Gains in Afghan Health: Too Good To Be True?

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Background: Afghan Mortality Data

- Child mortality: Under-5 Mortality Rate (U5MR)
- Maternal mortality: Maternal Mortality Ratio (MMR)
- Sparse data on U5MR prior to 2001
  - 1972 survey
  - 1979 census
  - 1997, 2000 MICS
  - All used a summary birth history and indirect estimation methods
- No known data on MMR prior to 2001
  - Major motivator for survey

Mortality Data Post-2001

- High interest in monitoring mortality trends post-2001
  - To assess impact of health programs
  - Especially child mortality (U5MR) and maternal mortality (MMR) because of MDGs
- Flurry of surveys:
  - 2002 Reproductive Age Mortality Survey
  - 2003 MICS (full birth history)
  - 2007-08 National Risk and Vulnerability Survey
  - 2007 “Demographic and Health Survey”
- Serious doubts expressed about estimates from all the surveys
- Hence perceived need for a new survey implementing internationally-accepted methodologies and standards

The Afghan Mortality Survey 2010

- Field implementation:
  - Afghan Public Health Institute
  - Central Statistics Organization
- Technical and logistical assistance:
  - ICF-Macro
  - Indian Institute for Health Management Research
  - WHO/EMRO
- Technical guidance:
  - TAG of recognized experts
- Major funders: USAID, UNICEF

Mortality-Related Data in AMS

- Household questionnaire:
  - Household deaths in last 5 years by age and sex
  - Survival of parents
- Woman questionnaire (ever-married 12-49):
  - Full pregnancy history
  - Full sibling history
- Verbal autopsy:
  - For household deaths in 3 years before survey
    - 28 days and younger
    - 1 month to 11 years
    - 12+ years

AFGHANISTAN

Sampling

- 3 domains (North, Central, South)
  - Urban by domain, rural by province (34 strata)
- EAs obtained from 2011 Census preparatory frame
- 751 EAs selected PPS; 32 households selected per EA
  - 37 EAs not surveyed, 34 for security issues
  - No interviews in rural Helmand, Kandahar, Zabul
  - Supervision issues in South zone
- 98% (North), 99% (Central) and 66% (South) of sample surveyed (87% total)

Fieldwork and Response Rates

- Fieldwork conducted April to December 2010
- Response rates typically high:

		Residence		Total
		Urban	Rural	
Households	Interviewed	7,099	15,252	22,351
	Response rate (%)	97.8	99.4	98.9
Eligible women	Interviewed	14,936	32,912	47,848
	Response rate (%)	97.5	98.5	98.2

