% 3: yes)	 0 1 2 3 0 1 2 3 0 1 2 3
	The basic computerised information communication infrastructure (PCs, email, Internet & Intranet access) are in place a) at the national level b) at the sub-national level c) at the district level d) at facility level (0: Only a minority of managers have access to a PC; 1: Most managers have access to a PC but no email; 2: Nearly all managers have access to a PC and the Internet; 3: Yes)	 0 1 2 3 0 1 2 3 0 1 2 3 0 1 2 3
	Technical IT support (networks, installation, repairs, general hardware/software maintenance) is available and functional with acceptable response times (0: Technical IT support generally not available; 1: Technical IT support available, but response/repair/replacement times are often 2 weeks or more; 2: Technical IT support available, but response/repair/replacement times are usually from 3 days to 2 weeks; 3: Technical IT support available with response/repair/replacement times usually less than 3 days)	0 1 2 3
	Routine, semi-permanent, and survey data are in generally captured at the district level and submitted electronically via email or other networks a) to higher levels b) to the national level (0: No, generally reports are on paper; 1: Data is captured and submitted on diskettes; 2: Data is captured and submitted by email or similar; 3: Data is captured locally but stored in or automatically submitted to national servers)	 0 1 2 3 0 1 2 3
	Integrated HIS data and analysed information are readily accessible by managers through Internet / intranet (0: No; 1: Some published reports etc are available; 2: Both raw data and processed information are available, but only to users physically connected to the government Intranet; 3: Both raw data and processed information are available, either via the government Intranet or via the Internet with appropriate access control/firewalls)	0 1 2 3
	The HIS unit at national level is running one integrated HIS database or "data warehouse" containing data and information from all key health programmes (0: No; 1: There is no integration, but key health data/information are presumably available from the HIS unit in whatever format available; 2: There is a "data warehouse", but its content are not functionally integrated/streamlined to support transparent, integrated analysis; 3: Yes, there is a "data warehouse" containing most relevant health datasets with common format and identifiers.	0 1 2 3

	Integrated systems equivalent the national HIS database or "data warehouse" are running at sub-national and/or district levels (0: No system integration at sub-national and/or district levels; 1: Limited system integration at sub-national and/or district levels; 2: Equivalent system integration at sub-national and/or district levels; 3: Equivalent system integration at sub-national and/or district levels ***and*** sub-national/ district managers have access to the national "data warehouse" via the Intranet/Internet enabling vertical collaboration via ICT)	0 1 2 3
	The unit is formally, legally and practically able to modify by adding/ changing data elements and indicators, reports etc. to the national and sub-national HIS database or "data warehouse" without external support (0: No, programs arenot flexible; 1: ; 2:; 3: Yes)	
	A patient based Electronic Health Record system is running at facility level in the public health sector for key MDG programs (e.g. EPI, PMTCT, ARV, TB) (0: only by private company/international consultants; 1: minor modifications can be done within limits prescribed by software owner/ consultant; 2: Significant modifications, but within limits; 3: Any modification can be done because software is open source or software owner has provided source code.	0 1 2 3

2. PROCESS

Data management

	Score (0= No to 3= Yes)	
	There are written guidelines for how information from HIS should be used at different levels a) in the annual planning processes b) in the annual budget process (0: No; 1: Yes, but they are outdated and/or not suitable; 2: Yes, but there are several often contradictory sets of guidelines and regulations from different ministries; 3: Yes, up-to-date streamlined guidelines are in use)	 0 1 2 3 0 1 2 3
	Up-to-date HIS Data from all subsystems and programs (including MDGs) is easily available at one point in the ministry of health (0:Data not available1: Data available, but with difficulty 2: Data available, but not systematically 3: Yes)	0 1 2 3
	The ministry is actively promoting integration of data/information from different sources and programmes under the HIS unit at all levels (0: No; 1: Integration is only pursued at the (sub-)national level; 2: Integration is pursued from the district level and upwards; 3: Yes, integration is pursed at all levels including facility levels)	0 1 2 3
	There are written procedures for dissemination of reports/information "horizontally" to all programme areas and management at the same level at least on a quarterly basis (0: No written procedures and negligible "horizontal" dissemination; 1: There are no ***written*** procedures, but dissemination are common practice; 2: There are written procedures, but they are not fully implemented; 3: Yes, written procedures exist and are largely followed)	0 1 2 3
	Health managers are generally demanding complete and validated HIS information delivered on time (0: Negligible demand from managers; 1: Demand from managers are ad-hoc, usually as a result of external pressure (e.g. questions from politicians or the media); 2: General strong demand from managers, but they do not have the skills and experience to evaluation completeness and quality; 3: Yes)	0 1 2 3

