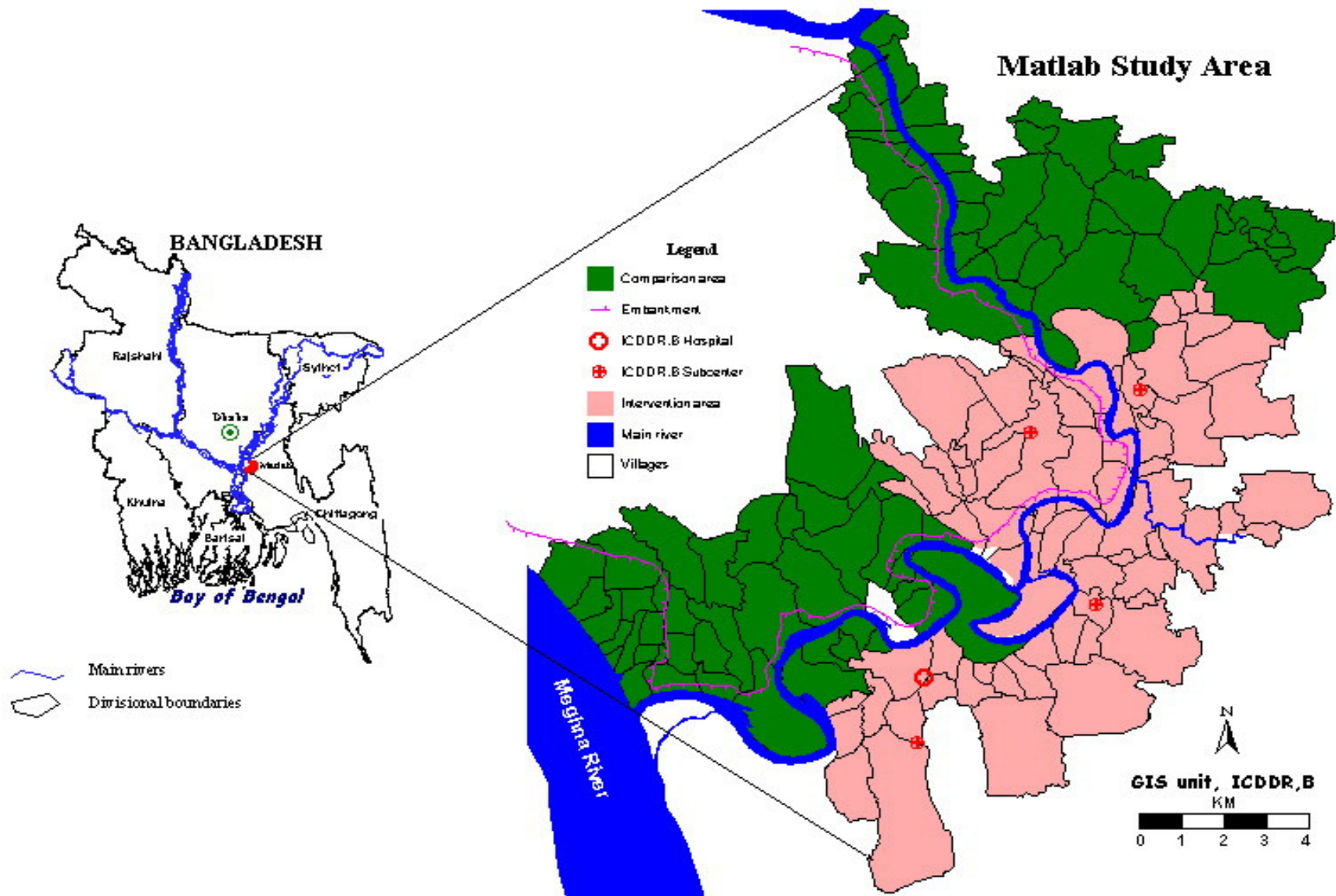

Surveillance Data collection in Matlab: Comparison of PDA and Paper

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Health and Demographic Surveillance System(HDSS) (Population: 225000)