Results: Child Mortality Face Value

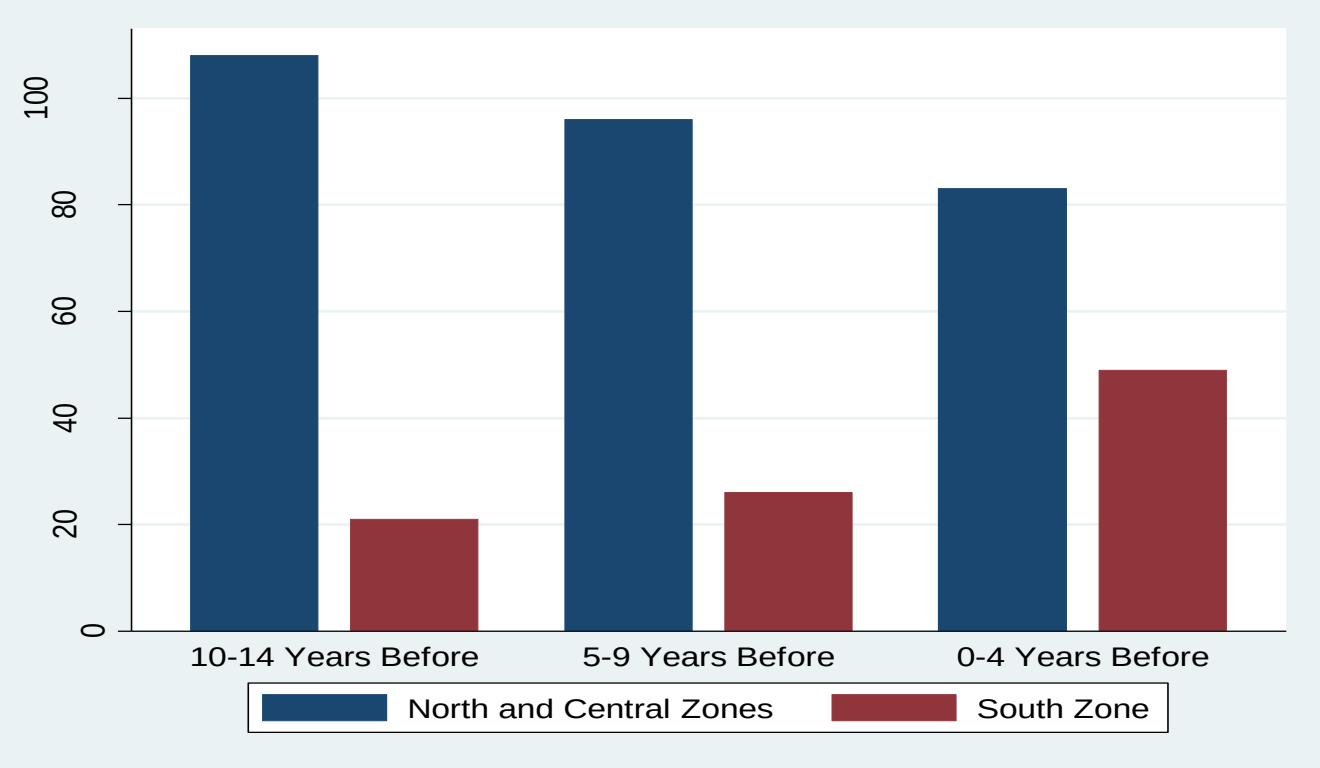
Rates per 1,000 exposed

Indicator	Source of Estimate			
	Household Deaths	Pregnancy History		
Period:	2006-2010	2006-2010	2001-2005	1996-2000
Neonatal	N/A	25	25	25
Postneonatal	N/A	29	28	32
IMR	65	55	53	57
Child	20	17	20	24
U5MR	84	71	72	80

Source: Afghanistan Mortality Survey 2010: Final Report. Table 5.1.1

Concerns with Child Mortality Results: 1

- Implausible time trends for South Zone:



Source: Afghanistan Mortality Survey 2010: Final Report. Figure 5.1

Concerns with Child Mortality Results: 2

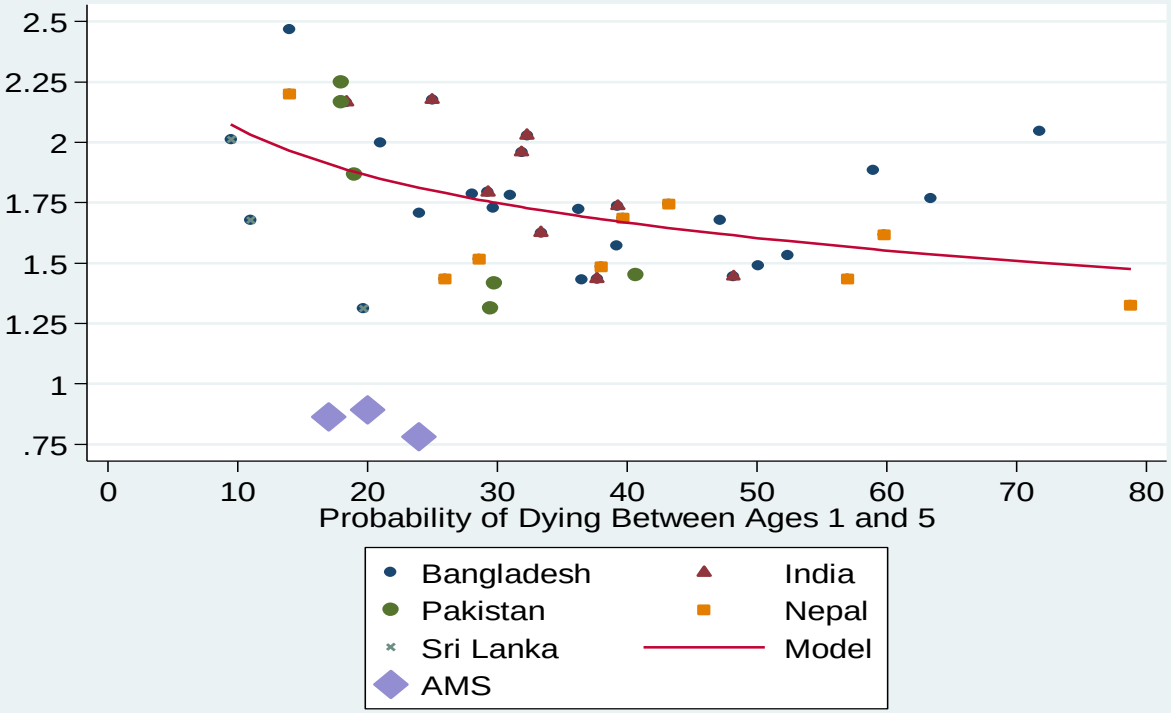
- Sex ratio at birth (Males/100 Females)

