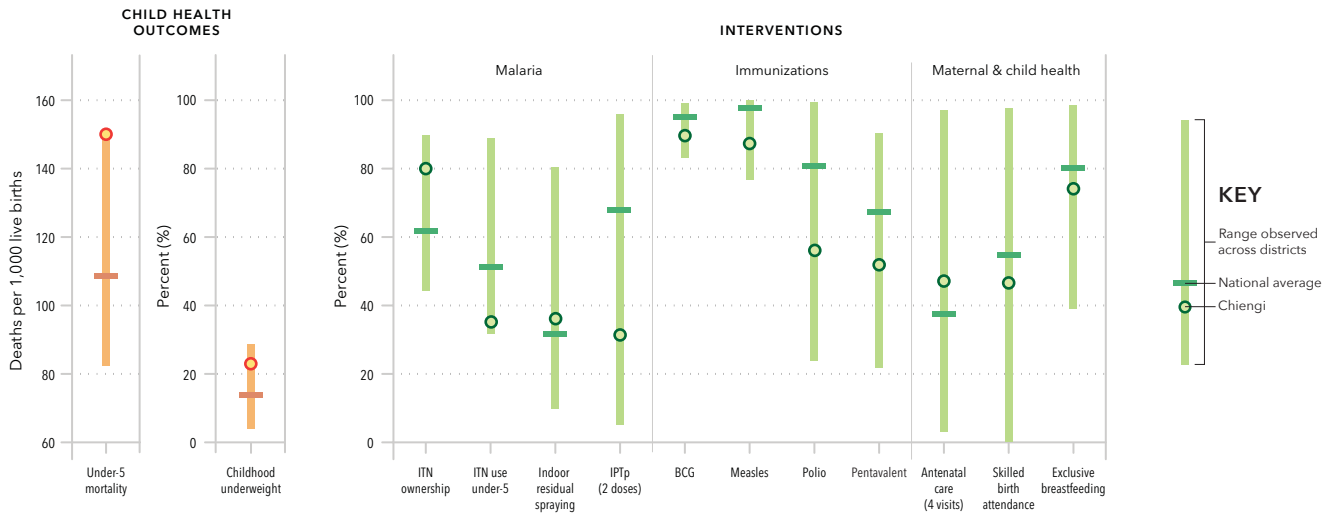


Luapula province



Chiengi



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

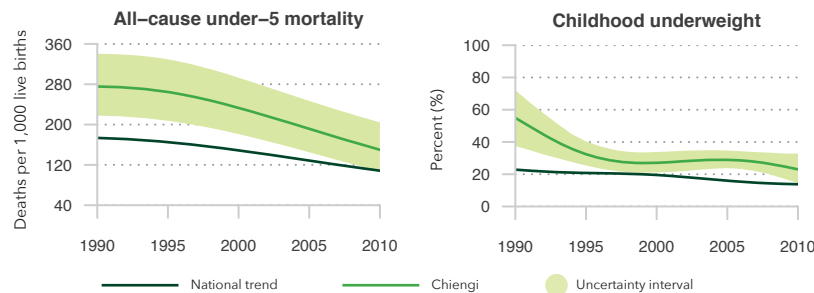
All-cause under-5 mortality and childhood underweight substantially declined in Chiengi from 1990 to 2010, but each remained among the highest in the country in 2010. Prioritizing efforts to further accelerate progress in child health outcomes should be considered.

Aside from the district's scale-up of ITN ownership and moderately high levels of IRS coverage, most trends in intervention coverage showed signs of challenges. Minimal progress was made for ITN use and IPTp2 coverage, both of which were among the lowest in Zambia in 2010. The district had a marginal scale-up of the pentavalent vaccine, and im-

munization coverage dropped in recent years, with levels of each vaccine falling among the lowest in Zambia for 2010. ANC4 coverage decreased, and skilled birth attendance remained low. Especially with its very low levels of vaccine coverage, Chiengi will likely benefit from targeting these interventions for improvement.

In 2010, Chiengi generally fell below the national average for interventions, with ITN ownership being the stark exception. In comparison with the national average, Chiengi showed substantially higher levels of mortality and underweight.

CHILD HEALTH OUTCOMES

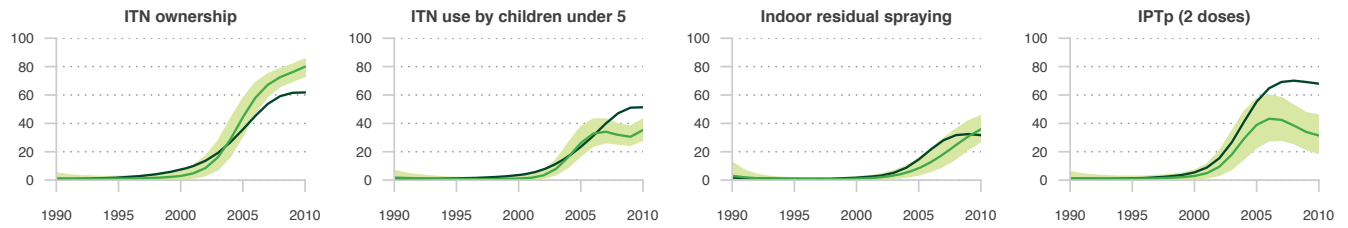


From 1990 to 2010, Chiengi recorded a significant reduction in all-cause under-5 mortality, dropping 46% from 276 deaths per 1,000 live births in 1990 (95% CI: 220, 338) to 150 in 2010 (95% CI: 109, 203). In 2010, the district's under-5 mortality still remained substantially higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116) and was among the highest in Zambia. It is important to note that Chiengi had very high levels of under-5 mortality in 1990, and while the dis-

trict's levels remained quite high in 2010, its difference from the national average decreased between 1990 and 2010.

