HSDP: Improving Returns from Capacity Building Investments in HIS/eHealth

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- Introduction
- Main findings - Literature study
- Main findings – Central level data
- Main findings – Field survey data
- Returns on Investment
- Conclusions & Recommendations

Agenda

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The study objective

*"Assess the **effectiveness** of the investments made thus far in capacity building of HIS/eHealth and to arrive at **recommendations** to strengthen systems and processes for investing in further capacity building initiatives*".

Calculate the Return on Investment (RoI):

1. RoI: in financial terms
2. RoI: in terms of users' satisfaction
3. RoI : in terms of completeness and timeliness of the data

The investments

The investments were made in :

- **Hardware**

- **Training, manuals, follow-up, monitoring**

Over 2 fiscal years: 11/12 and 12/13

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What hardware?

	Items	*LD HIS distribution list*
1	Desktop	4,960
2	Printer	3,402
3	Scanner	460
4	Modem	14,189
5	UPS	4,500
6	Laptop	14,199
7	PDA	11,216
	Total nr of items	**52,929**

Value: 12 million USD

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What training?

- Foundation training
- Refresher training
- Training of trainers

- Total of 4.163 training days with 50.340 participants

Value: 2.2 million USD

Methodology (what did we do)

- **Literature study**: looking for best practices internationally
- **Data collection / interviews / documents study** national level Bangladesh
- **Data collection** through a **representative** survey in more than 800 health facilities and with more than 1500 users.

What did we find – Literature study

- Managing the process:

Approach taken is in line with international practices: flexible, learning by doing, tinkering: being able to adapt while implementing.

- Managing the money / budget

Approach not **yet** fully in line with international practices: 20% hardware /80% training and supporting activities.

Main findings – Central level data

- Was the use of the equipment defined?
- Was the right equipment bought: type and technical specifications (!quality!)?
- Was the equipment received?
- Was the equipment distributed?
- Was capacity building planned / organised, users trained?
- Was the environment prepared (maintenance, internet connection)?

Use of equipment was defined

Administrative level	*Data entry*	*Validation*	*Analysis*	*Reporting*	*e-Communication*	*Health education*	*Patient complaint*	*HRM*	*Patient medical records*	*Online self learning*	*Use if power is down*	*Presentations/meetings*	*Health systems strengthening*
1. PDA, modem	X	X			X	X				X			
2. Laptop, modem	X	X	X		X	X		X	X	X	X	X	X
3. Desktop, printer, scanner, UPS, modem	X	X	X	X	X		X	X	X	X			X

Main Findings – Central level data

Quality of the equipment

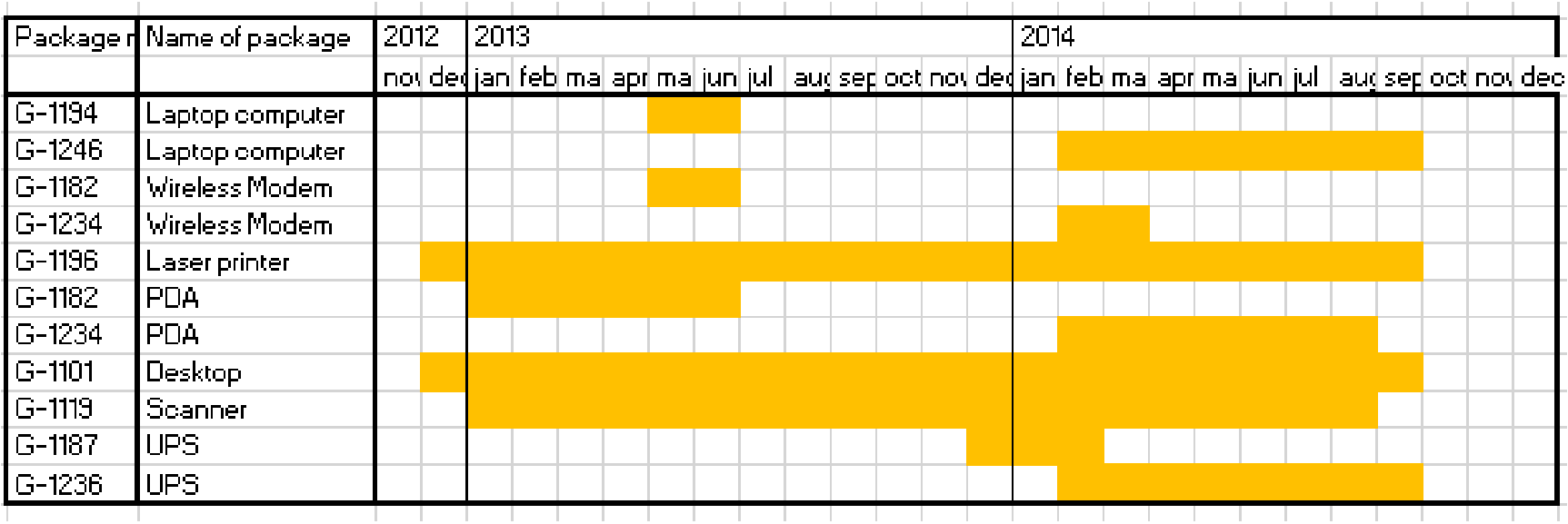
- Type of equipment procured is appropriate for all intended use.
- Technical specifications also appropriate for all equipment.