Period	Zone			Total
	North	Central	South	
2006-10	107.2	110.0	129.9	115.7
2001-05	99.8	109.9	138.3	115.3
1996-00	105.7	110.5	111.1	109.2
1991-95	106.5	100.9	97.5	101.5

Source: Afghanistan Mortality Survey 2010: Final Report. Table C.5

Concerns with Child Mortality Results: 3

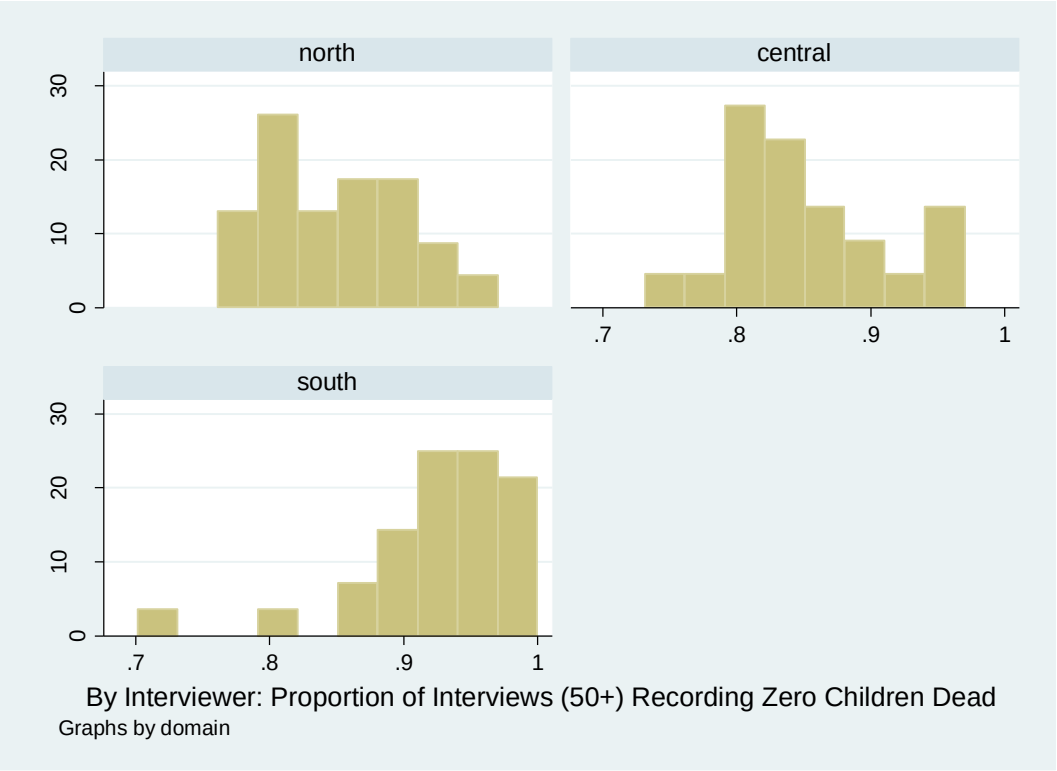
- Under-reporting of neonatal deaths relative to regional DHS surveys (NN:PNN Ratio):



