

Completing the incomplete: Estimating the extent and trend in completeness of registration of births and deaths in South Africa

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Lessons learned from local initiatives supporting
sustainable civil registration and vital statistics
(CRVS) systems in Africa

IUSSP side meeting at the 7th African Population Conference,
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28 November 2015

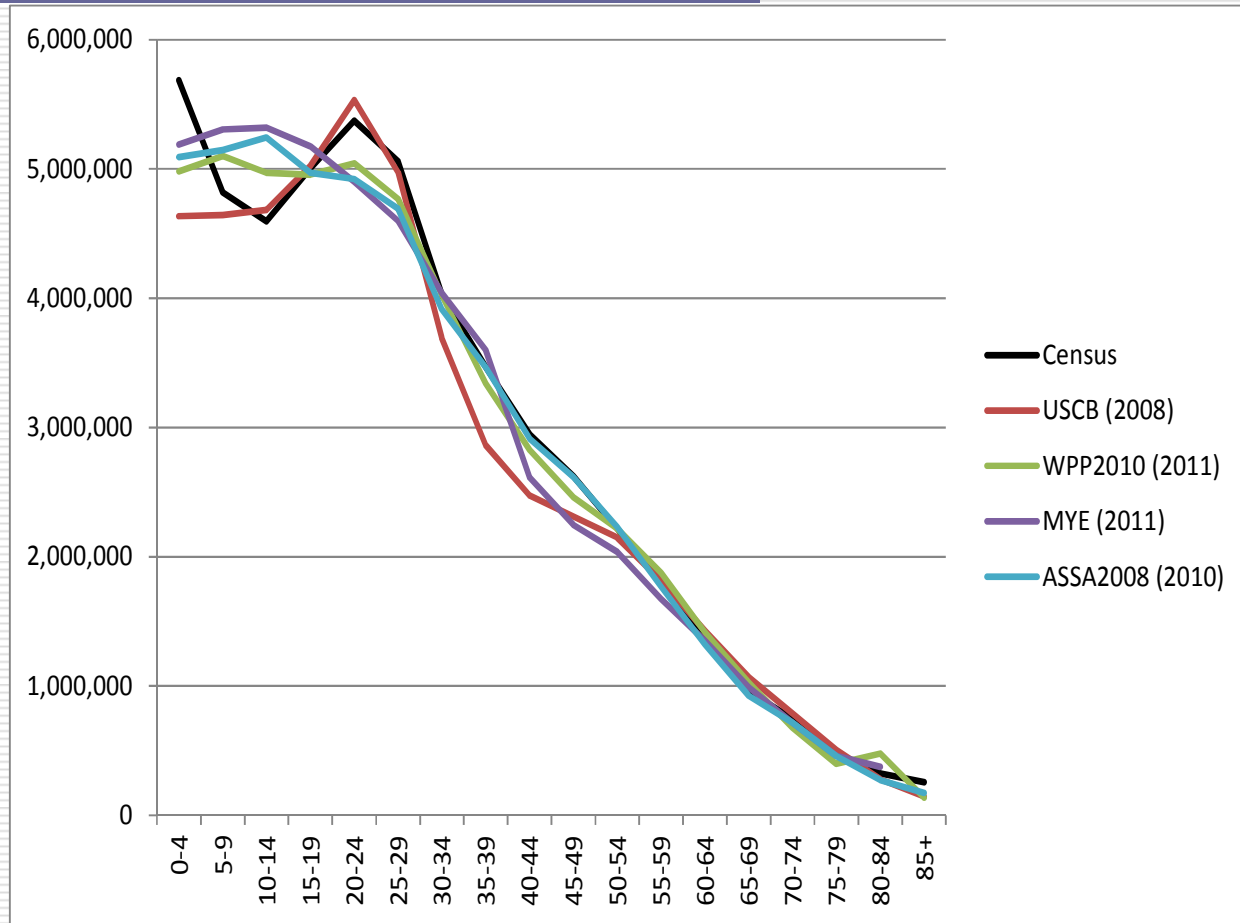
Background

- ❑ National legislation regulating VR, 1923
- ❑ Under Apartheid, this focussed on 'Whites', and later 'Coloured' and 'Indian/Asian' but not 'African'
- ❑ Only in the mid-1980s required of all Africans living in what was designated the "RSA"
- ❑ Only since 1994, efforts to register births and deaths of all South Africans - it took a number of years to extend the system to the TBVC homelands
- ❑ Late 1990s, rapid increase in the numbers registered
- ❑ Accompanied by an hiatus in the release of annual update
- ❑ The 'debate' about the impact of the HIV/AIDS epidemic focussed attention on the need for data but also on the assessment of the quality