The proportion of children who were underweight decreased from 55% in 1990 (95% CI: 38%, 71%) to 23% in 2010 (95% CI: 15%, 32%). Chiengi made substantial progress in reducing its very high levels of underweight from the 1990s, but the district still had one of the highest levels of underweight in Zambia for 2010.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2003, after which coverage rapidly climbed to 80% in 2010 (95% CI: 73%, 85%), rising to among the highest in Zambia that year.

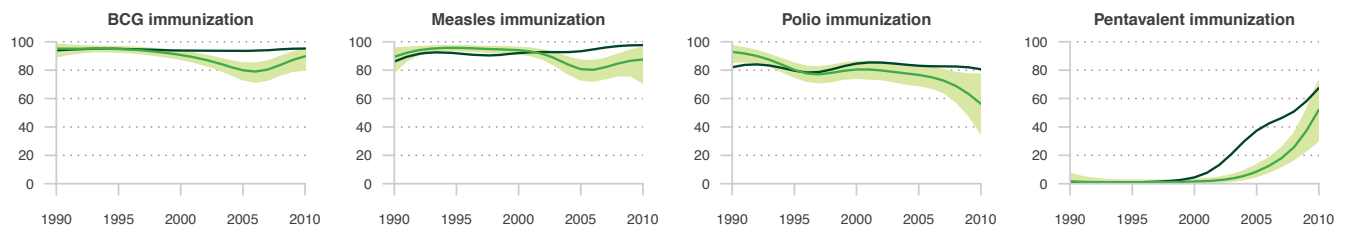
ITN use by children under 5 years old increased to 33% in 2006 (95% CI: 24%, 43%), but largely stagnated during the late 2000s, coming in at 35% in 2010 (95% CI: 28%, 43%). This level of ITN use was much lower than the national average of 51% for 2010, and starkly contrasting with its ITN ownership trends, Chiengi's ITN use was among the lowest in Zambia for 2010. The difference between ITN ownership and use (45 percentage points) was much higher in Chiengi than what was

observed nationally (11 percentage points) for 2010, which suggests that the district's net use culture may be minimal.

Chiengi formally implemented IRS activities in 2010, and reached 36% of households that year (95% CI: 27%, 45%). Chiengi's scale-up of IRS was about average among the other districts that also began IRS in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2003, after which coverage rose to 43% in 2006 (95% CI: 28%, 60%). Coverage faltered in 2007, eventually falling to 31% in 2010 (95% CI: 19%, 46%), which was among the lowest in Zambia that year.

IMMUNIZATIONS



BCG coverage remained at 95% through 1996, after which coverage dropped to 79% in 2006 (95% CI: 72%, 85%). BCG coverage rebounded, up to 90% in 2010 (95% CI: 80%, 95%) but still remained among the lowest in Zambia for that year.

After maintaining coverage above 90% from 1991 to 2002, measles immunization fell to 80% in 2006 (95% CI: 72%, 87%). Coverage increased to 88% in 2010 (95% CI: 71%, 96%), but remained among the lowest in the country.

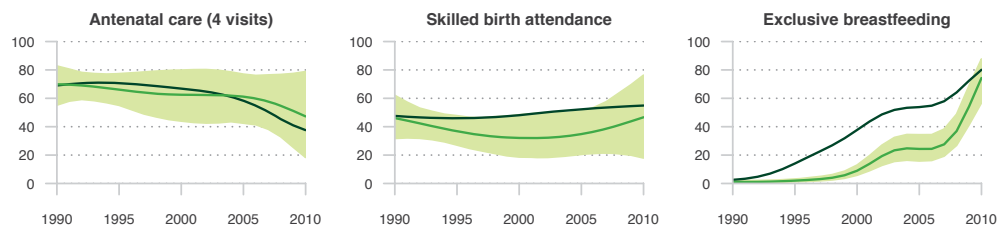
Coverage of polio immunization declined from 93% in 1990 (95% CI: 86%, 97%) to 56% in 2010 (95% CI: 35%, 77%),

which was among the lowest in Zambia.

After the pentavalent vaccine was formally introduced in Chiengi in 2005, coverage increased to 13% in 2006 (95% CI: 8%, 18%). Gains accelerated in 2009, with coverage rising to 52% in 2010 (95% CI: 30%, 73%), but this level of pentavalent coverage remained among the lowest in Zambia in 2010.

Coverage of routine immunizations in Chiengi was consistently among the lowest in Zambia for 2010. This finding is cause for concern, and the district would benefit from addressing its vaccination challenges.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage steadily decreased from 70% in 1990 (95% CI: 55%, 83%) to 47% in 2010 (95% CI: 18%, 79%). While coverage was higher than the national average of 37% in 2010, the district's levels remained lower than optimal.

Skilled birth attendance remained relatively low, falling to 32% in the early 2000s before slowly rising to 47% in 2010 (95% CI: 18%, 76%). This level of coverage was lower than the

national average of 55% for 2010, with the district demonstrating minimal progress in improving its SBA coverage.