Procurement of the equipment

- All procurement as planned in the operational plan was executed and all hardware was received by CMSD.

Distribution of goods

- Goods that were procured were collected



- Eg majority desktops dispatched Jan, April, July 2013
  - Statisticians were trained in May 2013

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Capacity building

Aim

To build technical skills (for hardware & software)

+

To create culture of information

HOW?

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Capacity building

- Formal training
  - Foundation training: 14 days computer and software training
  - Refresher training (different subjects)
  - 2-3 day Training of Trainers on PDA, on computer, DHIS2, HRM etc.
- Software and hardware manuals handed over at the training
- LD HIS encourages on-the-job / informal training by statistician or colleague

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Whose capacity?

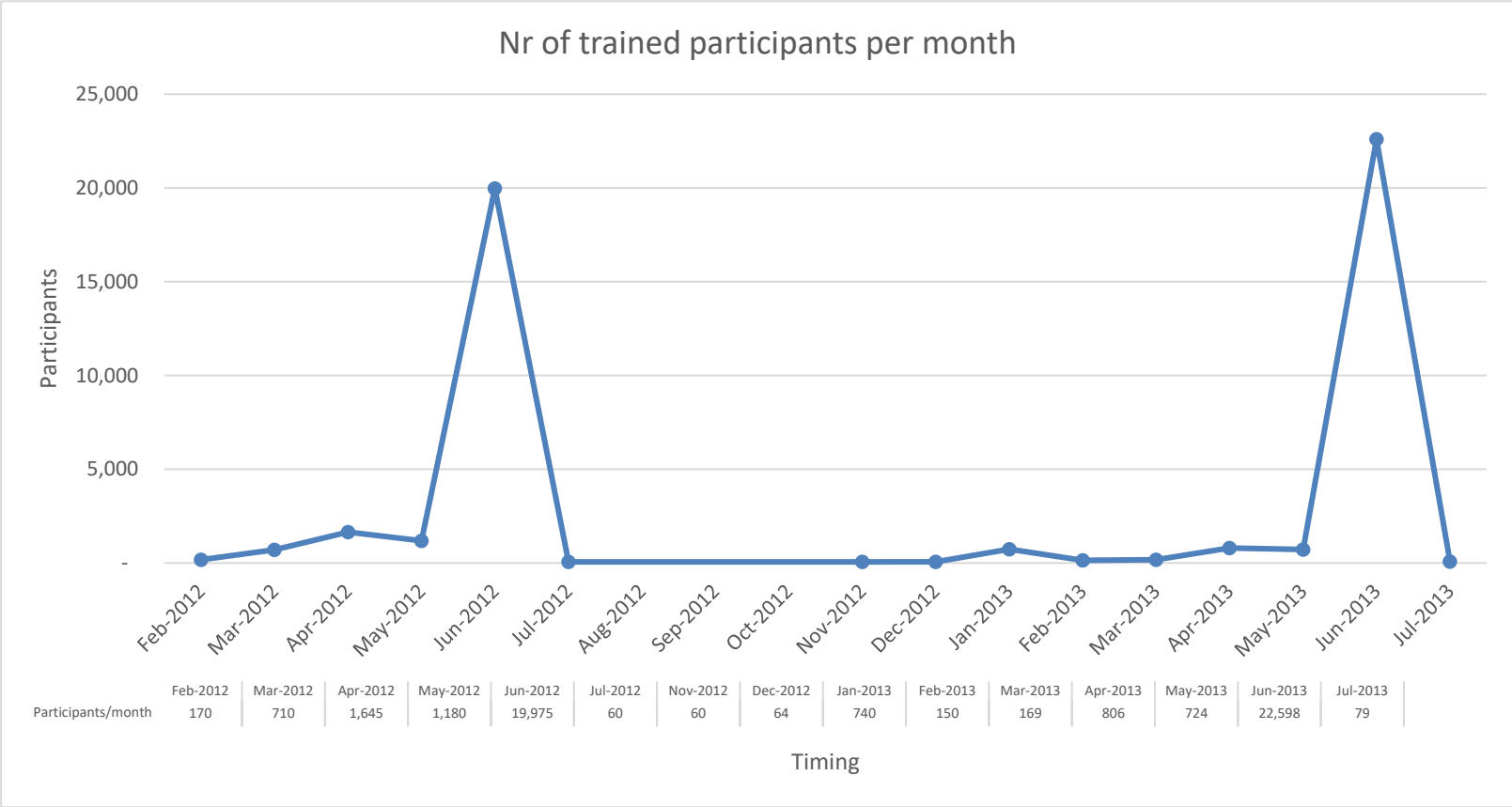
- **Facility managers**
  - UHFPO, civil surgeon, super intendant
- Upazila and district **statisticians**
  - Prime user
  - Collect and analyze the data
  - Act as support to other users
  - Many posts vacant
  - ICT skills not in job description
- **Health service provider**s that collect and/or enter the data
  - CHCP, Health Inspector, Assistant Health Inspector, Health Assistant)