DSS events (both area) 1966

Birth,Death,Marriage,Divorce,Internal,Mig. In, Mig.
Out, Head change

RKS ICDDR,B area

Mother – 1978

Married women's (15-49) reproduction,
contraception, tetanus, ACD

Child - 1986

Under 5 year child - Feeding, Immunization,
MUAC, Morbidity



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Health and Demographic Surveillance System(HDSS) (Population: 225000)

RKS Govt. area

Mother – 2001

Married women's (15-49) reproduction,
contraception, tetanus, ACD

Child - 2001

Under 2 year child - Feeding, Immunization,
MUAC, Morbidity

Integration of HDSS (DSS and RKS) in 2000 –
Data collection by CHRWs in a single visit



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Data collection in PDA

- ❑ In HDSS child morbidity data collection by PDA started in late 2007 (sample basis by 5 CHRW)
- ❑ Based on the experience of Child Morbidity data collection, piloting of HDSS (DSS & RKS) data collection by PDA was began in March 2010 by 4 existing CHRWs
- ❑ Program being written and modified having feed-back from field visit
- ❑ Loaded Master database in PDA
- ❑ All logical and consistency checks in PDA program



Data collection in PDA (cont.)

- ❑ Based on piloting of HDSS data collection (4 CHRW), steps for full implementation was undertaken
- ❑ 2 weeks training for CHRWs, FRAs and FROs
- ❑ Initially, data transferred from forms to PDA
- ❑ Data collected by PDA and transfer to forms
- ❑ QC data by PDA compared with PDA data of CHRWs as well as paper copy (forms)



Implementation of PDA in HDSS-2011

HDSS 11:46 **ok**

Village: **V56** Household **0386**

Birth	Migration In
Death	Migration Out
Marriage	Internal
Divorce	Head Change
RKS Mother	RKS Child
Backup(SD)	SES
Close	

Birth 11:50 **ok**

rid	cid	name
3V56018407	V56038602	ASMA AKTER
3V56018408	V56038603	AZHIN
4V56020709	V56038604	IRIN

CENSUS

CHW	UNIT	SEQ_NC	SRNC	CRID
101	26	1	1	4D00040015
101	27	2	1	4V10003211

BIRTH **Search**

Page 1 | Page 2 | Page 3 | **Brows**

New **Edit** **Save** **Close**

Objectives

- ❑ Discuss HDSS data collection by PDA
- ❑ Compare paper-based data collection with PDA- based data collection



Methodology

- ❑ Observation of data collection in PDA and Paper
- ❑ Filling of data fields in PDA and Paper
- ❑ Duration of Data capture in Paper and PDA
- ❑ Finding errors and problems in PDA



Key strokes in DSS form

	Paper		PDA		
Forms	Total Box	Box filled by CHW	Box to be filled	Key stroke	Key saved
Birth	205	181	113	62.43	37.57
Death	93	86	22	25.58	74.42
Mig. In	249	239	214	89.54	10.46
Internal	305	287	237	82.58	17.42
Marriage	164	148	61	41.22	58.78
Head chan	392	360	151	41.94	58.06
Out Mig.	327	319	134	42.01	57.99
Total	1735	1620	932	57.53	42.47



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Duration of coding: PDA and Paper (From field observation)

Events	Paper time (min.)	PDA time (min.)
Birth	20	8
Death	10	4
Marriage	15	10
Divorce	15	10
Migration In	20	10
Migration Out	15	9
Internal	20	10
Head change	20	10
Total	135	70