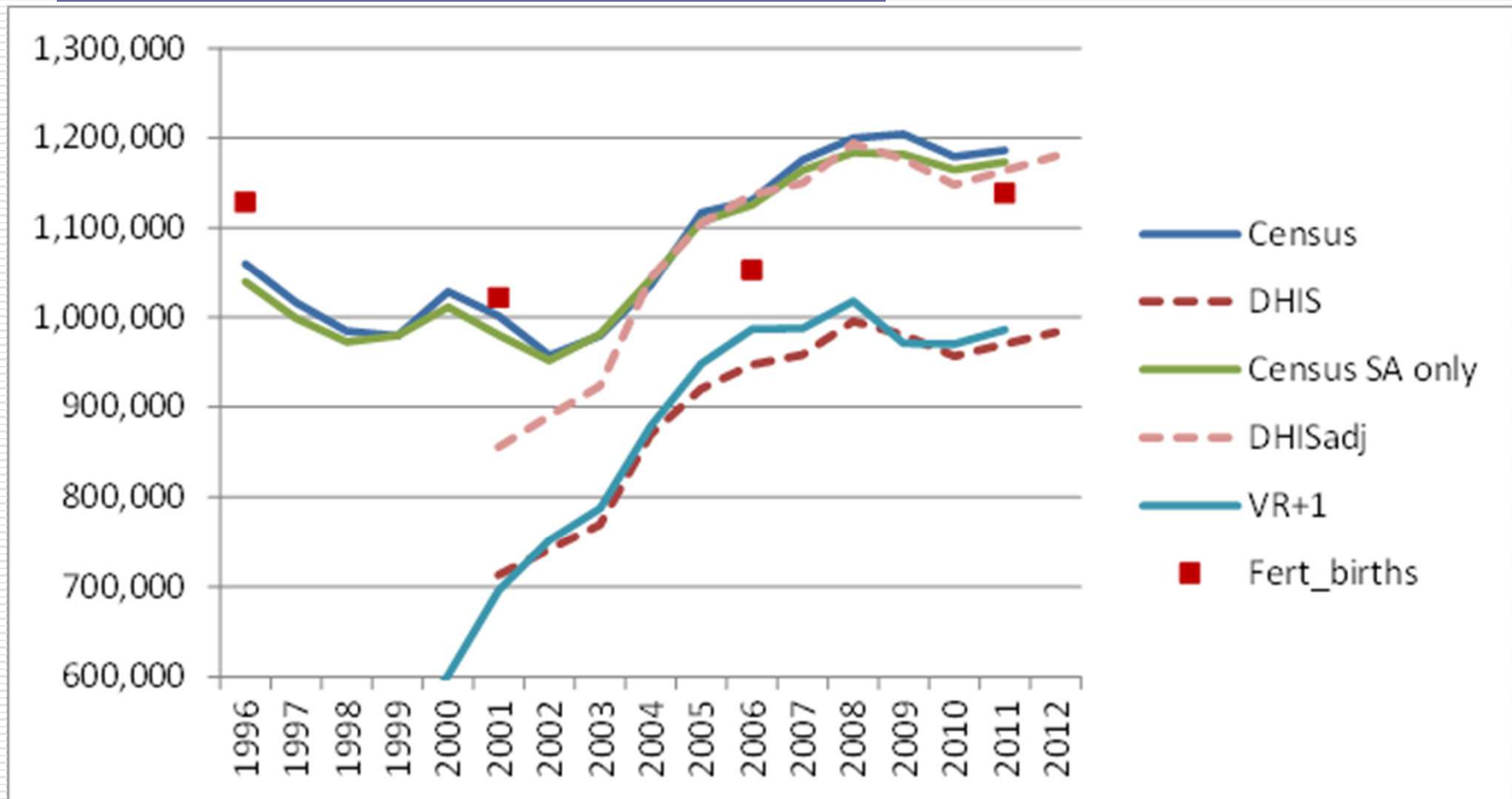
Births: Method

- Various researchers: Moultrie & Timæus (2003), Moultrie & Dorrington (2004), Nannan, Dorrington & Bradshaw (2015), Dorrington & Moultrie (2015)
- Dorrington & Moultrie: Compared estimates of births from reverse-surviving census numbers by age with various other estimates to establish if they are plausible (which is groundwork for best estimate of no. births)
- Estimated completeness from comparison of VR births to these estimates