Capacity building (is more than training)

Creating culture of information

- Sensitization meetings for higher level stakeholders (LDs) who in their turn supervise / encourage their field staff in the use of HIS.
  - Community level, digital culture, they do use the equipment (director community clinic has taken digital ownership.)
  - Union level, lower digital culture, less use of equipment
- Statistician: formative and supportive supervision of activities
- Support by higher level through email and/or telephone contact (help desk)

Executed training



	Feb-2012	Mar-2012	Apr-2012	May-2012	Jun-2012	Jul-2012	Nov-2012	Dec-2012	Jan-2013	Feb-2013	Mar-2013	Apr-2013	May-2013	Jun-2013	Jul-2013
Participants/month	170	710	1,645	1,180	19,975	60	60	64	740	150	169	806	724	22,598	79

Main findings – Central level data

Maintenance

Steps are relatively clear

- Preventive maintenance: can be reinforced
- Corrective maintenance:
  1. Statistician or ICT focal point first point of entry
  2. LD HIS email or phone
  3. Within warrantee: supplier

     After warrantee: local maintenance with own budget
  4. Equipment sent to Dhaka

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Other

- Experience from other Line Directors
  - Positive and realistic that digitisation takes time
- Internet connectivity / GrameenPhone:
  - Speed and package should be enough
  - Possible causes of non-connectivity:
    - User capacity
    - Credit issues
    - Coverage issue/ poor connectivity (though unlikely)
- Power supply is an issue

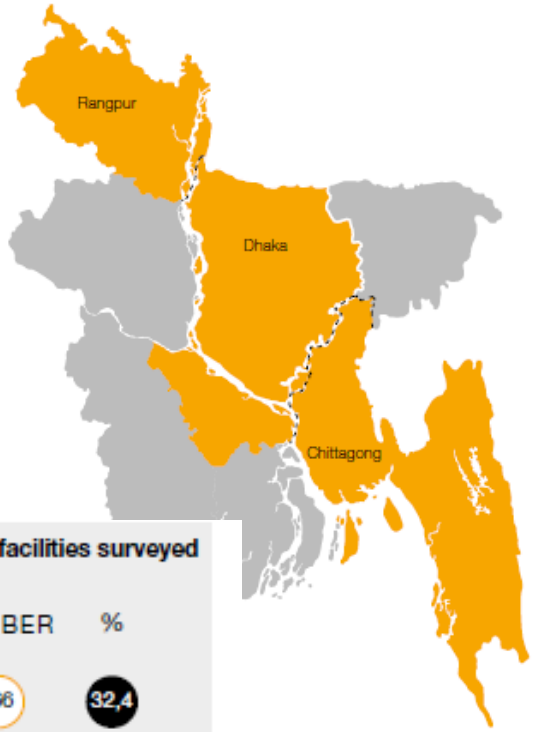
Main findings field survey

- Field survey covers (amongst others):
  - Was the hardware (IT equipment) received and in which order?
  - Is the IT equipment used?
  - Did the users receive training and related capacity building activities and what did they learn?
  - Is the IT equipment maintained?
  - **What is the effect of the IT equipment and training on their daily work?**