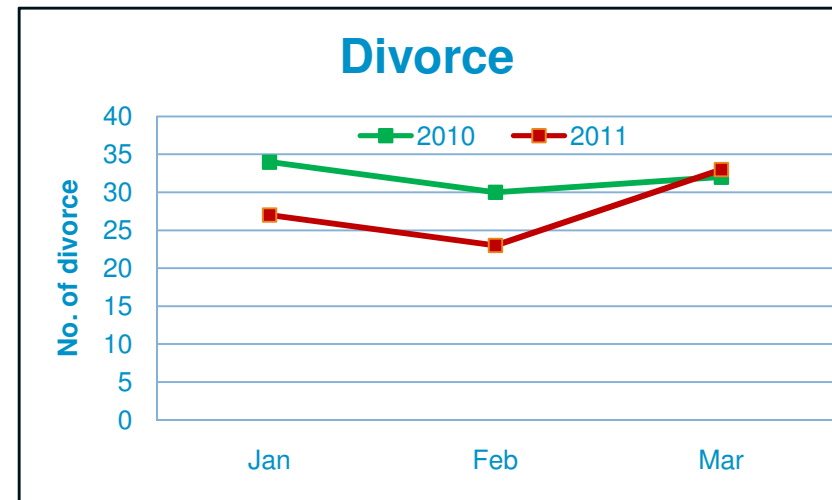
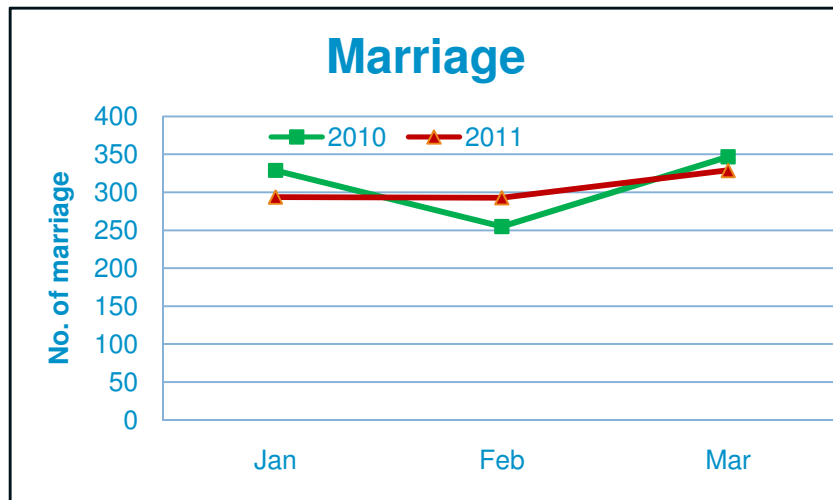
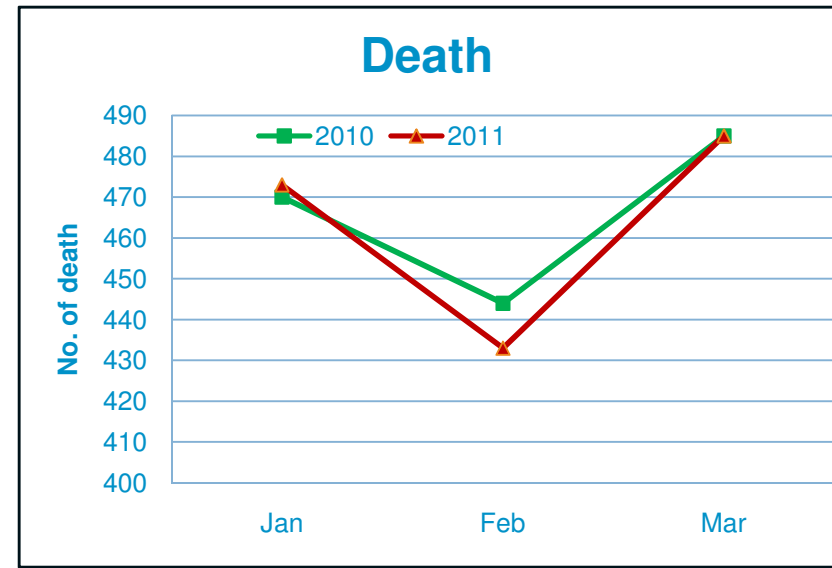
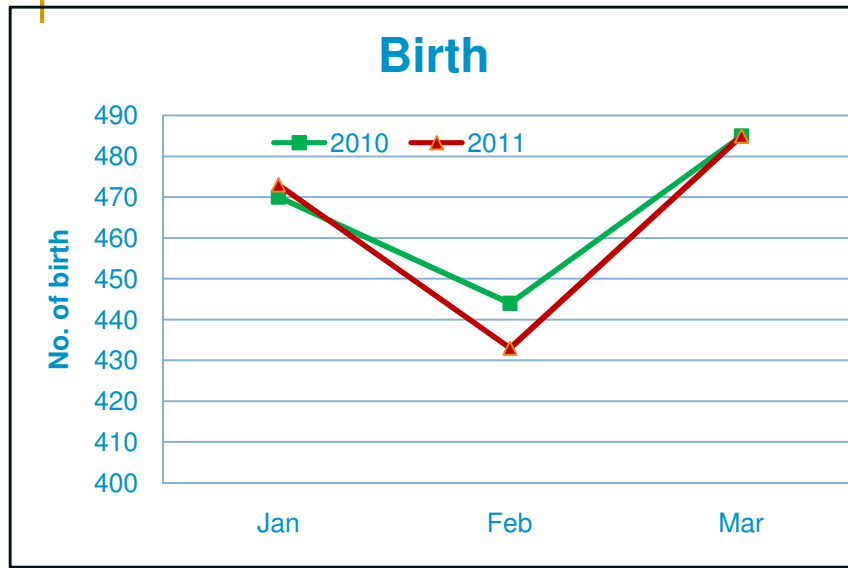
Duration of interview (asking questions) remains same for both