The proportion of children who were exclusively breastfed reached 23% in 2003 (95% CI: 16%, 32%), but stayed around 30% until 2008. Coverage increased to 74% in 2010 (95% CI: 57%, 88%), but remained below the national average of 80%.



Kawambwa



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

Between 1990 and 2010, Kawambwa substantially reduced all-cause under-5 mortality and childhood underweight; however, the latter remained well above the national average in 2010. Prioritizing ways to accelerate gains in child health outcomes, especially for underweight, should be considered.

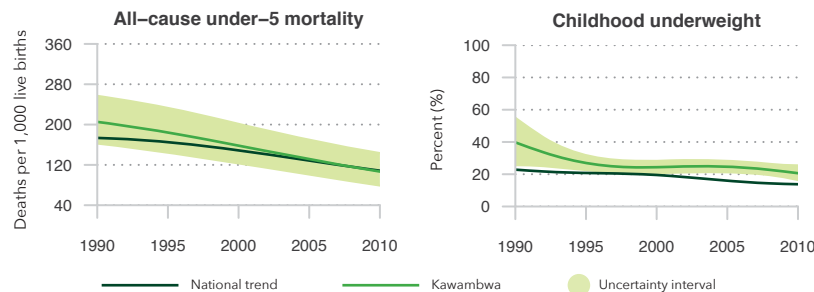
Kawambwa rapidly scaled up ITN ownership and IRS, exceeding the national average in 2010. Steady gains were made in the scale-up of the pentavalent vaccine, and measles immunization was well above the national average in 2010.

However, amidst these gains, several troubling trends were identified and warrant further attention. ITN use fell substantially from its peak in the mid-2000s. Exclusive breast-

feeding declined during the mid-2000s, with coverage only recently rising again. Coverage of BCG and polio immunization decreased, and skilled birth attendance remained consistently low. After making steady gains in coverage, ANC4 coverage also steeply dropped.

In 2010, Kawambwa generally exceeded the national average for malaria interventions, but fell below for immunizations and maternal and child health interventions (with measles coverage as the clear exception). In comparison with the national average, Kawambwa showed similar levels of mortality and much higher levels of underweight.

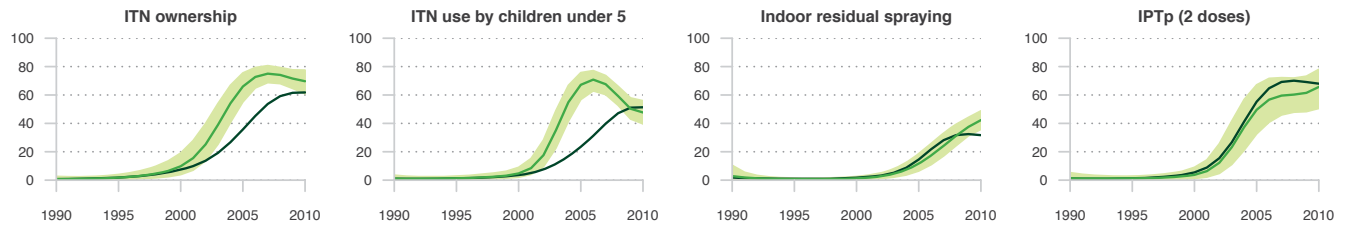
CHILD HEALTH OUTCOMES



From 1990 to 2010, Kawambwa recorded a significant reduction in all-cause under-5 mortality, dropping 48% from 205 deaths per 1,000 live births in 1990 (95% CI: 162, 257) to 107 in 2010 (95% CI: 78, 144). In 2010, the district's under-5 mortality was comparable to the national average of 109 deaths per 1,000 live births (95% CI: 104, 116); this progress is notable given the district's high mortality levels during the 1990s.

The proportion of children who were underweight decreased from 40% in 1990 (95% CI: 26%, 55%) to 21% in 2010 (95% CI: 16%, 26%), but remained well above the national average of 14%. Kawambwa made substantial progress in reducing its high levels of underweight from the 1990s, but much work remains.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2000, after which coverage quickly rose to 75% in 2007 (95% CI: 69%, 81%). Coverage faltered soon after, falling to 70% in 2010 (95% CI: 61%, 78%), but remained above the national average of 62%.

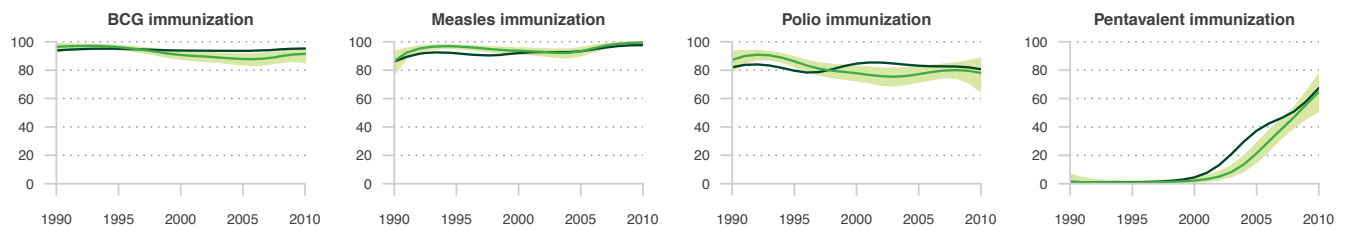
The use of ITNs by children under 5 years old rapidly increased to 71% in 2006 (95% CI: 63%, 77%), but dropped to 48% in 2010 (95% CI: 40%, 56%), falling below the national average of 51%. The difference between ITN ownership and use (22 percentage points) was much higher in Kawambwa than what was observed at the national level (11 percentage points). The district's especially sharp decline in ITN use since

2006 is cause for concern.