Two types of field surveys

- *General facility survey: manager, all facility's equipment*
- *User survey: prime user, user equipment*

Locations



DIVISIONS	SH	MCH	DH	CSO	UHC	SUB-TOTAAL	USC	CC	Total facilities surveyed NUMBER	%
Chittagong	-	1	7	9	54	71	78	117	266	32,4
Dhaka	4	5	12	14	60	95	97	177	369	44,9
Rangpur	-	2	2	7	34	46	50	91	187	22,7
Totaal	4	8	22	30	148	212	225	365	822	

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Respondents

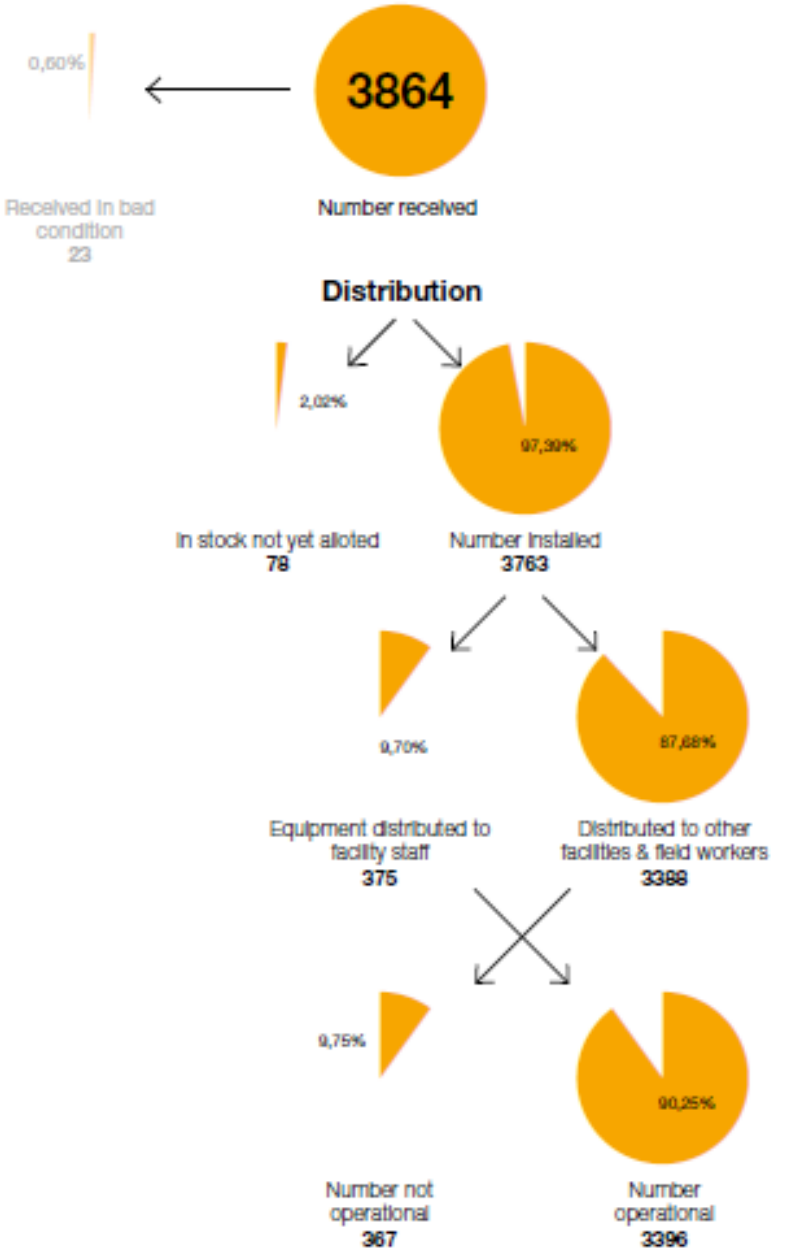
Survey location	*Type of survey*	*Total*
Secondary/Tertiary hospitals	General survey	11
	User survey desktop	11
District	General survey	53
	User survey desktop	53
Upazila	General survey	146
	User survey desktop	146
Union sub centers	User survey laptop	246
Community clinics	User survey laptop	362
Field workers/Health Assistants	User survey	584
Total		**1,612**