Source: DHS data, AMS Table 5.1.1

Concerns with Child Mortality Results: 4

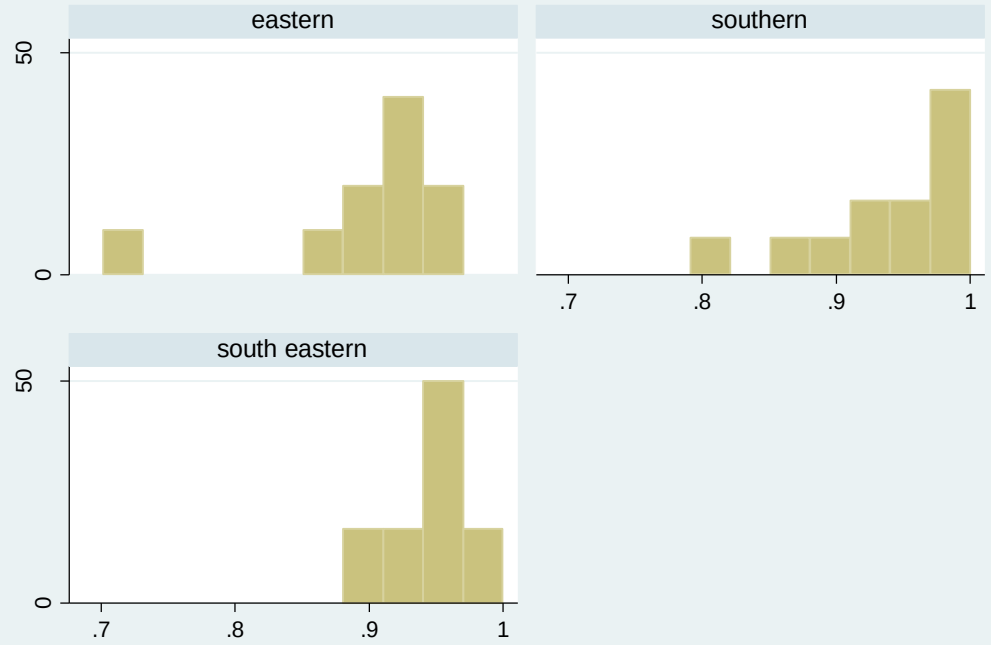
- By interviewer: proportion of birth histories with zero children dead



Calculated from IR survey dataset

Concerns with Child Mortality Results: 4

- By interviewer: proportion of birth histories with zero children dead (South zone only)