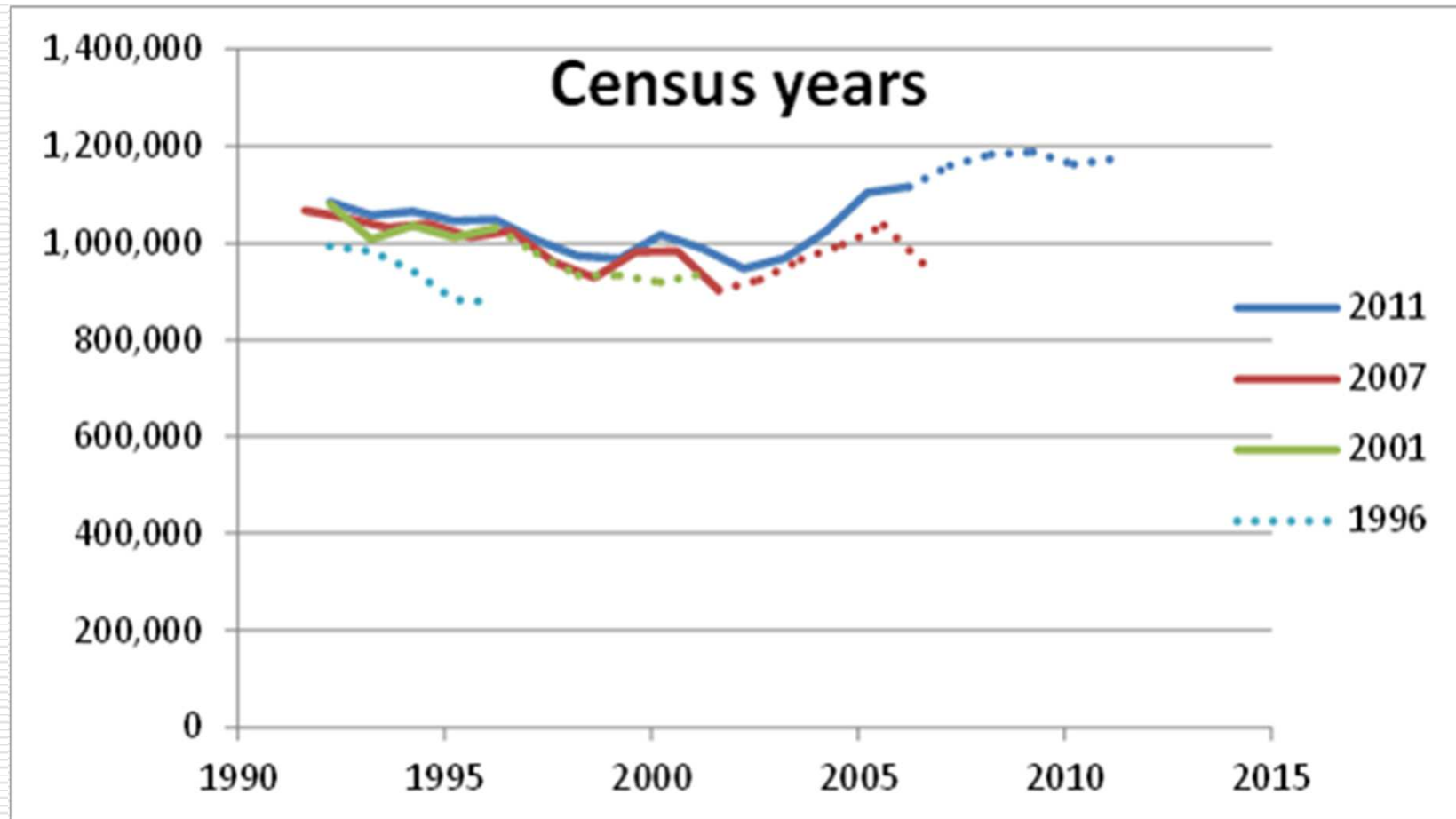
Births: 2011 Census age distribution



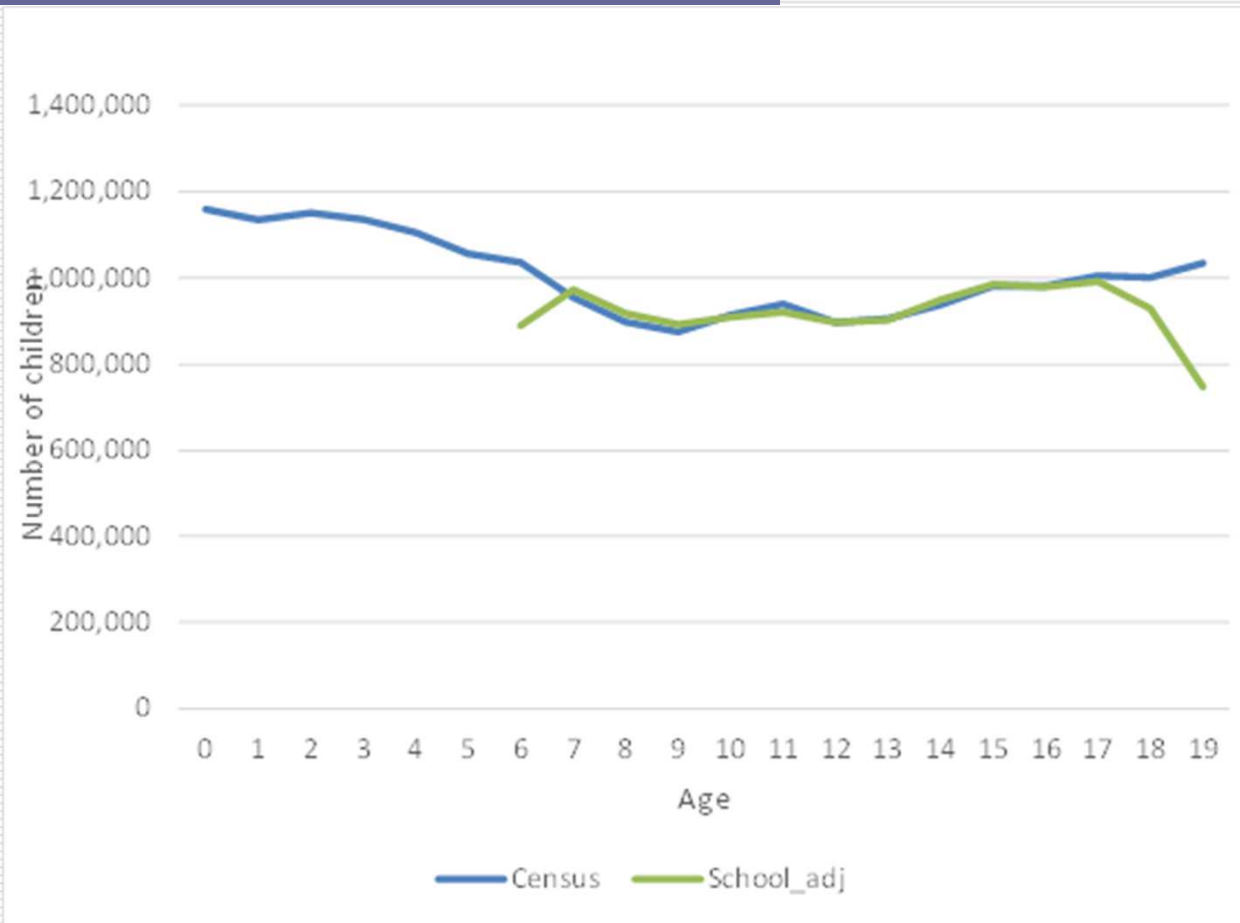
Births: VR vs other estimates



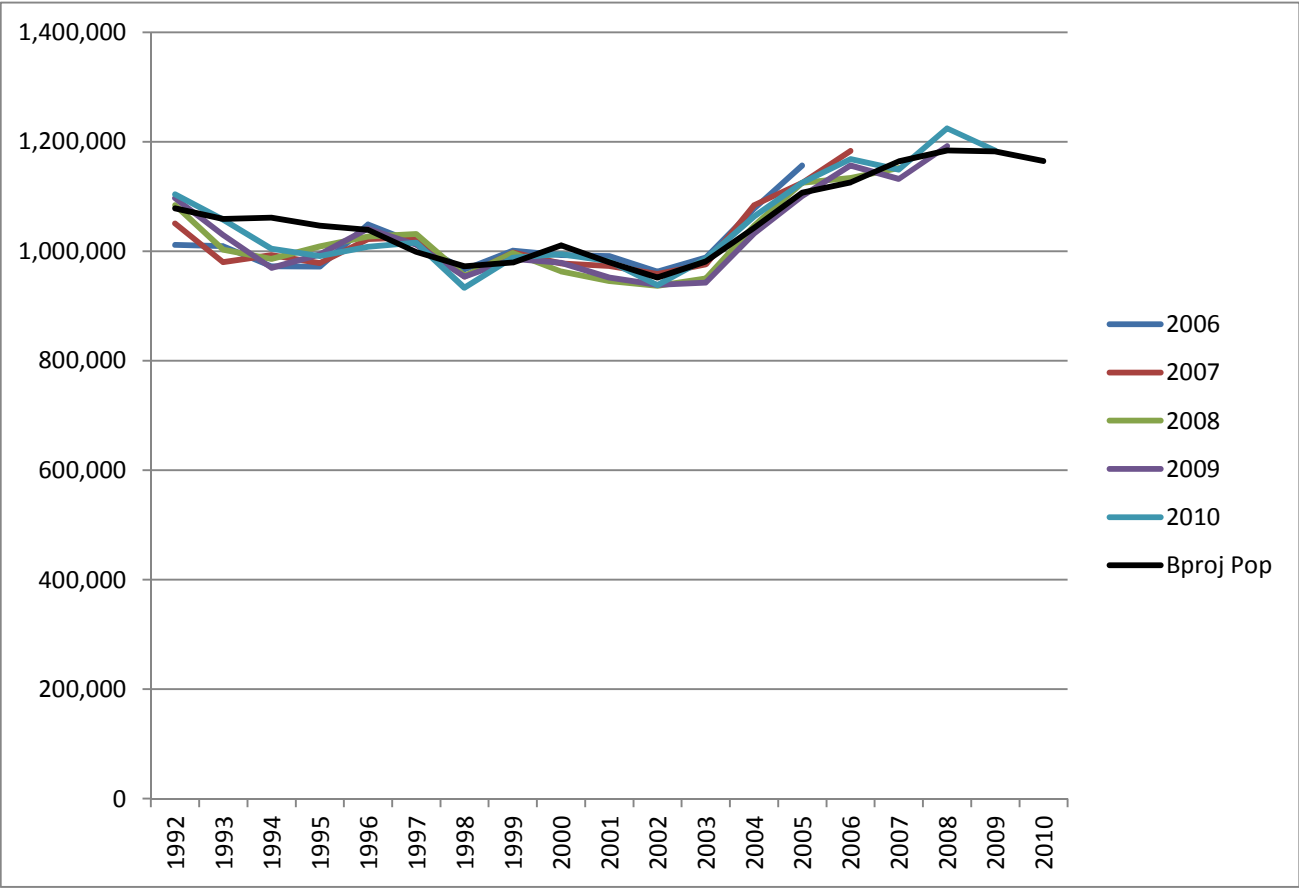
Births: Implied by censuses



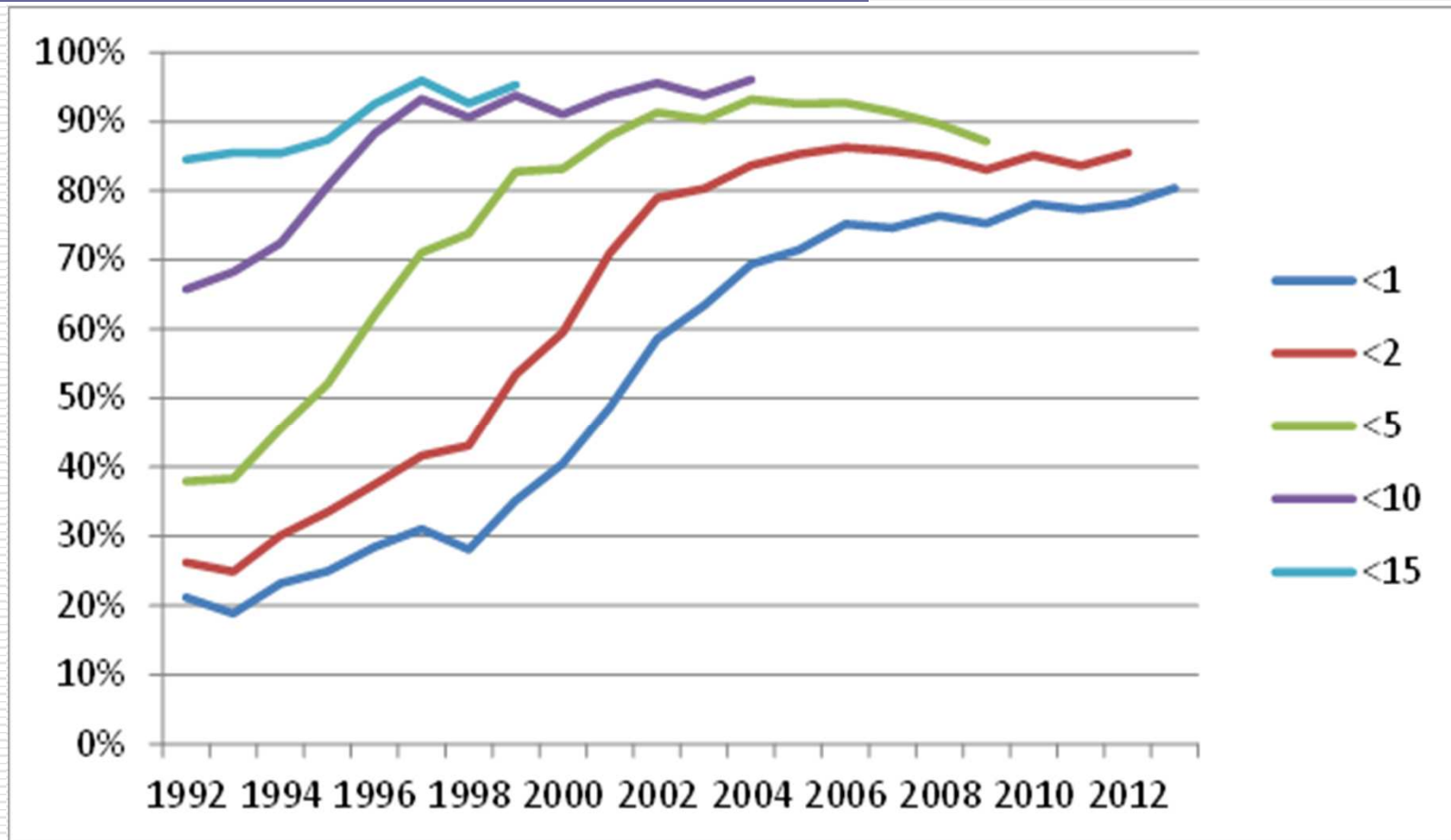