- Statistically significant number over the three divisions and tertiary/secondary/primary service provision

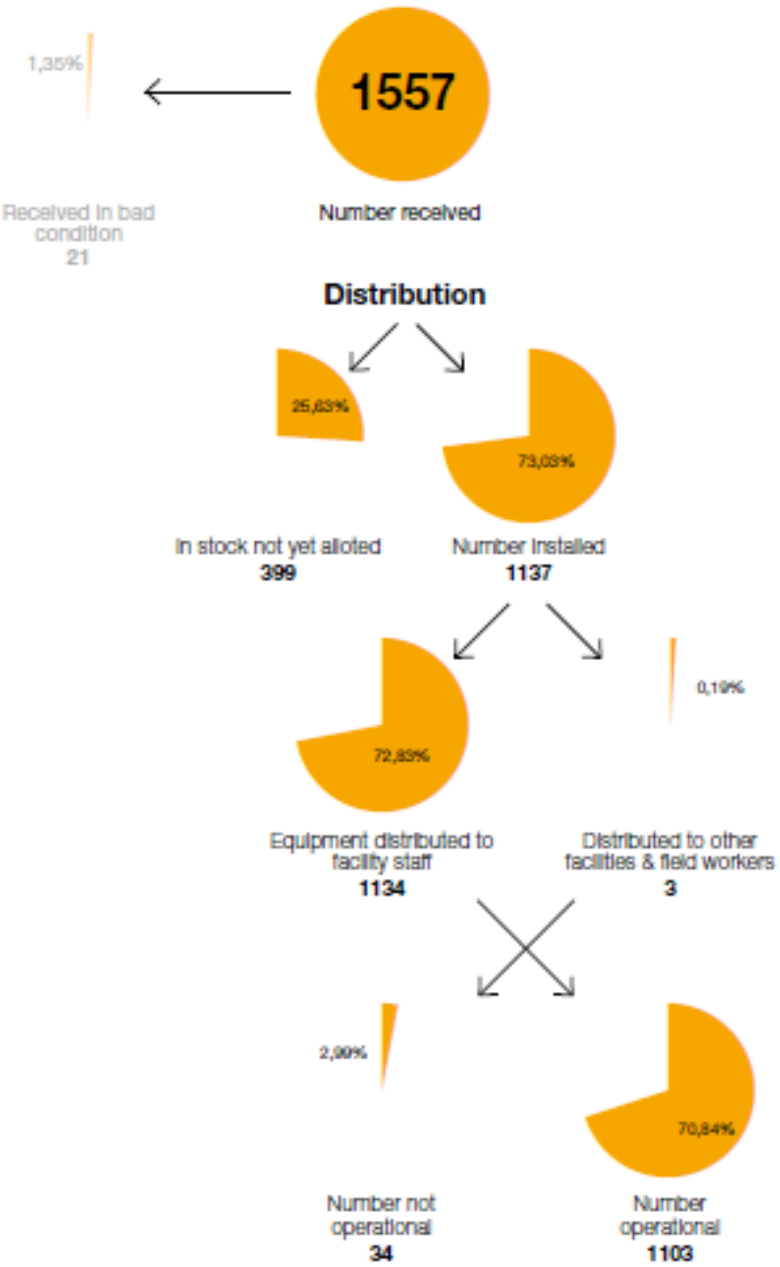
Receiving the equipment

- The equipment was received
  - Received in good condition
  - At the day of survey that equipment was mostly functional
  - Note: desktops and UPS, 25% of the total was received but not yet commissioned.

PDA


0,60%
3864
Received in bad condition 23
Number received
Distribution
2,02%
97,39%
In stock not yet alloted 78
Number installed 3763
9,70%
87,88%
Equipment distributed to facility staff 375
Distributed to other facilities & field workers 3388
9,75%
90,25%
Number not operational 367
Number operational 3396

Desktop


1,35%
1557
Received in bad condition 21
Number received
Distribution
25,63%
73,03%
In stock not yet alloted 399
Number installed 1137
72,83%
0,19%
Equipment distributed to facility staff 1134
Distributed to other facilities & field workers 3
2,99%
70,84%
Number not operational 34
Number operational 1103

Capacity building

- More than 75% of the users had received a formal training and / or orientation.
- Around 75% of all users had received the training within 6 months of receiving the equipment.
- Almost all users received a manual and refer to it.