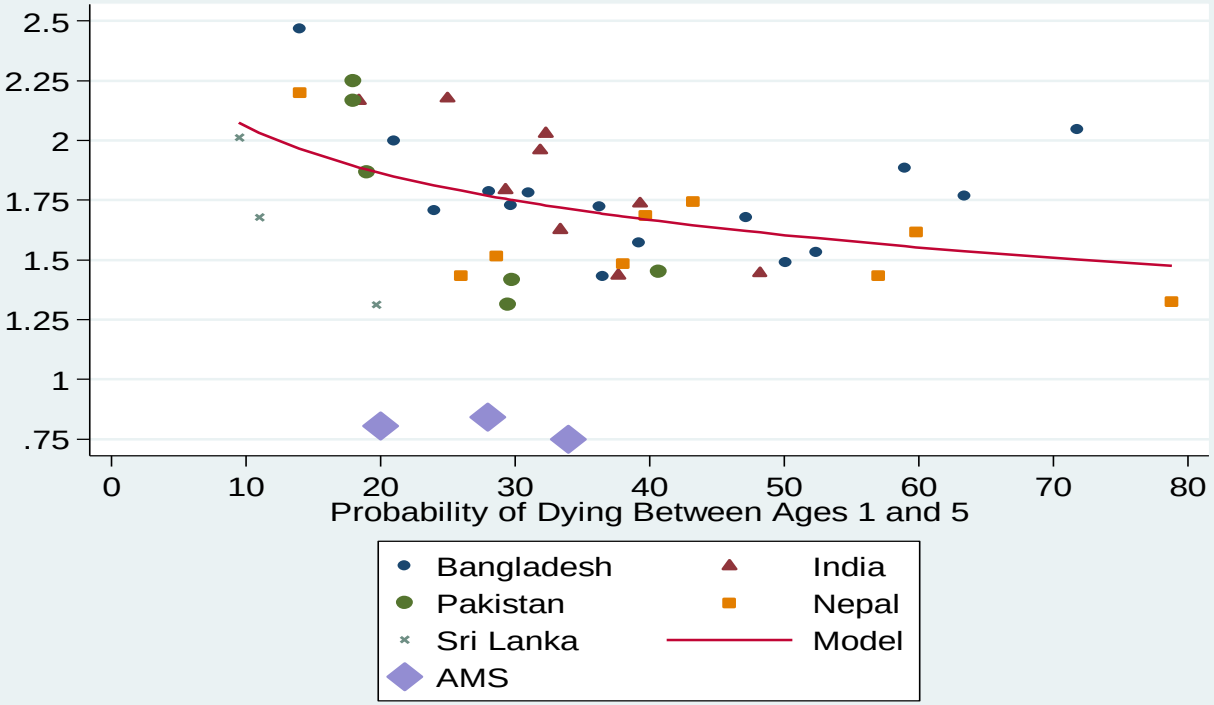
Calculated from IR survey dataset

Conclusions on Child Mortality So Far:

- Results from South zone particularly weak
  - Low coverage of rural areas
  - Implausible time trends
  - Sex ratio at birth
- Overall results show implausible Neonatal: Postneonatal ratio
- High proportions of interviewers recording no child deaths
- So limit analysis to North and Central zones?

Neonatal/Postneonatal Ratios in North and Central Regions vs. S. Asia DHS

- North and Central are no better:

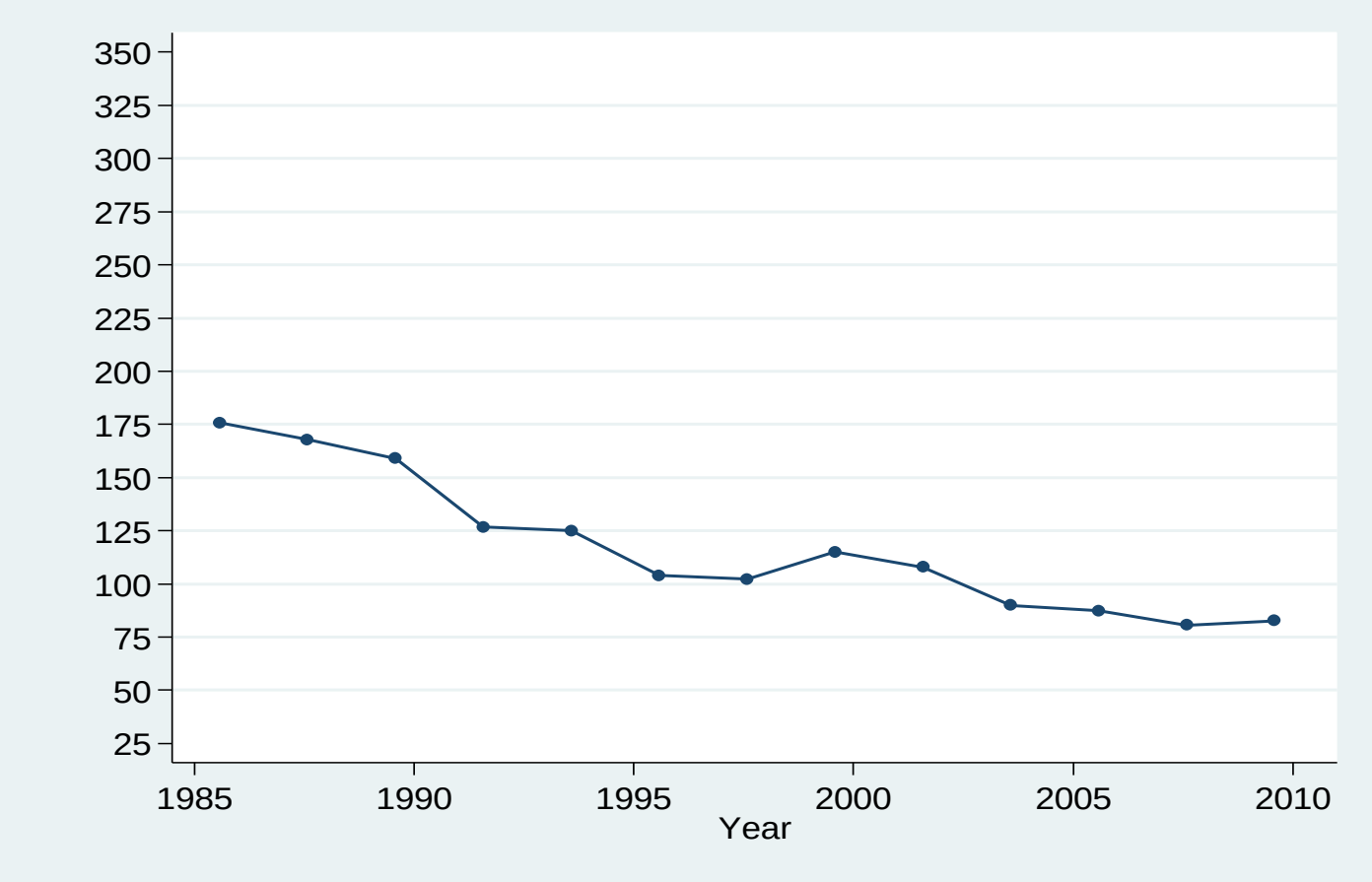


Source: DHS data, AMS Table 5.1.2

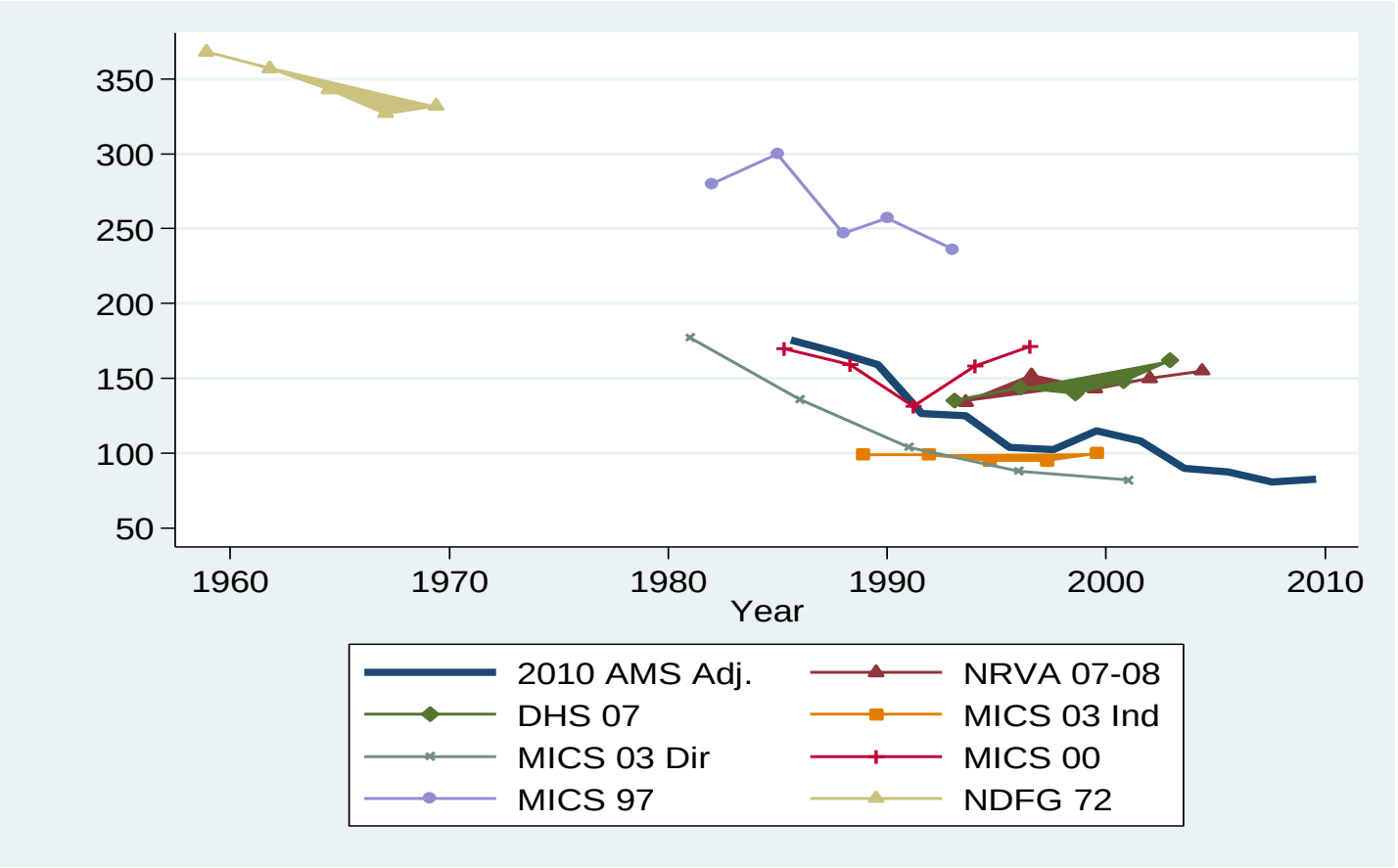
Adjusted U5MR Series

- Limit analysis to North and Central zones
- Adjust neonatal mortality rate to fit NNMR/PNNMR ratio model
- Recalculate adjusted U5MR time series
- Plausibility review:
  - Compare with estimates from other Afghanistan surveys
  - Compare with UN estimates for neighboring countries