Kawambwa formally implemented IRS activities in 2008, and reached 42% of households in 2010 (95% CI: 36%, 49%). Kawambwa's scale-up of IRS by 2010 was on the higher end among the districts that also began IRS in 2008.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, but rapidly rose to 60% in 2007 (95% CI: 46%, 72%). Gains in coverage stalled for a few years before IPTp2 levels climbed to 66% in 2010 (95% CI: 51%, 78%), which was slightly lower than the national average of 68%.

IMMUNIZATIONS



BCG immunization fell from 97% during the early to mid-1990s to 88% in the mid-2000s. Coverage rebounded to 91% in 2009 and 2010, but remained below the national average of 95%.

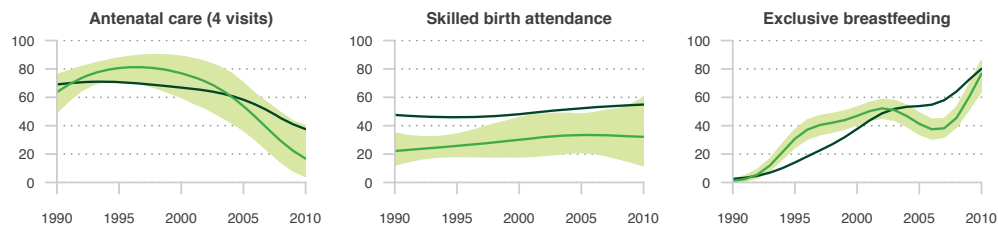
Overall, measles immunization increased from 86% in 1990 (95% CI: 77%, 93%) to 99% in 2008 (95% CI: 97%, 99%), which was maintained through 2010 and slightly exceeded the national average of 98% for that year.

Coverage of polio immunization remained around 90%

during the early to mid-1990s, but dropped to 75% in 2003 (95% CI: 69%, 81%). Coverage rose to 80% between 2007 and 2009, but slipped to 78% in 2010 (95% CI: 65%, 88%), which was slightly lower than the national average of 81%.

After the pentavalent vaccine was introduced in Kawambwa in 2005, coverage increased to 30% in 2006 (95% CI: 24%, 37%) and 65% in 2010 (95% CI: 51%, 77%), which was slightly lower than the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 64% in 1990 (95% CI: 49%, 76%) to 81% in the late-1990s before steeply dropping to 17% in 2010 (95% CI: 4%, 40%). ANC4 dramatically decreased throughout Zambia from 1990 to 2010, and the finding that Kawambwa's levels of coverage fell over 60 percentage points since 1997 is of particular concern.

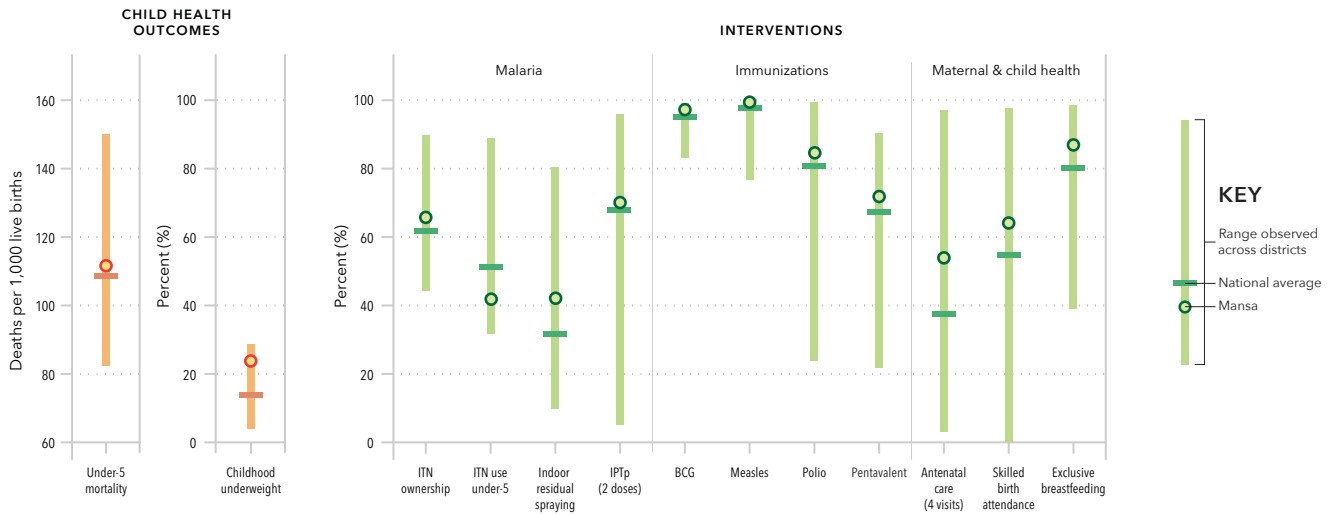
Skilled birth attendance gradually increased from 22% in 1990 (95% CI: 12%, 35%) to 32% in 2010 (95% CI: 12%, 60%). These gains in coverage were fairly minimal, and SBA

in Kawambwa remained below the national average of 55% for 2010.

