INTEGRATED HOSPITAL INFORMATION SYSTEM



WHAT IS HOSPITAL INFORMATION SYSTEM?

Hospital Information System (HIS) is a computerbased system that can manage all the information to allow the providers of health care to do their jobs effectively.





INFORMATION SYSTEMS & ITS COMPONENTS



Any Information System is a convergence of Organizations, Management and Technology



BENEFITS OF HIS



- Maintains a secure database of patients. This information can be available at the point of care.
- Provides improved healthcare delivery by providing medical personnel with better access to data, faster data retrieval, higher quality data.
- Improves efficiency, both on the cost and the clinical care perspective. This is achieved by avoiding duplications, repetitions, delays, missing records.
- Helps to force orderliness and standardization of the patient records and procedures in the clinic and increasing accuracy & completeness of medical records of patient.
- Is a good managerial tool providing total, cost-effective access to complete and more accurate patient data.



WHAT IS UNIQUE?



Integrated Hospital System

- 10 modules within the hospital
- With other systems: HMIS and Name-based tracking

> Based on Free and Open Source Software

- Use of cutting edge technologies Global standards
- No license costs in scaling

User driven development and ownership

- Strong focus on participatory design
- Phased and incremental implementation



MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
Registration	 Identification of a patient as new or revisit Allocating a randomly generated Unique Identification Number Registering a new patient and issuing an OPD slip based on a unique identification number 	Output- OPD Slip Reports generated- •Patient Load- Daily, weekly, monthly, yearly •Patient Load breakup on basis of category, gender breakup •RSBY/BPL breakup •No. of free, handicapped, government employees, Senior citizens, pensioner •Department-wise Load •Geographic Distribution of Load •Old Patient & New Patient Load •Old Patient & New Patient Load •Total cash collection -registration •Daily Registered Patients- patients registered with ID#, category, age gender.

Patient Registration

Visit Information				
Name *			Advance sear	ch ID Number * SHDDU1272751535-4
Demographics *	dd/mm/yyyy Age Birthdate		Gender ▼	Patient category ☑ General ■ RSBY ■ Staff ■ BPL
Address	Postal Address District: Tehsil:	Chittagong Rangunia	v	 Antenatal Patient Child Less Than 1yr Other Free
Phone number				
Relative Name *				Referral Information Referred OPD Room to Visit: * Please select an OPD room to visit •
92.168.0.200:8090/ddu18/modu	ile/report/reportRoleList;	form	Save	

MODULE PRIMARY FUNCTIONS

OUTPUT/ MANAGEMENT REPORTS

Centralized Billing

•Collection of money from the patients for charged services, Ambulances, Tenders and Student fee and giving them printed receipt

•Maintenance of records of monetary transactions – receipts and payments

• Refund for part or whole of the payment made by patient Output- Payment receipt for patient, indicating service paid for and sends order for services to other departments for which payment has been made **Reports generated-**

- •Total User Charges Collected
- •Department wise distribution of Charges

•Consolidated daily cash report- All users

•Total number of bill receipts detailed bill id wise cash collected for a particular time period)

•Daily bills generated (Total bills generated in that day with patient id, bill id and amount)

•Daily Bills Generated (Other free Category) -This report gives details of the bills generated for other free category

•Expenditure on Free Bills: Total amount spent by hospital on free bills (including RKS & BPL patients)

•Void Bill Report – All voided bills

BLOOD BANK	CARDIOLOGY	EPARTMENT	DENTAL DEPA	RTMENT	GENERAL LABO	DRATORY	HOSPITAL CHARGES	MEDICAL EXAMINATION, ROUTINE	NATIONAL PROGRAMMES LABS
PHYSIOTHERA	PY DEPARTMENT	RADIOLOGY	DEPARTMENT	X-RAY D	EPARTMENT				