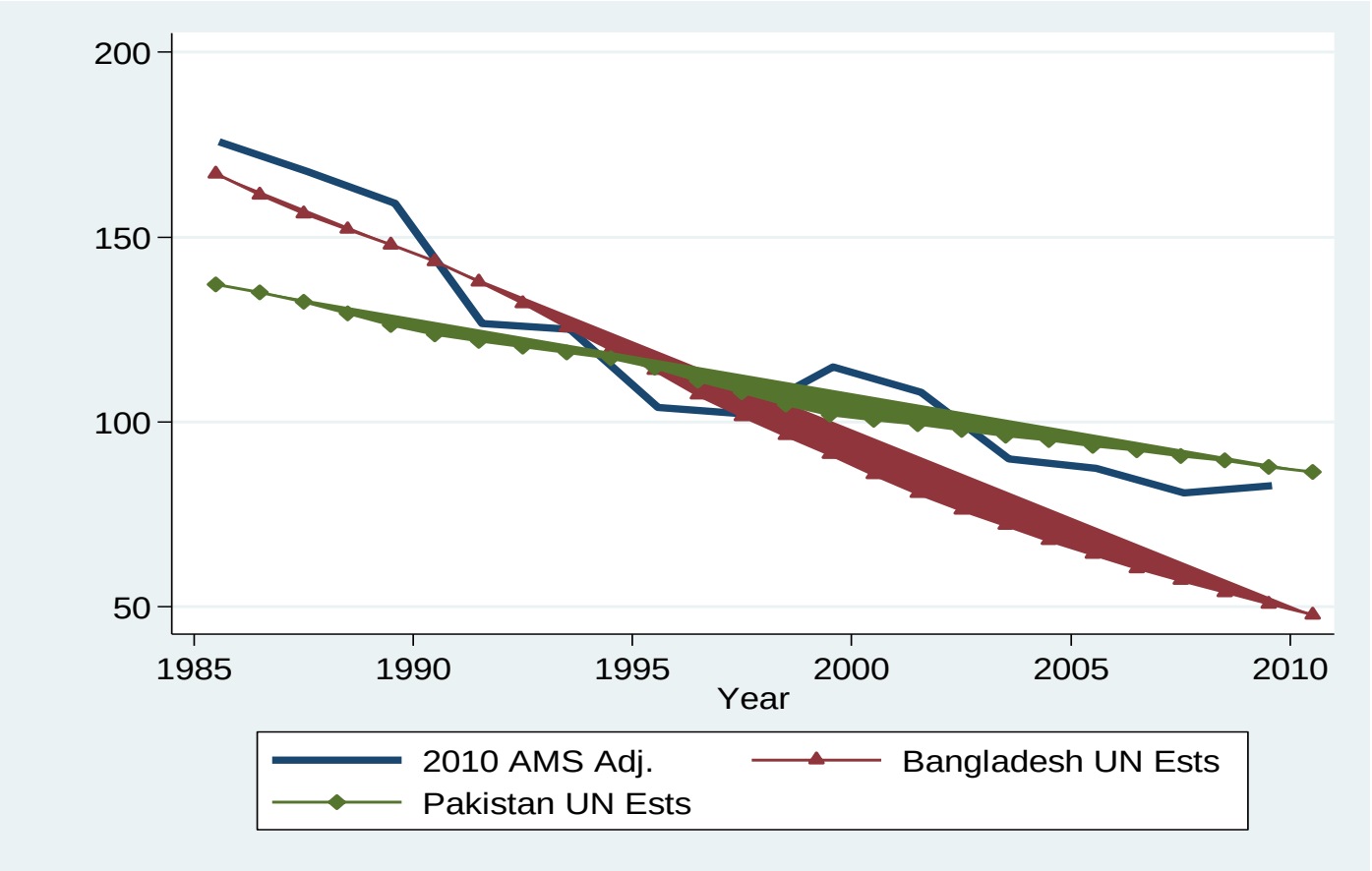
AMS U5MR Estimates (Adjusted) 1985-2010



AMS Estimates with Other Survey Estimates



AMS Estimates with UN Regional Estimates



AMS Child Mortality: Discussion

- Estimates are limited to data from North and Central zones
- Substantial adjustment for evidence of under-reported neonatal deaths
  - AMS used a pregnancy history; unlike most DHSs
- Plausibility:
  - Was Afghan U5MR comparable to that of Bangladesh up to late 1990s?
  - Is Afghan U5MR lower today than in Pakistan?
- If results are accepted, annual rate of decline in U5MR is 3.3% since 2001 (vs. 4.4% for MDG-4)

Adult and Maternal Mortality

- Previous studies:
  - No data on overall adult mortality
  - 2002 RAMOS for maternal mortality
- AMS sources of data:
  - Full sibling history
  - Deaths in household in last 5 years
  - Verbal autopsy (to identify maternal deaths)
  - Survival of parents (not examined here)
- Format is very similar to Bangladesh Maternal Morbidity and Mortality Surveys, 2001 and 2010

Overall Adult Mortality: Reported Probability of Dying between the Ages of 15 and 50

	Sibling History			Household Deaths		
	AMS*	BMMS-2001	BMMS-2010	AMS*†	BMMS-2001	BMMS-2010
Period Before Survey	0 to 4	0 to 4	0 to 4	0 to 4	0 to 3	0 to 3
Females	0.052	0.084	0.060	0.086	0.079	0.048
Males	0.071	0.083	0.070	0.090	0.083	0.072

* AMS estimates are for whole sample; there were no clear differences between the North and Central zones and the South zone

† "Growth Balance" analysis suggests completeness of reporting around two-thirds (but method is sensitive to migration)

Maternal Mortality: Previous Estimate

- 2002 “RAMOS” study
  - Conducted in 4 (of maximum variability in “remoteness”) of 360 districts
  - Format was household deaths of women of reproductive age with VA follow-up
  - Estimated MMR (per 100,000 live births) at between 1,600 and 2,200

AMS: Pregnancy-Related and Maternal Mortality

	Pregnancy-Related Mortality Ratio – Sibling History			Maternal Mortality Ratio – Household Deaths and VA		
	AMS*	BMMS-2001	BMMS-2010	AMS*	BMMS-2001	BMMS-2010
Period Before Survey	0 to 6	0 to 4	0 to 4	0 to 4	0 to 3	0 to 3
/100,000 LB	327	449	301	374	322	194

* AMS estimates are for whole sample; there were no clear differences between the North and Central zones and the South zone

Discussion: Adult and Maternal Mortality

- AMS sibling history estimates (overall and pregnancy-related mortality similar to or lower than in Bangladesh) are implausible
- Estimates based on household deaths are somewhat higher
  - But are much lower than international estimates or the results of the 2002 survey
  - Analysis suggests underreporting of household deaths
- Hard to have confidence in the results

The AMS: Conclusion

- Used state-of-the-art methodology
- Conducted with all possible diligence
  - Supervision problems in insecure areas
- Results have serious flaws
  - Clear error patterns in child mortality estimates
  - Lack of “face validity” even after adjustment
  - Adult and maternal mortality estimates also implausible
- Conventional data collection in conflict zones doesn’t seem to work
  - We need new approaches

Thank You