The proportion of children who were exclusively breastfed remained below 20% until 1994, after which coverage increased to 50% in 2001 (95% CI: 44%, 56%). Coverage declined, falling to 37% in 2006 (95% CI: 31%, 44%), but then rebounded to 77% in 2010 (95% CI: 64%, 86%), which remained slightly below the national average of 80%.



Mansa



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

Between 1990 and 2010, Mansa recorded a substantial reduction in all-cause under-5 mortality, though its under-5 mortality rate still exceeded the national average in 2010. Childhood underweight generally decreased in Mansa, but levels actually increased in recent years, rising to among the highest levels in Zambia. Prioritizing efforts to accelerate gains for child health outcomes should be considered.

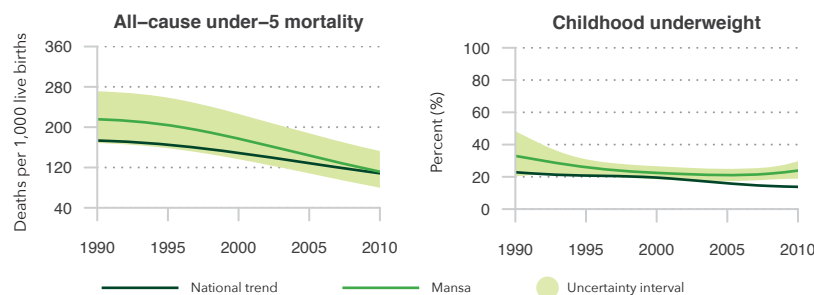
Mansa scaled up ITNs and IPTp2 earlier than the rest of the country, and the district successfully expanded coverage of the pentavalent vaccine between 2005 and 2010. After periods of lower coverage, levels of routine immunizations increased in 2010, equaling or exceeding the national average for that year. Exclusive breastfeeding declined during

the early to mid-2000s, but coverage surpassed the national average in 2010. Skilled birth attendance steadily increased during the 2000s, rising above the national average in 2010.

Amidst these gains, however, some worrisome trends were identified and warrant further attention. ITN use fell below the national average, while IPTp2 coverage declined since its peak in the mid-2000s. ANC4 coverage steadily decreased over time, with its pace of decline accelerating in recent years.

In 2010, Mansa generally met or exceeded the national average for all interventions, with ITN use as the exception. In comparison with the national average, Mansa showed slightly higher levels of mortality and much higher levels of underweight.

CHILD HEALTH OUTCOMES

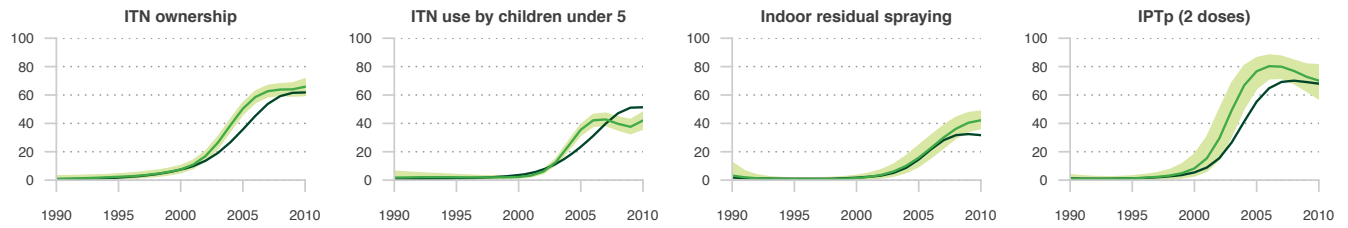


From 1990 to 2010, Mansa recorded a significant reduction in all-cause under-5 mortality, dropping 48% from 216 deaths per 1,000 live births in 1990 (95% CI: 171, 269) to 112 in 2010 (95% CI: 82, 151). In 2010, the district's under-5 mortality still remained slightly higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116).

The proportion of children who were underweight decreased from 33% in 1990 (95% CI: 21%, 48%) to 21% during

the mid-2000s, but then increased to 24% in 2010 (95% CI: 19%, 29%). This level of underweight was well above the national average of 14% in 2010, and was among the highest in Zambia. Despite some progress, childhood underweight remains high in Mansa and the district's slight rise in prevalence is cause for concern.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2001, after which coverage increased to 66% in 2010 (95% CI: 60%, 71%) and was slightly higher than the national average of 62%.

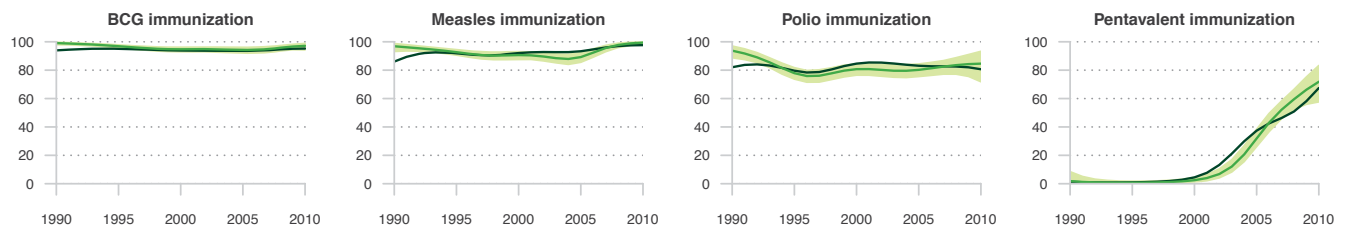
ITN use by children under 5 years old quickly rose to 43% in 2007 (95% CI: 39%, 47%), but fell below 40% in 2009. ITN use slightly rebounded, to 42% in 2010 (95% CI: 36%, 48%), but remained much lower than the national average of 51%. The difference between ITN ownership and use (24 percentage points) was much higher in Mansa than what was observed at the national level (11 percentage points).