	Anonymous HIS data and indicators are in principle regarded as belonging in the public domain, i.e. it should be available to all interested citizens (0: Access is strictly controlled; 1: Public access accepted in principle, but not implemented in practice; 2: Public access accepted in principle and largely implemented; 3: Public access and availability are guaranteed by law/regulations and fully implemented)	0 1 2 3

Plans and indicators

	A national Essential/**Minimum Indicator and/or dataset** has been implemented in the public health sector (0: None exist; 1: Exist but not implemented; 2: ***Data***set only implemented; 3: Yes)	0 1 2 3
	All indicators in the national Essential/Minimum Indicator Set are linked to the relevant short (1 year), medium (3-5 years), and long-term (10-15 years) targets (0: No targets; 1: Under 40% of indicators have targets; 2: 40-80% of indicators have targets; 3: All indicators have relevant targets)	0 1 2 3
	The national Essential/Minimum Indicator and/or dataset has also been implemented in the private for-profit and private not-for-profit health sectors (0: No; 1: Exist but not implemented; 2: Dataset only implemented; 3: Yes)	0 1 2 3
	The national Essential/Minimum Indicator Set contains all the 15 health-related MDG-indicators (0: None; 1: Eight or less; 2: Eight or more but not all; 3: Yes)	0 1 2 3
	Program Managers at all levels have to get broad acceptance for any extensions or additions to the accepted Essential/Minimum Indicator/ Dataset via a consensus-building process (0: Each programme demands data as they see fit; 1: There is a policy or guidelines in place, but it is not enforced; 2: Most, but not all programme managers have accepted the consensus-building process as a pre-requisite for introducing new data/indicators; 3: New indicators/data elements cannot be introduced without such a process and formal acceptance by the responsible management team)	0 1 2 3
	All key indicators, with numerators and denominators, are known and understood by programme staff a) at the national level b) at the sub-national and district levels (0: No; 1: Limited knowledge/understanding, need continuous support; 2: Good knowledge/understanding, but need backstopping; 3: Yes)	 0 1 2 3 0 1 2 3

Data sources

	All managers at the national level have easy, regular **access** to the Health Information Systems data and analysed information (0: No or very limited access; 1: Access to data/information for their own programme area only; 2: Sector wide access, but only to processed data/ indicators and not "raw" data; 3: All managers have access to all data and information)	0 1 2 3
	There are user-friendly **guidelines** and formats for data analysis using indicators at each level, customised to support the paper-based or computer-based systems in use (0: No guidelines or formats; 1: Brief guidelines exist, but not user-friendly and/or outdated: 2: User-friendly guidelines exist for ***technical*** analysis only; 3: User-friendly guidelines and formats covering both ***technical*** analysis and ***use*** of indicators for planning and decision-making exist and are in regular use)	0 1 2 3

	Population mid-year estimates for use as denominator data are available electronically for facility, district and sub-national level (0: No mid-year estimates available in electronic format; 1: Mid-year estimates available at sub-national level; 2: Mid-year estimates available at district level; 3: Mid-year estimates at facility level (facility catchment and/or target populations);	0 1 2 3
	Data from non-ministry of health surveys is easily available in the ministry of health within the HIS framework a) Household surveys e.g. Demographic and Health Survey b) Vital registration (births and deaths) c) Socio-economic and poverty reduction data d) Literacy and Universal Basic Education (0: Not available 1: Limited availability or out of date 2: Available, but not directly in HIS framework 3: Yes – used for denominators)	 0 1 2 3 0 1 2 3 0 1 2 3 0 1 2 3