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Event collection 2010(paper) and 2011(PDA)



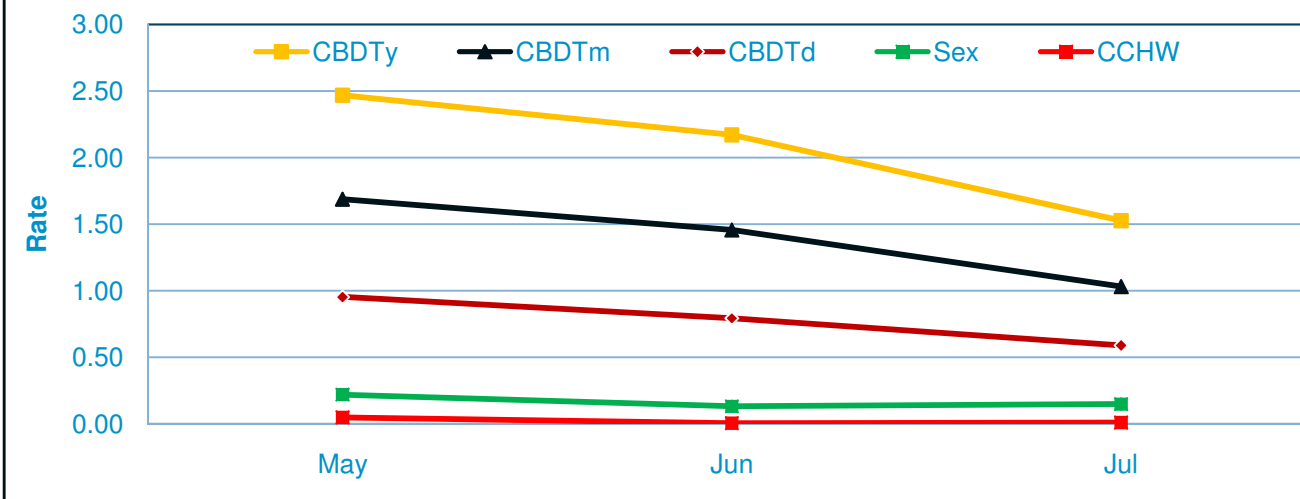
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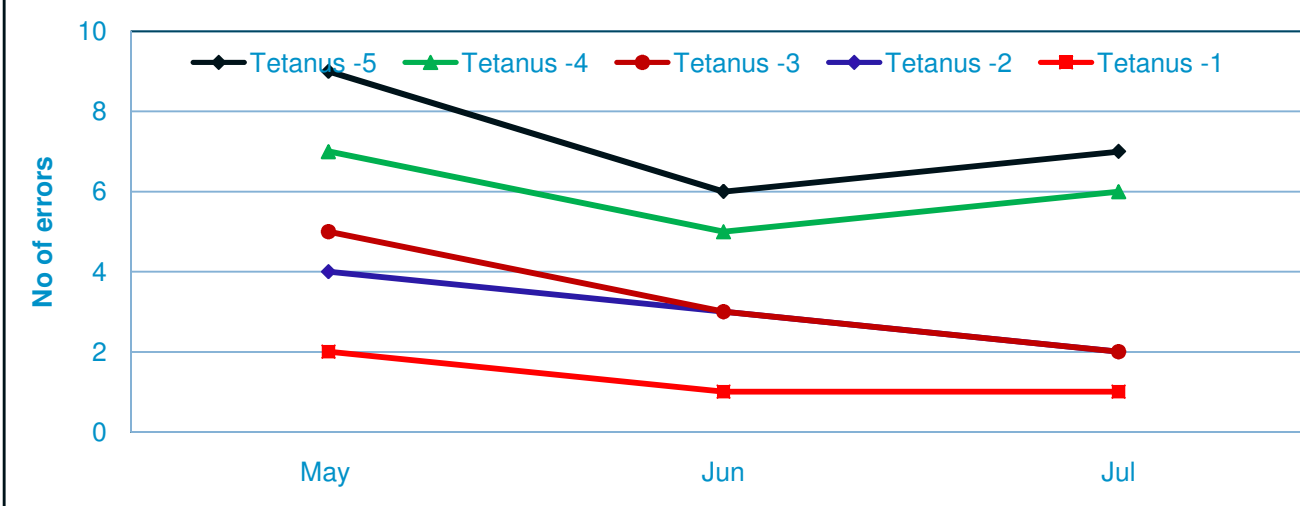
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Child errors by month