Mansa formally implemented IRS activities in 2008, reach-

ing 36% of households that year (95% CI: 30%, 44%) and 42% in 2010 (95% CI: 36%, 49%). Mansa's scale-up of IRS by 2010 was about average among the other districts that also began IRS in 2008.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, but rapidly rose to 80% in 2006 (95% CI: 72%, 88%). Coverage remained at 80% through 2007, but declined to 70% in 2010 (95% CI: 57%, 81%). While this level of coverage was slightly higher than the national average of 68% in 2010, IPTp2 in Mansa peaked earlier and higher than the national trend.

IMMUNIZATIONS



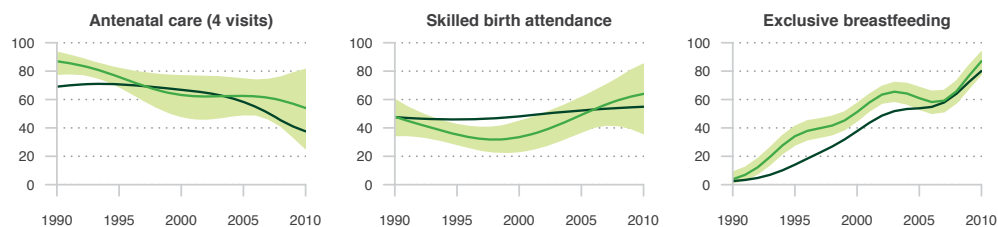
BCG coverage declined from 99% in the early 1990s to a low of 94% during the mid-2000s, but increased to 97% in 2009 and 2010. This level of coverage surpassed the national average of 95%.

Measles immunization gradually decreased from 97% in 1990 (95% CI: 93%, 99%) to 88% during the mid-2000s; however, coverage rose to 99% in 2009 and 2010, which was slightly higher than the national average of 98%.

Coverage of polio immunization dropped from 94% in 1990 (95% CI: 89%, 97%) to below 80% in 1995 and 1998. Polio coverage hovered around 80% through 2006, increasing to 85% in 2010 (95% CI: 72%, 93%) and slightly exceeding the national average of 81% for that year.

After the pentavalent vaccine was formally introduced in Mansa in 2005, coverage increased to 43% in 2006 (95% CI: 37%, 49%) and 72% in 2010 (95% CI: 58%, 83%), which was slightly higher than the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage decreased from 87% in 1990 (95% CI: 78%, 93%) to 54% in 2010 (95% CI: 26%, 81%). ANC4 dramatically decreased throughout Zambia from 1990 to 2010, and though Mansa's levels of coverage were higher than the national average of 37% for 2010, the finding that the district's ANC4 coverage fell over 30 percentage points during this period is troubling.

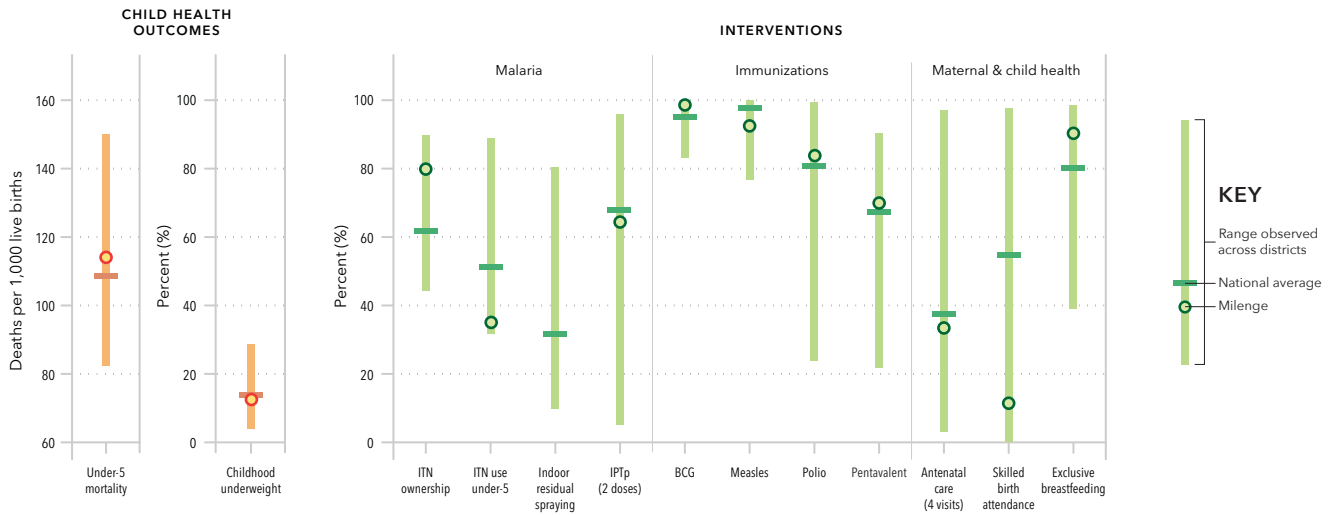
Skilled birth attendance declined from 48% in 1990 (95%

CI: 35%, 60%) to 32% in the late 1990s, after which coverage steadily rose to 64% in 2010 (95% CI: 36%, 85%), exceeding the national average of 55%.