Births: Numbers aged 7-17



Births: VR vs PR



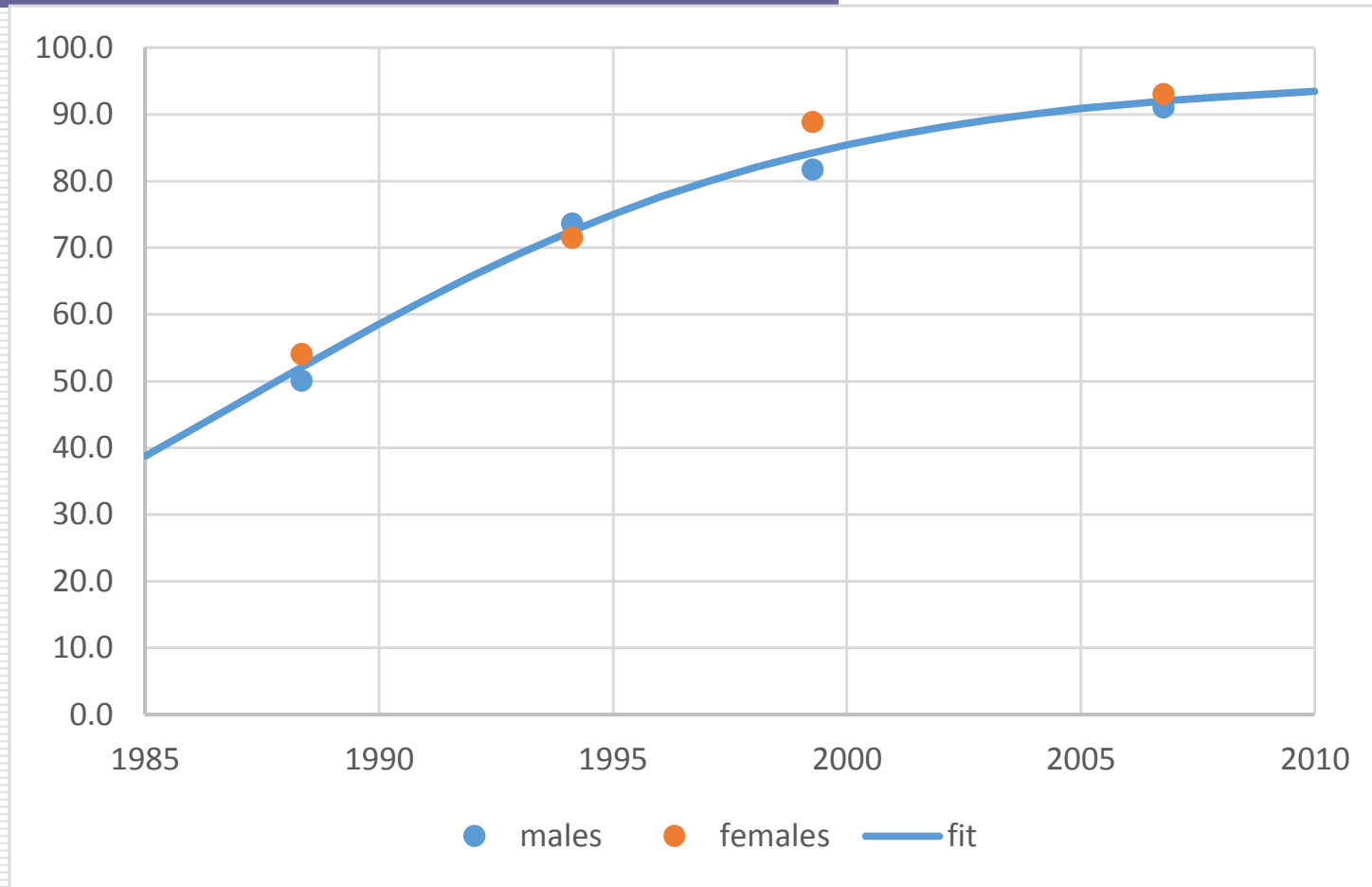
Births: Implied completeness by age



Adult deaths: Method

- Various researchers: Dorrington, Bradshaw & Wegner 1999; Dorrington, Moultrie & Timæus 2004; Richman & Dorrington 2015; and Dorrington & Timæus 2015
- Richman & Dorrington: Applied DDMs (SEG) to estimate completeness of reporting in inter-censal periods (1985-2011) relative the more complete census per period
- This give relative completeness per period, thus needs to be adjusted for census for coverage relative to 2011 (the most complete)
- This adjustment suggests that census coverage of females better than that of males, average coverage: 84%, 89%, 93% and 97% for censuses in 1985, 1991, 1996 & 2001