Mother errors by month



Data entry and pre-edit check

- ❑ Data entry in the root (field) level
- ❑ Pre-entry checks
 - ❑ Range
 - ❑ Logical
- ❑ Data Validity check and data retrieval
 - ❑ Stored data (Basetab)



Comparison of Paper and PDA

Paper	PDA
<p><u>Merit</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Written documents<input type="checkbox"/> Entered data can be checked backward with paper form <p><u>Demerits</u></p> <ul style="list-style-type: none"><input type="checkbox"/> No logical checks at the time of data collection<input type="checkbox"/> Erase and overwriting problem<input type="checkbox"/> Time consuming	<p><u>Merit</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Direct softcopy<input type="checkbox"/> Multiple copy can be maintained<input type="checkbox"/> Saves time <p><u>Demerits</u></p> <ul style="list-style-type: none"><input type="checkbox"/> Error: Respond to entry (PDA)<input type="checkbox"/> Mechanical<input type="checkbox"/> Lost<input type="checkbox"/> Maintenance<input type="checkbox"/> No document (Hardcopy)



Experience of PDA use

- ❑ Some existing CHRW are not up to the standard for PDA work
- ❑ 3 PDA motherboard disturbance out of 65 in 6 month
- ❑ HP stopped producing PDA



Warning and Challenges

- ❑ PDA manufacturing stopped
- ❑ Every month PDA problem
 - ❑ Touch screen not sensor
 - ❑ Program cross linked
 - ❑ Windows and buttons erased
- ❑ Technological change
 - ❑ Rapid change of PDA model and language
- ❑ Programmers involvement increased
 - ❑ Need to re-write program (smart phone android based)



Benefits of PDA use

- ❑ No Data entry backlog in 2011
- ❑ Quick support to other projects
- ❑ Timely data supply in head office
- ❑ Timely annual report generation (expected 2011)



Results

- ❑ HDSS data collection by PDA by 38 CHRW from Jan,2011
- ❑ Data collected from CHRWs in the sub-center meeting (SD card) to laptop
- ❑ Data download from PDA to PC every 15 days
- ❑ Data uploaded to ORACLE database within 20 days
- ❑ Support other project providing PDA data in short period of request



Conclusion

- ❑ No data entry in the office
- ❑ Data available in 2 weeks
- ❑ Less entry lead to less error
- ❑ Data analysis and distribution in time
- ❑ Multiple copy of data set preserved
- ❑ Supervisory checks of errors conducted in Laptop in the sub-center
- ❑ PDA facilitate quick decision making and improve data quality



Thank You!



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