The proportion of children who were exclusively breastfed remained under 20% until 1993, after which coverage rose to 66% in 2003 (95% CI: 59%, 72%). Coverage fell below 60% in 2006 and 2007, but rebounded to 87% in 2010 (95% CI: 78%, 93%) and exceeded the national average of 80%.



Milenge



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green). IRS coverage was not included because Milenge started IRS after 2010.

SUMMARY

Between 1990 and 2010, Milenge substantially reduced all-cause under-5 mortality and childhood underweight; however, its mortality levels still exceeded the national average in 2010. Prioritizing ways to further accelerate declines in child health outcomes, especially under-5 mortality, should be considered.

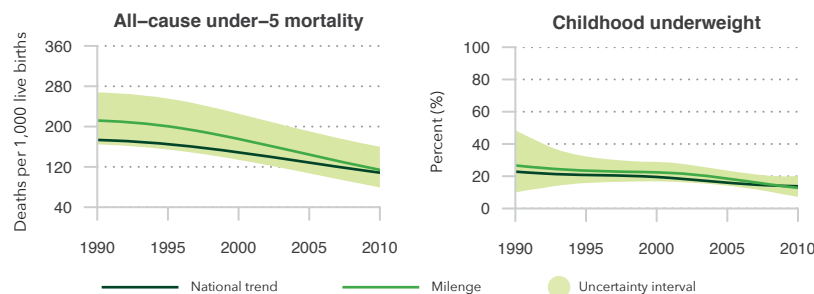
Milenge scaled up ITN ownership and IPTp2, and the district recorded steady gains in coverage for the pentavalent vaccine and exclusive breastfeeding. BCG immunization in Milenge was among the highest in Zambia in 2010, and trends in polio coverage recovered after falling in the mid-1990s.

Amidst these gains, however, several troubling trends were identified and warrant further attention. ITN use dramati-

cally declined after rapidly rising in the mid-2000s, falling to among the lowest in the country for 2010. After maintaining high levels of measles immunization, coverage recently dropped. Skilled birth attendance substantially decreased from already low levels of coverage, and ANC4 fell to lower levels in 2010.

In 2010, Milenge generally exceeded the national average for immunizations, but largely fell below for malaria interventions and maternal and child health interventions (except for ITN ownership). In comparison with the national average, Milenge showed slightly higher levels of mortality and similar levels of underweight.

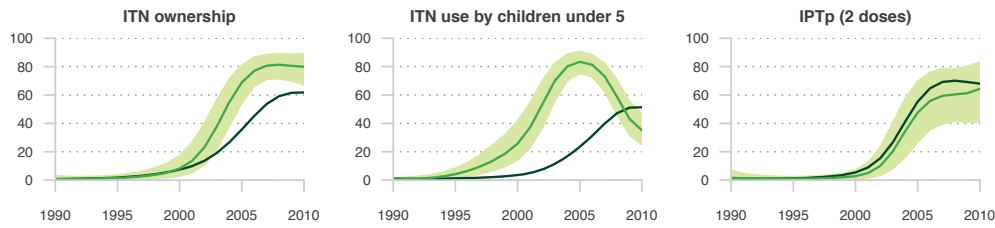
CHILD HEALTH OUTCOMES



From 1990 to 2010, Milenge recorded a significant reduction in all-cause under-5 mortality, dropping 46% from 212 deaths per 1,000 live births in 1990 (95% CI: 167, 266) to 114 in 2010 (95% CI: 81, 158). Despite these gains, the district's under-5 mortality in 2010 still remained slightly higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116).

The proportion of children who were underweight decreased from 27% in 1990 (95% CI: 11%, 48%) to 13% in 2010 (95% CI: 8%, 19%), which was comparable to the national average of 14%.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2001, after which coverage rapidly rose to 81% in 2007 (95% CI: 71%, 88%). This level of coverage was sustained through 2009, and then coverage slightly slipped to 80% in 2010 (95% CI: 67%, 89%). Nonetheless, this level of ITN ownership far exceeded the national average of 62% for 2010, and was among the highest in Zambia.

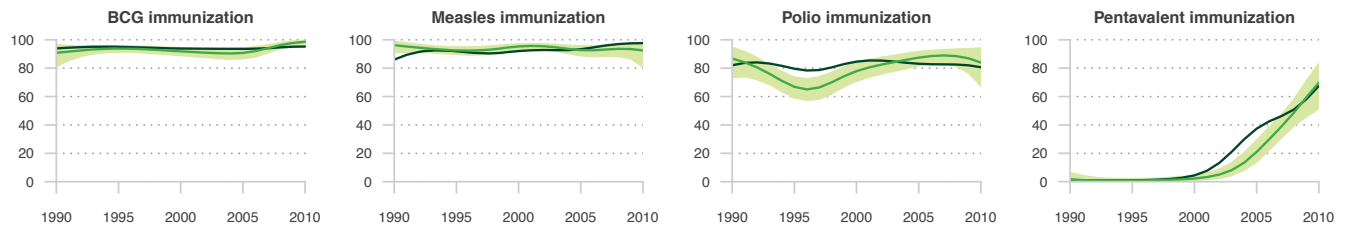
ITN use by children under 5 years old rapidly increased to 83% in 2005 (95% CI: 75%, 91%), but plunged to 35% in 2010 (95% CI: 25%, 47%). This level of ITN use was much lower than the national average of 51% for 2010, and was among the lowest in Zambia for that year. The district's precipitous drop

in ITN use is cause for concern given that ITN ownership did not substantially decrease by 2010; this finding suggests that something may have changed in the culture surrounding ITN use.