BIGCHEMISTRY CYTOLOGY HEMATOLOGY SEROLOGY URINE EXAMINATION

ACID PHOSPHATASE	ALP	AMYLASE	BLOOD UREA NITROGEN	DIRECT BILIR	UBIN		
FASTING BLOOD SUGAR	GLUCOSE TOLERANCE TEST	LIPID PANEL	LIVER FUNCTION TESTS	O SULLIVAN	O SULLIVAN		
POST PRANDIAL BLOOD SUGAR	RBS WITH GLUCOMETER	RENAL FUNCTION TESTS	SERUM ALBUMIN	SERUM CREA	SERUM CREATININE		
SERUM GLUCOSE	SERUM GLUTAMIC OXALOACETIC TRANSAMINASE	SERUM GLUTAMIC-PYRUVIC TRANSAMINASE	TOTAL BILIRUBIN	TOTAL CHOLE	ESTEROL		
TOTAL PROTEIN	SERUM URIC ACID		Save bil	Cancel			•
			Total:			130	
			Service I	lame	Qty	Price	
)SPHATASE	1	30	[X]
			ALP AMYLASI		1	30 20	[X] [X]
				REA NITROGEN	1	25	[X]
			DIRECT	ILIRUBIN	1	25	[X]

SEARCH BY BILL ID

Billing Ambulance	Billing Tender	Billing Miscellaneous service	
Find Patient(s)			
Name/Identifier		Advance search	
Find Patient			
Bill Id 4360			



-	MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
	Laboratory Module	 Lab gets queue of all patients posted for various tests conducted by the lab (blood, urine, stool etc) Sample ID for vial is generated, daily work list for respective sub-lab is generated Consolidated work-list containing all the patients together with their tests Feature to print the work list with and without results Patient results entered and printed patient report 	Output- Test result summary Reports generated- •Lab Abstract- daily, weekly monthly, annually. •Aggregate Laboratory Report •Lab Stock related Report – Stock Balance utilization, etc.

Laboratory system | Queue | Work List | Edit Result | Print Work List | Patient Report | Functional Status | Add Confidential Test Orders

See	patient List by	y choosing lab								
	Date: 27/07/2012 Patient ID/Name: Investigation: BIOCHEMISTRY Get patients Reset									
No	Date	Patient ID	Name	Gender	Age	Test	Accept	Sample ID	Reschedule	
1	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	BLOOD UREA NITROGEN	Accepted	27/07/2012-В1	Reschedule	
2	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	ACID PHOSPHATASE	<u>Accept</u>	27/07/2012-B2 Save Cancel	Reschedule	
3	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	ALKALINE PHOSPHATASE	Accept		Reschedule	
4	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	DIRECT BILIRUBIN	Accept		Reschedule	
5	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	AMYLASE	Accept		Reschedule	

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	ory system <u>Quer</u> It List by choosing la		it Result Print	: Work List Patie	nt Report Functional Statu	<u>s Add Confidential</u>	<u>Test Orders</u>		
Date: Get worklis	Date: 27/07/2012 Patient ID/Name: Investigation: BIOCHEMISTRY •								
Sr. No.	Sample No.	Results	Reorder	Date	Patient ID	Name	Gender	Age	Test
1 BLOO Save Cance	27/07/2012-B1 D UREA NITROGEN (mg%	Enter results	Reorder	27/07/2012	SHDDU1011304474-0	Test Patient	М	24	BLOOD UREA NITROGEN

Laboratory system Queue Work List Edit Result Print Work List Patient Report Functional Status Add Confidential Test Orders								
See patient List by choosing lab								
Date: 27/07/2012 Name/Identifier Test Patient 4	Advance search P	rint Show patients						
ID. No: SHDDU1011304474-0 Age: 24 Gender: Male Name: Test Patient Order date: 27/07/2012								
Test	Result	Units	Reference Range					
BIOCHEMISTRY								
BLOOD UREA NITROGEN	12	mg%	13.0 // 43.0					



Can not	in the l	lat has a	haad		- -
See pat	lent L	.151 DV (noosi	ng	laD

14/09/2012 Patient ID/Name:

Investigation: CONSOLIDATED LIST 🗸

Get worklist

Date:

Sr. No.	Sample No.	Results	Reorder	Date	Patient ID	Name	Gender	Age	Test
1	14/09/2012-B8	Enter results	Reorder	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	INDIRECT BILIRUBIN
2	14/09/2012-B9	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	BLOOD UREA
3	14/09/2012-B10	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	ALKALINE PHOSPHATASE
4	14/09/2012-B11	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	LIPID PANEL
5	14/09/2012-H5	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	BLEEDING TIME AND CLOTTING TIME
6	14/09/2012-H6	Enter results	Reorder	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	PLATELETS
7	14/09/2012-H7	Enter results	Reorder	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	COMPLETE BLOOD COUNT
8	14/09/2012-H8	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI129141233-5	Apte Sushil	М	31	TOTAL LEUKOCYTE COUNT
9	14/09/2012-B1	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	INDIRECT BILIRUBIN
10	14/09/2012-B2	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	SERUM CALCIUM
11	14/09/2012-B3	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	SERUM ALBUMIN
12	14/09/2012-B4	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	BLOOD UREA
13	14/09/2012-B5	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	LIPID PANEL
14	14/09/2012-B6	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	31	ALKALINE PHOSPHATASE
15	14/09/2012-B7	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	SERUM GLUTAMIC PYRUVIC TRANSAMINASE
16	14/09/2012-S1	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	C REACTIVE PROTEIN
17	14/09/2012-S2	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	HEPATITIS B SURFACE ANTIGEN TEST
18	14/09/2012-S3	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	31	ANTISTREPTOLYSIN O





Laboratory system	Print Work List Patient Report Functional Status Add Confidential Test Orders
See patient List by choosing lab	
Date: 14/09/2012 Patient ID/Name: Get worklist IV with results	Investigation: CONSOLIDATED LIST - Print worklist



_	MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
	Radiology Module	 Radiology module includes x-rays, ultrasounds, Doppler and contrast studies – respective lab will get queue of all patients posted for various investigation, daily work list for respective sub-lab, patient results entered and patient reported printed Consolidated work-list containing all the patients together with their tests. 	 Reports generated- Radiology Abstract- daily, weekly monthly Annually. Aggregate Radiology Report for Doppler, Ultrasound, Contrast Studies and X-ray Radiology Stock related Report – Stock Balance, utilization, etc.

Radiology system | Queue | Work List | Edit Result | Print Work List | Patient Report | Functional Status

Date:	patient List	27/07/201	12 Patient ID/Name:	test patier	nt Ir	nvestigation: U	ILTR	ASOUND	¥				
No A Date + Patient ID + Name + Gender + Age + Test + Accept + Reschedule													
1	27/07/2012	SH	DDU1011304474-0		Test Patient	М		~24.5 years	ι	JLTRASOUND ANTE	NATAL	Accepted	Reschedule
Radi	ology sy	stem g	ueue Work List	Edit Result	Print Work Lis	<u>t Patient Repo</u>	ort	Functional Statu	<u>s</u>				
See p Date:	atient List I	y choosi				<u>t Patient Repo</u> vestigation: UL			<u>s</u>				
See p Date:	vatient List I	y choosi 27/07/201	ng lab 2 Patient ID/Name:			vestigation: UL			<u>s</u>	Gender	Age	Γest	
See p Date: Get w	vatient List I	y choosi 27/07/201 5	ng lab 2 Patient ID/Name: Reorder	test patien	t In Patient I	vestigation: UL		\SOUND ▼	<u>S</u>	Gender M	Age ~24.5 years	Test	TAL



Radiol	ogy system	Queue Work	List Edit Result	Print Work List Patient Repo	rt Functional Stat	<u>US</u>				
See pat	ient List by cho	osing lab								
Date: 14/09/2012 Patient ID/Name: Investigation: CONSOLIDATED LIST Get worklist										
ir. No.	Results	Reorder	Date	Date Patient ID Name Gender		Age	Test			
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	ULTRASOUND LYMPH NODES		
	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	~31 years	ULTRASOUND ABDOMEN		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	ULTRASOUND KUB AND PROSTATE		
	Enter results	<u>Reorder</u>	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	ULTRASOUND SCROTUM		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	ULTRASOUND BREAST		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	ULTRASOUND SUBMANDIBULAR GLANDS		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	CT OTHER PARTS CONTRAST FOR GENERAL WARD		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	~31 years	CT HEAD CONTRAST FOR GENERAL WARD		
	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	CT HEAD PLAIN FOR GENERAL WARD		
0	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	М	~31 years	CT HEAD CONTRAST FOR SPECIAL WARD		
1	Enter results	Reorder	14/09/2012	ZHMANDI1291457850-3	Sushil Apte	м	~31 years	CT HEAD PLAIN FOR SPECIAL WARD		