IT TRAINING AND SUPPORT TO USERS BY TYPE OF FACILITIES

SH Specialist Hospitals
MCH Medical College Hospitals
DH District Hospitals
CSO Civil Surgeon Office
UHC Upazila Health Complex

IT training and technical support		MCH/SH	DH	CSO	UHC	GRAND TOTAL
Total respondents						212
Facilities with staff received sufficient training/support		11 91,7%	19 86,4%	23 76,7%	118 79,7%	171 80,7%
Source of Training and support	LD HIS	11 91,7%	17 77,3%	20 66.7%	115 77,7%	163 76,9%
	Colleague(s)	5 41,7%	1 4,5%	2 6,7%	22 14,9%	30 14,1%
	Private local company	1 8,3%	4 18,2%	1 3,3%	17 11,5%	23 10,8%
	Supplier of the desktops	0 0%	0 0%	0 0%	1 0,7%	1 0,5%
	Self -learned	0 0%	0 0%	0 0%	2 1,4%	2 1,4%

Capacity building

- Most users are comfortable using IT equipment and could demonstrate however:
- USC users less well versed (30% USC users could log in to DHIS2)
- 80% of managers: users received sufficient training, but do need more.

SKILLS LEARNED BY DESKTOP USERS FROM TRAINING ARRANGED FOR THEM BY TYPE OF FACILITIES

MCH Medical College Hospitals
DH District Hospitals
CSO Civil Surgeon Office
UHC Upazila Health Complex

Skills learned from training	MCH	DH	CSO	UHC
Can enter data in DHIS2	8 88,9%	14 100%	22 100%	114 100%
Can take a print	6 66,7%	14 100%	21 95,5%	110 96,5%
Can produce reports	6 66,7%	14 100%	20 90,9%	107 93,9%
Can scan a document	3 33,3%	8 57,1%	18 81,8%	84 73,7%
Can compose	7 77,8%	14 100%	21 95,5%	114 100%

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What is the IT equipment used for?

- Use of the equipment mainly for:
  - data entry
  - e-communication
  - report generation

- User's perception of quality of the equipment is positive

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Other issues and overall opinion

- Irregular power supply + absence of regular and stable internet connection are issues
  - Issues more prevalent at primary level
  - But interestingly, **no** significant impact on their work

- Users are generally positive about the added value of the HIS equipment + training
  - gained time + higher work satisfaction

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Maintenance

- 85% of facilities indicated to have some form of preventive maintenance.
  - But poor levels of updated anti-virus
- 82% of facilities has corrective maintenance
  - Mainly private local company and LD HIS and they are satisfied with the services
  - Used/needed more at primary levels
- Main problems: desktop doesn’t switch on + printer doesn’t print

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Returns on Investment

1. Financially / quantitatively
2. User perspective / qualitatively
3. LD HIS perspective / quantitative

Returns on Investment – financial

- All the equipment was purchased; with the right technical specifications; almost all distributed to the users.
- Majority of the equipment are commissioned, functional and in use
- Purchasing and distribution process has been transparent.

Returns on Investment – user

- Have the investments in the IT equipment and the capacity building efforts had a positive effect on the users' daily work?
  - ➢ According to facility managers + most users