3. RESULTS

Analysis and Use of Information

	Score (0= No to 3= Yes)	
	Summary **reports** covering key indicators and programme areas are produced regularly (monthly/quarterly) at a) district/sub-national levels b) at national level (0: No reports produced during last year; 1: Few reports; 2: Regular reports, but usually too late for routine management; 3: Yes, always)	 0 1 2 3 0 1 2 3
	Graphs are widely used to display information: a) Each health programme has at least two **up-to-date graphs** of relevant indicators displayed publicly in the national office b) The national health Information office has at least 6 up-to date graphs of relevant indicators from different MDG programme areas c) Subnational / District offices have up to date graphs displayed (0: No graphs; 1: Some graphs, but not up-to-date; 2: Up-to-date graphs displayed, but only for some programmes; 3: Yes)	0 1 2 3 0 1 2 3
	Maps (GIS or hand drawn) are widely used to display information: a) A GIS is used and maps of relevant indicators are displayed publicly in the national office b) Sub-national offices have up-to date maps of relevant indicators from different MDG programme areas c) Subnational / District offices have up to date maps displayed (0: No maps; 1: Some maps, but not up-to-date; 2: Up-to-date maps displayed, but only for some programmes; 3: Yes) GIS / Maps are used at every level	 0 1 2 3 0 1 2 3 0 1 2 3
	There are incentives for good information performance, such as awards for the best service delivery performance, for the best/most improved district, or for the best HIS products/utilisation (0: No; 1: Sporadic use of incentives only; 2: Institutionalised use of incentives in some areas; 3: Yes)	0 1 2 3
	Managers are held accountable for performance, based on routine and/or survey-based health indicators at a) National level b) District level (0: Management positions not performance related; 1: Managers have performance agreements, but nobody are ***actually*** held accountable; 2: Managers have performance agreements, but ***actual*** accountability are determined by other factors; 3: Yes)	 **0 1 2 3** 0 1 2 3

	Available and relevant data from census, household surveys, ad-hoc surveys and research reports are used in an integrated way for indicator evaluation and cross-checking (0: No cross-verification done; 1: Occasionally; 2: Commonly done, but only as a "manual" process because data formats and identifiers do not match; 3: Commonly done using multiple data sources that have been aligned to a common framework and format for ease-of-use in integrated analysis)	0 1 2 3
	Dissemination of Indicators and Interpreted Information	
	There is a written **data/information flow policy** in active use that includes integrated collection and dissemination of indicators and interpreted information from all key subsystems (0: No data/information flow policy; 1: Data/information flow policy exists, but is not adhered to; 2: Data/information flow policy in use, but it does not include dissemination of indicators and interpreted information ; 3: Yes)	0 1 2 3
	Integrated HIS **summary reports** covering (at least) key MDG health indicators and programme areas are distributed regularly (at least every 3 months) to a) other ministries and elected bodies at national level b) to the media and the general public at national level (0: No integrated reports; 1: Occasional reports, but less frequently than quarterly; 2: Regular integrated reports at least quarterly, but mainly targeting the National Assembly and Cabinet; 3: Regular integrated reports at least quarterly to the National Assembly and all other relevant ministries)	 0 1 2 3 0 1 2 3
	Management teams are producing regular written **feedback** from a) National to sub-national managers b) Sub-national to district c) District to facility (0: No feedback; 1: Under 40% of sub-national units receive regular written feedback; 2: 40-80% of sub-national units receive regular written feedback; 3: All sub-national units receive regular written feedback)	 0 1 2 3 0 1 2 3 0 1 2 3
	Key data and indicators from across programme areas are readily available through an **integrated database** framework a) within the health sector b) within the government sector (a "National Statistics Framework") (0: No data warehouse; 1: Data warehouse exist, but not web-enabled; 2: Web-enabled data warehouse exist, but only internal ministry access; 3: Web-enabled data warehouse exist, with at least partial public access via the World Wide Web)	 0 1 2 3 0 1 2 3
	Anonymous data and indicator sets from the health sector (public and private) are **generally available** (at a reasonable price) to any interested user (patient-identifiable datasets obviously excluded) (0: No data available 1: Annual report of ministry available in all districts 2: Data available on paper, but have to make major effort to get it 3: Most data easily available via web)	0 1 2 3
	Information for action	
	Managers at all levels are able to, and actually use information from HIS for local programme **management**, planning and monitoring (0: All key decisions are centralised; 1: Information used for monitoring, but no real planning done; 2: Programme planning and monitoring done, but not resource allocation; 3: All resource allocation (budgets, staff allocations) are supposedly based on HIS data/indicators)	0 1 2 3