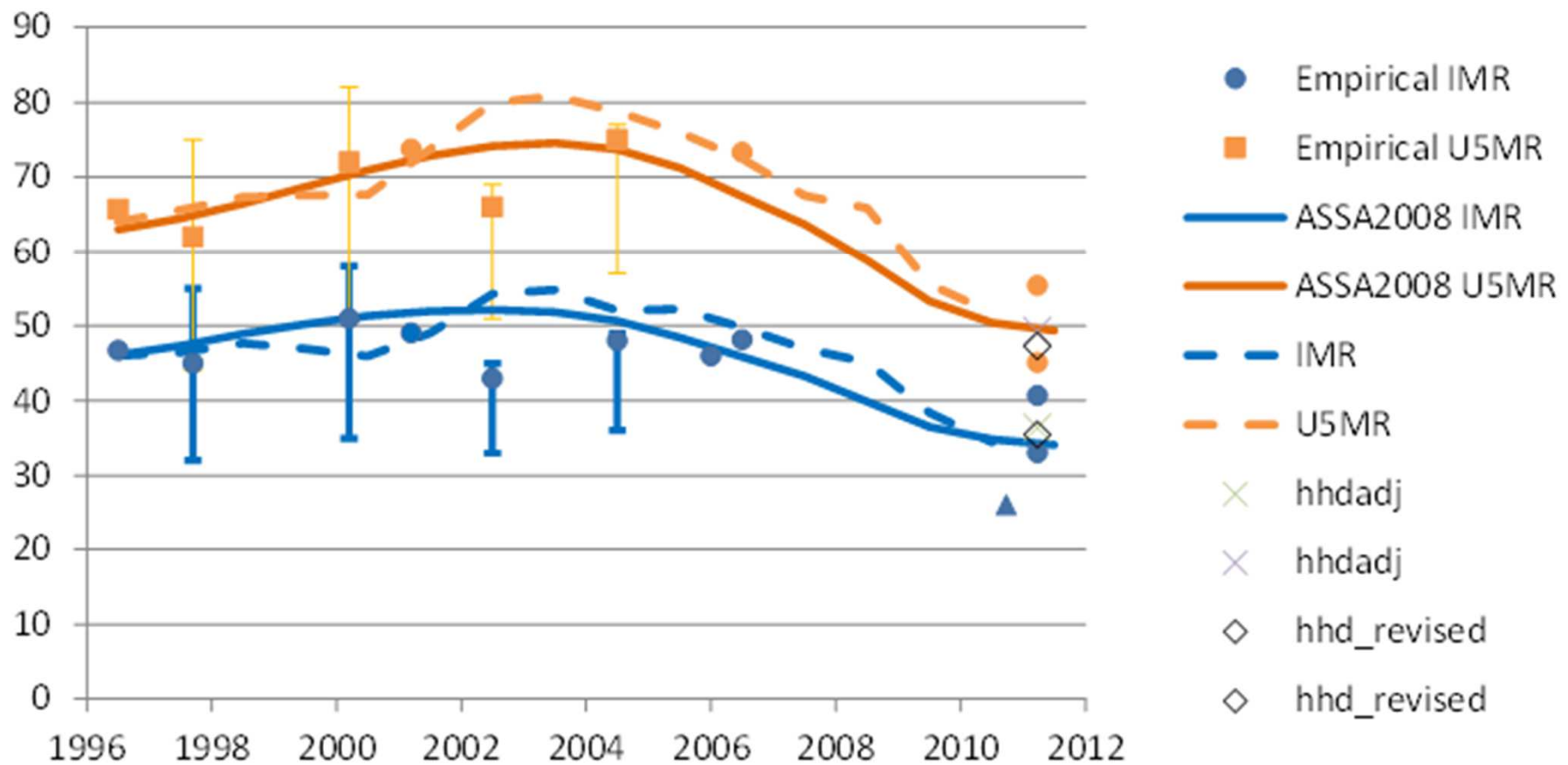
Adult deaths: Completeness



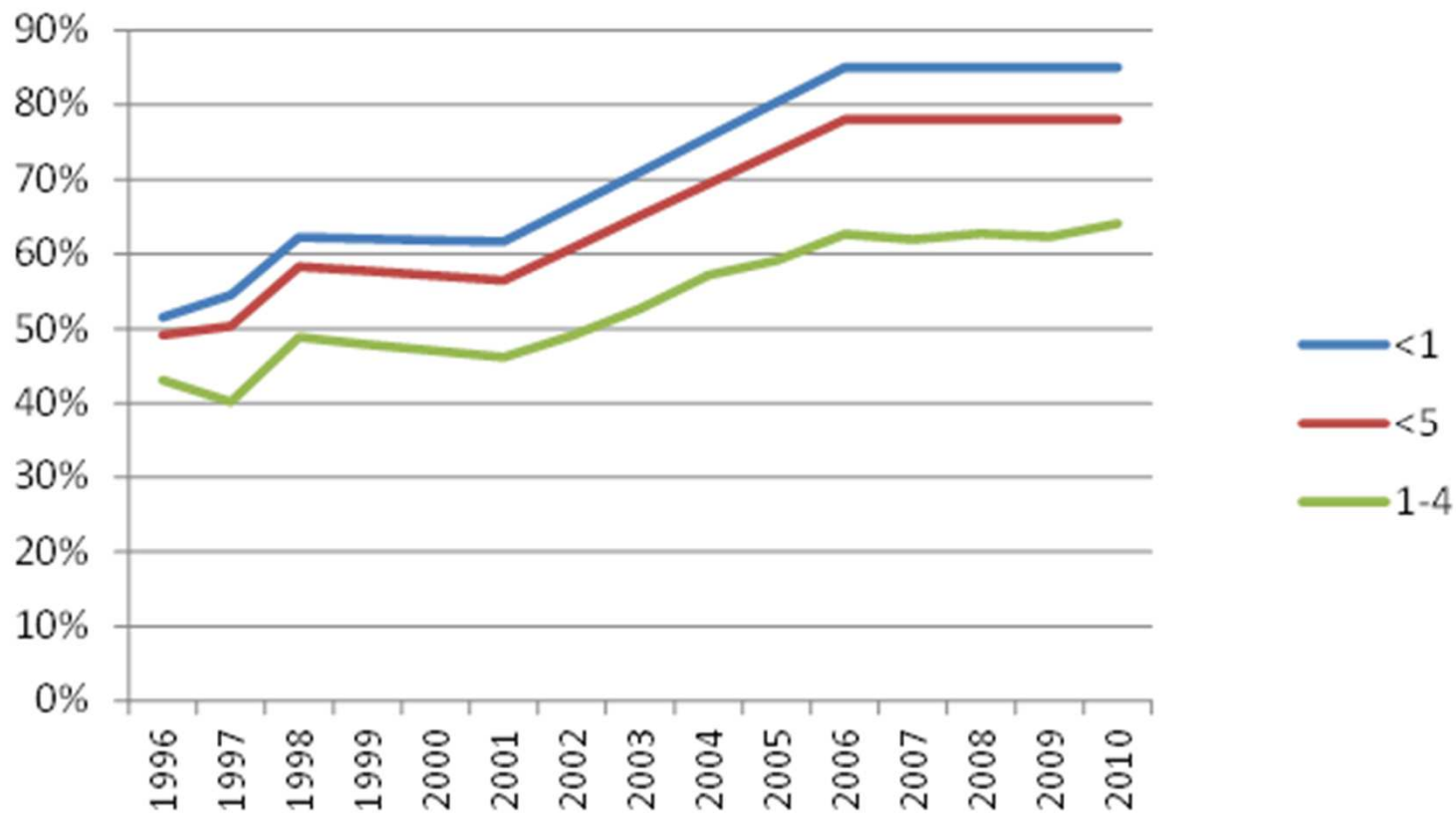
Child deaths: method

- Various researchers: Dorrington, Timæus, Moultrie & Nannan (2004); Nannan, Timæus, Laubscher & Bradshaw (2006); Darikwa & Dorrington (2011); NBD (Msemburi et al 2014)
- NBD: Estimated the completeness of VR deaths needed to produce estimates that tracked empirical estimates sensibly (i.e. with a trend over time that allowed for the expected impact of HIV).
- To limit the degrees of freedom assumed completeness increased monotonically (except for rapid changes in VR numbers not thought to be due to change in completeness).
- Estimates used: rates for 1996 from Dorrington et al (2004), household deaths 2001 & 2011 censuses & 2007 CS, CEB/CS data from 2007 and IMR from survival of most recent birth in the last 2 years from 2001 and 2011.