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MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
OPD	 Maintenance of patient records Allows doctors at the outpatient department to add provisional diagnosis, procedures, add patient specific notes, refer a patient for internal or external referral and send patient for admission 	 Reports generated- Doctor wise patient load. Patients reviewed by Doctors OPD wise Patient load distribution by department- new patient revisit, internal referral (by periods and departments) Diagnosis breakup for each Doctor

I	Patient queue							
Location: ORTHOPEDIC OPD ROOM NO: 7 🔹								
	Patient queue	Search patient in queue	Search patient in system		/			
	# \	Patient id SHDDU10112327848-1	Patient name Vandana	e	Age ~19.5 years	Gender F	Referral type Revisit	Status
	2	SHDDU1011304474-0	Test Patient	K	~24.5 years	M	Revisit	



Dashboard		
Patient ID: SHDDU1011304474-0 Name: Test Patient Patient category: RSBY -	Age: ~24.5 years Age category: Adult	Location: ORTHOPEDIC OPD ROOM NO: 7 Gender: M Referral: Revisit
OPD entry Clinical summary Investigation report IPD record		
Opd Form		
Provisional Diagnosis:	Conclude visit Back	
ABDOMINAL PAIN ABSCESS ACUTE DIARAHDEAL DISEASE ACUTE OSTEOMYELITIS ACUTE RESPIRATORY INFECTIONS ACUTE RESPIRATORY INFECTIONS ACUTE SUPPLICATIVE ARTHRITIS ANKYLOSING SPONDYLITIS	A 	
Add note: Management plan: Post for procedure:		
CLEAN AND DRESSING TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION	*	
Internal referral:Select OPD Visit Outcome: * OFollow up Cured O Died O Reviewed Conclude visit Back		

MODULE PRIMARY FUNCTIONS OUTPUT/ MANAGEMENT REPORTS

•Patient admission & bed allocation

IPD

•Ward management In-patient services like bed allocation, doctor details, surgical procedures and discharge summary can be recorded through this module **Output-** IPD admission slip, Patient discharge summary

Reports-

•IPD Abstract 1- Bed Occupancy Rate, gives a status of beds occupied and bed Vacant position per ward

•IPD Abstract 2- Census Report- Gives status of On bed Patient and total discharges , with breakup on basis of Gender and Age and department/OPD

•Both these abstracts are available for Morning (8:00 am-8:00 pm) evening (8:00pm-8:00am of next day) and consolidated (8:00 am -8:00 am of next day)

•IPD Admission Report - Report shows all total number of patients admitted in the hospital



Dasł	ıboard Ipd									
Enter Patient ID/Name Ipd ward Select ipd ward Doctor Doctor Select treating doctor From date To date Search										
_										
Pa	Patients for admission Admitted patient index									
#	Admissio	n date	Patient ID	Patient Name	Age	Gender	Admission Ward	Bed Number	Admission By	Action
1	21/04/	2012	SHDDU1231923421-6	Test 2	~45 years	F	EYE WARD FEMALE	45	Patient 175094	Transfer Discharge Print
2	23/04/	2012	SHDDU1011303618-3	Test Test	~26.5 years	Μ	MALE SURGICAL WARD	45678	Patient 175094	Transfer Discharge Print

MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
Pharmacy	The pharmacy module is used to manage the inventory of drugs at the pharmacy. Drug dispensing to patient and their current availability can be monitored through this module	 Reports Generated Daily Drug Distribution Drug Distribution Category Wise (General, BPL, RSBY, Poor) Patient Load Summary (Gender Wise) Stock Balance Report

View Stock Balance | View Stock Balance Expiry | Indent drugs | Issue drug to patient | Issue drug to account

Drug	indent slip of pharmacy							
Drug info Category* Please select Drug* Formulation* Please select Quantity* Add to indent slip Back	# Category Name Formulation Quantity 1 ANALGESICS AND ANTI PYRECTICS DRUGS IBUPROFEN TAB-400mg 40 Save and send Print Clear this indent							