Yes

- Less so according to Union level and HA users

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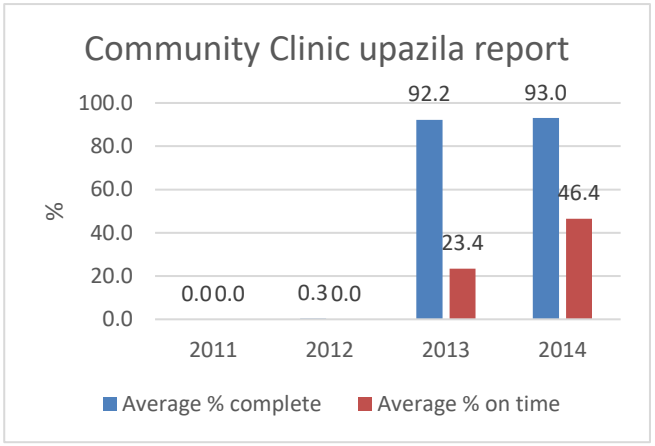
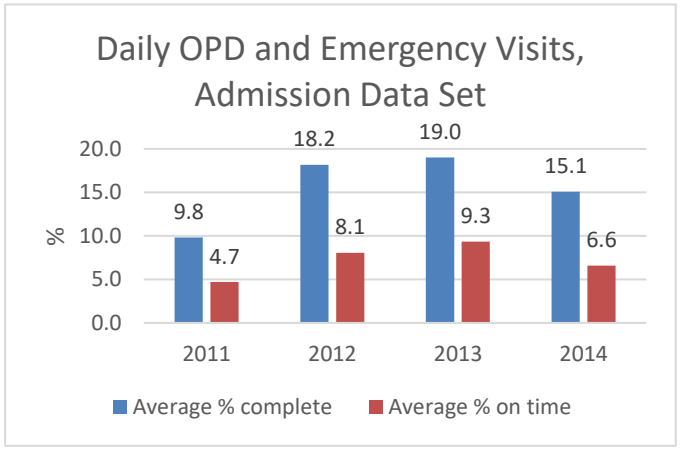
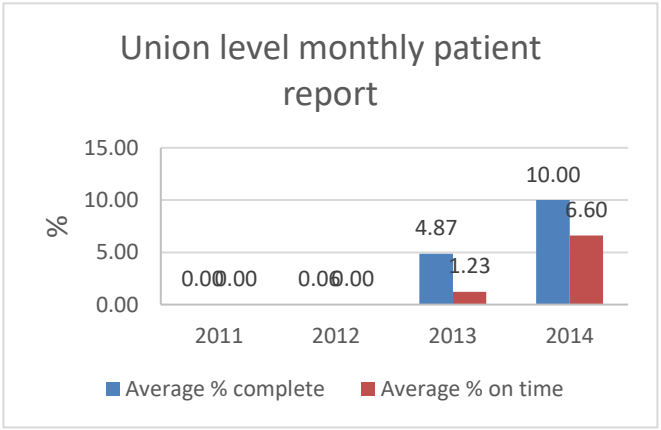
Returns on Investment – DHIS2 data

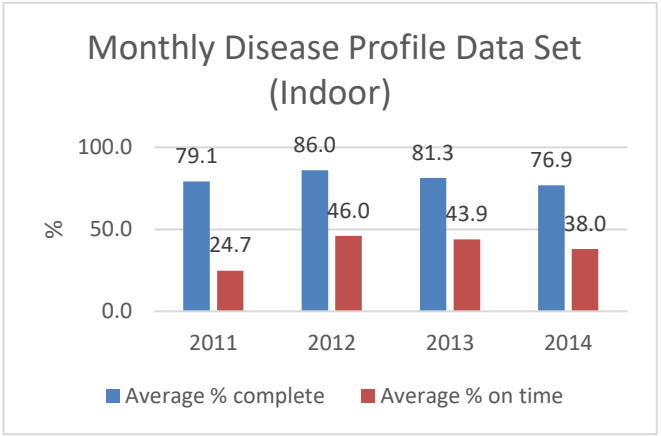
- Analysed on completeness and timeliness
- Datasets (only Rangpur, Chittagong, Dhaka) analysed:
  - Community clinic Upazila report
  - Union level monthly patient report
  - Daily OPD and Emergency Visits, Admission Data Section
  - Monthly disease profile data set (indoor)

Return on investment – DHIS2 data









Conclusions & recommendations

- Objective: “Assess the effectiveness of the investments made thus far in capacity building of HIS/eHealth and to arrive at recommendations to strengthen systems and processes for investing in further capacity building initiatives.”

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Conclusion

LD HIS has successfully managed the process so far

The investments have had a positive effect on data management in general

Recommendations

- Support LD HIS in its quest to expand the entry and use of the data in the DHIS2
- It is essential that other LDs are convinced of the utility and that they ensure data entry by their staff (horse and water)
- Stronger emphasis on preventive maintenance in training + manual (including importance of anti-virus)
- Continue supporting DGFP in developing a LMIS + strongly encourage integration in DHIS2

Recommendations

- Capacity building
  - continue, continue, continue, continue, continue, continue, continue, continue!

- Human resources
  - Continue addressing vacant statisticians posts
  - Include IT skills in the job descriptions
  - Formalise involvement of ICT focal point

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Dhonnobad!

Thank you!