	HIS data/information has during the last 5 years resulted in significant changes in annual **budgets** and/or general resource allocation (0: Budgets are not activity/result driven; 1: Some shifts, but links to information not clear; 2: Information driven resource allocation adopted in principle, but not yet fully implemented; 3: All resource allocation (budgets, staff allocations) are based on HIS information, resulting in major shifts)	0 1 2 3
	At least five problems/challenges from different program areas have been addressed through a **written action plan** based on HIS data/indicators (0: No; 1: Addressed yes, but not via a written action plan; 2: Written action plan, but no clear use of HIS data/indicators; 3: Yes)	0 1 2 3
	The effects of the written action plans have been demonstrably **monitored** using integrated HIS data and indicators from different subsystems (0: No; 1: Partially; 2: Yes, but not documented; 3: Yes, documented)	0 1 2 3
Advocacy		
	HIS information are widely used to advocate for targets and resource allocation in the annual budget processes a) by national management teams with **Cabinet and the National Assembly** b) by **district and sub-national** management teams (0: very few targets/budget proposals are backed up by HIS information; 1: Some (10-40%) of targets/budget proposals are backed up by HIS information; 2: Most (40-80%) of targets/budget proposals are backed up by HIS information; 3: Over 80% of targets/budget proposals are backed up by HIS information)	 0 1 2 3 0 1 2 3
	HIS information is readily available in a written annual (or biannual) report that pulls together and analyses critically health information from all subsystems (0: No report 1: Report out of date or poor quality 2: Report made but analysis weak 3: Yes)	
	HIS information are being used to advocate for **equity** and increased resources to disadvantaged groups and communities by e.g. documenting their disease burden as linked to socio-economic indicators (e.g. poverty) and poor access to health services and other public services (0: Not used for equity purposes; 1: HIS information are used for equity purposes on an ad-hoc basis; 2: HIS information are regularly used to promote equity, but not explicitly linked to quantifiable socio-economic indicators; 3: HIS information are systematically used to pursue equity and linked to socio-economic and/or access indicators as part of a National Statistical Framework)	0 1 2 3
	The key national performance indicators on MDGs are well known among politicians and regularly used by the media a) Under 5 mortality rate is well known b) National immunisation coverage is well known c) Maternal mortality rate is well known d) HIV prevalence rate is well known (0: No; 1: Known by a few "specialists" only; 2: Known among health-focused politicians, but generally not in the media; 3: Yes)	 0 1 2 3 0 1 2 3 0 1 2 3 0 1 2 3
	Members of the **National Assembly** have regularly used HIS information to evaluate government performance on health during the last year (0: No; 1: HIS information used occasionally, but with clear reservations due to completeness or quality of data; 2: HIS information used frequently, but with reservations or disagreements due to completeness or quality of data; 3: Systematic use of HIS information, with most Assembly Members accepting the HIS information as largely reflecting the real situation)	0 1 2 3