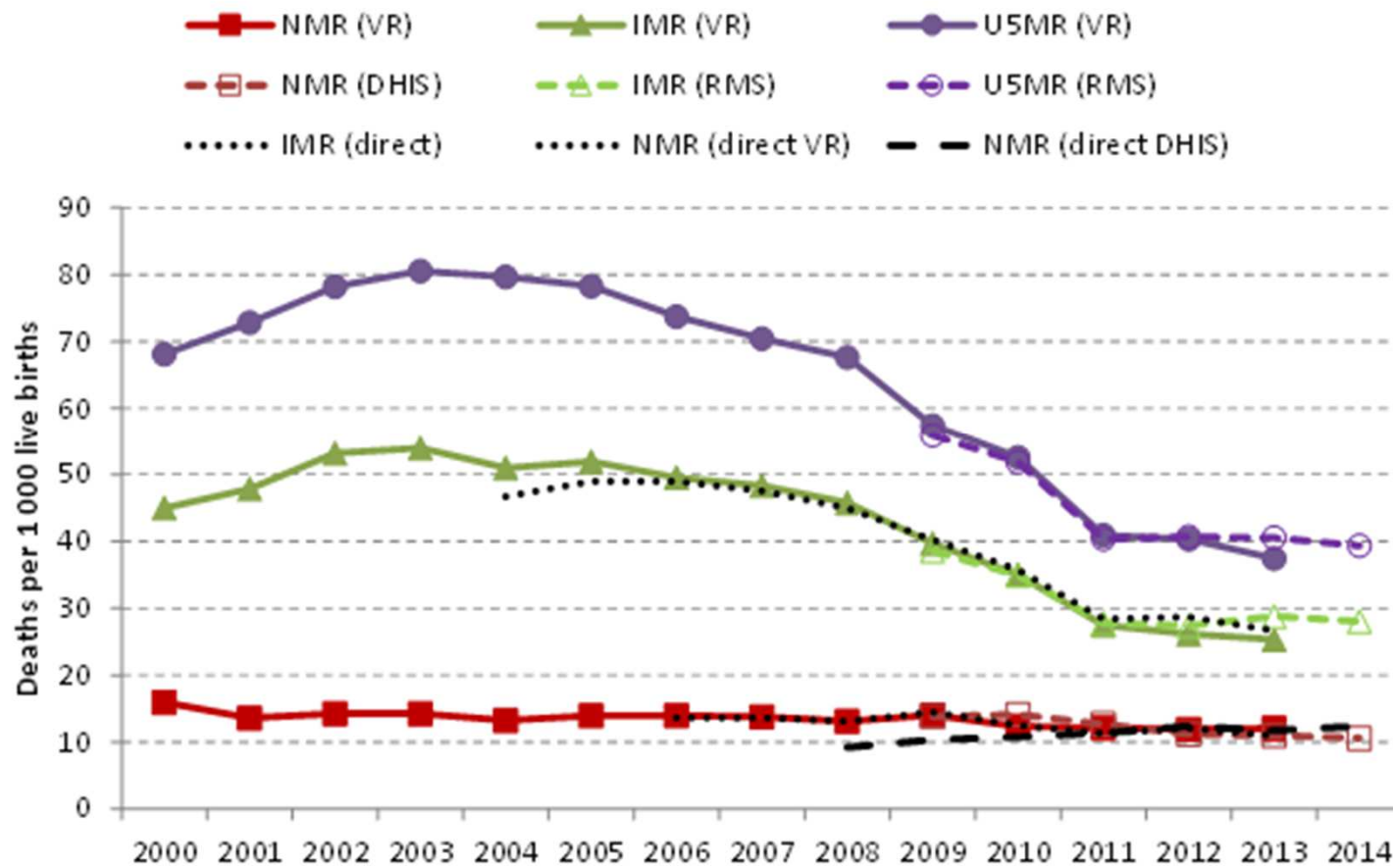
Child deaths: IMR & U5MR (VR vs other estimates)



Child deaths: Implied completeness



Child deaths: Implied rates



Sub-national

- Much more challenging (for births see Nannan, Dorrington & Bradshaw 2015 and Dorrington & Moultrie 2015, and for deaths NBD (Msemburi et al 2014) and Dorrington & Timæus 2015)
- Some issues
 - Births
 - Occurring in provinces not where registered or mother lives
 - DHIS: Differential coverage by province, or births in facilities in province where not live
 - Boundaries changes
 - Adult deaths
 - Non-correspondence
 - Migration a problem for DDMs (Dorrington & Timæus 2015)
 - Boundary changes
 - Child deaths – implausible estimates of completeness
 - Districts, same but worse

Discussion/Lessons

- Essential part of building reliable CRVS is establishing a means of estimating completeness
- Useful components
 - DHIS (births and neonatal deaths)
 - PR (rapid mortality estimates, annual check on VR completeness, check on birth completeness)
 - Censuses/surveys (births, U5MR, adult mortality?)
- Changes to process should be kept to minimum (close-off/release dates, boundaries, etc.)
- Quality of data – in particular for infant/child survival – hence need for better training/management of field-workers

Discussion/Lessons

- Small national surveys are a problem for indirect estimation of adult completeness, particularly sub-nationally
- Continued need for indirect techniques, in particular for a method for estimating completeness child mortality