Drug		Issue drug to patient slip							
Drug info Category* Please select		Identifier SHDDU1011304474-0	Category RSBY		me t Patient	Age 24			
Drug* Formulation* Please select		# Category 1 ANALGESICS AND ANTI PYRECTICS DRUGS		Name IBUPROFEN	Formulation TAB-400mg	Quantity 2			
Add to issue slip Back		Finish Print Clear							



/	MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
	Inventory	The inventory module records transactions pertaining to receipts in the Main store followed by transfers on basis of indents to various sub stores	Output- Transfer of Items and Drugs to various Sub Stores on basis of indents raised Reports generated- •Drug Expiry Report •Stock balance Report •Substore/Item wise Consumption report

Drug | <u>Item</u>

View Stock Balance | View Stock Balance Expiry | Receipts to General Store | Transfer from General Store

Receipt slip Drug # Category Formulation Unit price VAT(%) Total price Batch No. Name Quantity CN DM DE RD Drug info Category* Please select • Drug* Formulation* Please select -Quantity* Unit price* VAT(%)* Batch No.* Company name* Date of manufacture* Date of expiry* Receipt date* Add to slip Back

Drug | <u>Item</u>

View Stock Balance | View Stock Balance Expiry | Receipts to General Store | Transfer from General Store

Manage indent

Store Pleas	se select 🔹 Stat	us indent Please select Name	From date	To date	Search
indent list	t				
#	From store	Name	Created on	Status indent	K
1	Pharmacy	<u>Today</u>	27/07/2012	WAIT PROCESS	Process indent

Process indent

	Today re Pharmacy on 27/07/2012				
Process # 1	indent Drug IBUPROFEN	Formulation TAB-400mg	Quantity indent 40	Transfer quantity * 30 4	Quantity available 2020
Transfer	Refuse this indent Ret	urn list			

MODULE	PRIMARY FUNCTIONS	OUTPUT/ MANAGEMENT REPORTS
Blood Bank	•The blood bank management module is used for recording donor details, inventory of blood, patient request, issue of blood unit and all tests conducted at blood bank lab	Output- Blood issue slip Reports generated- •Blood donor records (by period, age, sex) •Blood request reports (by periods & departments) •Blood collection reports (by period) •Blood stock report (with stock out details) •Expiry report (details of blood stocks with expiry dates)

Blood Bank System Queue Find Donor Blood Test Lab View Stock Edit properties

ilable Blood St	tock							
UMMARY	A POSITIVE B	POSITIVE	O POSITIVE	AB POSITIVE	A NEGATIVE	B NEGATIVE	O NEGATIVE	AB NEGATIVE
ID# Issue l	lood Donor Name	e Question	naire Blood tes	sts Blood tag Pa	atient ID	Storage Date	Expiry Date	
104 <u> Issue</u>		∎ <u>view</u>	<u>∎view</u>		DDU1271956217-4	-	19/10/2012	
64 🗍 Dispo	Se Test Martha	∎ <u>view</u>	<u>∎view</u>		DDU1221529345-6	5 15/02/2012	15/05/2012	
	_ \							



MODULE	PRIMARY FUNCTIONS
SDMXHDExport	The SDMX-HD is a Statistical Data and Metadata Exchange (SDMX)-based data exchange format intended to serve the needs of the Monitoring and Evaluation. The data is imported into DHIS to extract information from the data.





<u>Manage</u>	e dataEle	<u>ment</u> Manage ro	eport					
Mana	age r	eport						
Add repo	rt							
Name		Sei	arch					
List rep	oort							
Delete	on selected							
#	No	Name	Code	Created on	Created by	Data Elements	Download	View Send
	1	<u>Test Report</u>	R001	20/07/2012	his	Add Data Element	Download	<u>View</u> <u>Send</u>
Pa	tal page: age size: to page:	1 50 1			«« « 1 »	• »»		

Data Entry 🕐

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LDDU Hospital

Organisation Unit	DDU Hospital	
Data Set	X Ray and Screening Dataset	×
Period	February 2012	Prev year Next year

X RAY AND SCREENING MONTHLY REPORT

S.NO	ACTIVITIES	TOTAL
1.	No of X-Rays Done	12
2.	No. of Screening Done	89
3.	No. of Ultra-sound Scanning	
4.	No. of CT Scans Done	
5.	No. of X Ray Chest done	
6.	No. of X Rays Joints done	
7	No. of X Ray KUB done	