IRS coverage trends are not included because Milenge did not begin formal IRS activities until after 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, but rapidly rose to 56% in 2006 (95% CI: 36%, 76%). Coverage continued to increase, but at a slower pace, reaching 64% in 2010 (95% CI: 41%, 83%). This level of IPTp2 coverage was slightly lower than the national average of 68% in 2010.

IMMUNIZATIONS



BCG immunization remained between 90% and 94% from 1990 to 2007, after which coverage climbed to 99% in 2010 (95% CI: 97%, 100%) and rose to among the highest in Zambia.

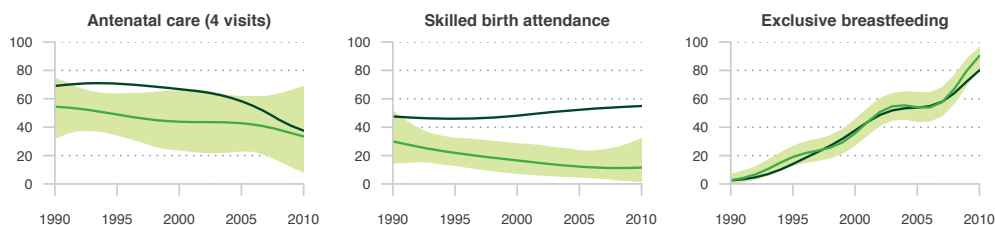
Measles immunization vacillated between 92% and 96% from 1990 to 2010, falling to 92% in 2010 (95% CI: 81%, 98%), which was lower than the national average of 98%.

Coverage of polio immunization dropped from 87% in 1990 (95% CI: 74%, 95%) to 65% in 1996 (95% CI: 57%, 72%).

Polio coverage steadily climbed to 89% between 2006 and 2008, but dipped to 84% in 2010 (95% CI: 68%, 94%). This level of coverage was slightly higher than the national average of 81% for 2010.

After the pentavalent vaccine was formally introduced in Milenge in 2005, coverage increased to 30% in 2006 (95% CI: 22%, 38%) and 70% in 2010 (95% CI: 52%, 83%), which was slightly higher than the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage decreased from 54% in the early 1990s to 33% in 2010 (95% CI: 9%, 68%), which was slightly lower than the national average of 37%. Although Milenge did not experience the same drastic decline in ANC4 coverage that was observed at the national level, its consistently low levels of ANC4 are worrisome.

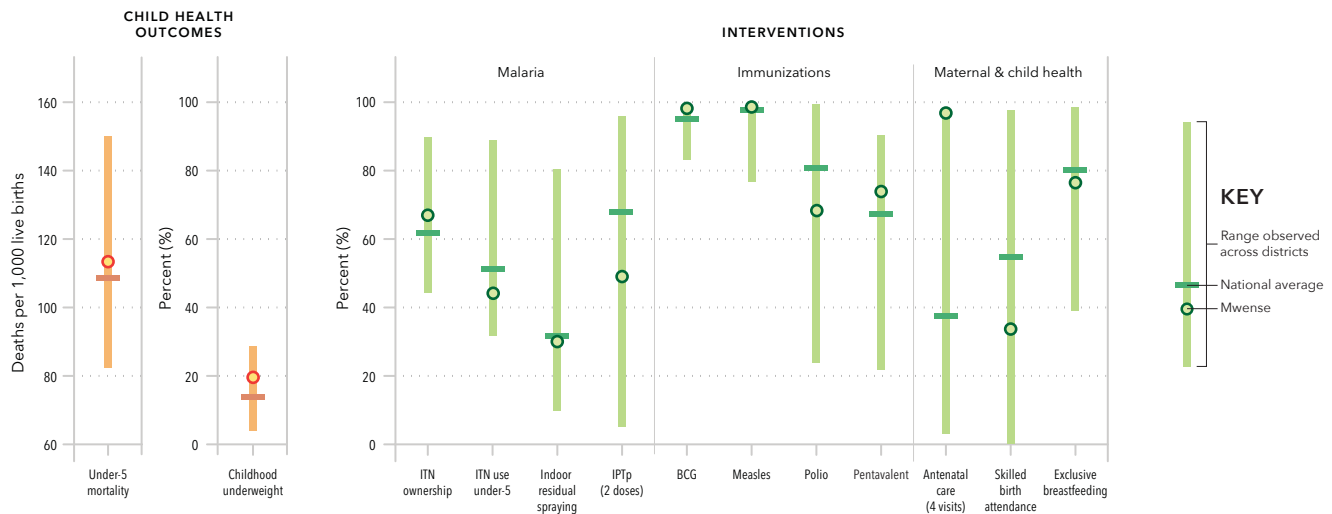
Skilled birth attendance steadily declined from 30% in 1990 (95% CI: 15%, 51%) to 12% in 2010 (95% CI: 2%, 32%),

which was well below the national average of 55%. This level of SBA coverage was among the lowest in Zambia for 2010.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage increased to 55% in 2003 (95% CI: 45%, 64%). Gains in coverage stalled through 2006, but exclusive breastfeeding rapidly rose to 90% in 2010 (95% CI: 81%, 96%), which was much higher than the national average of 80%.



Mwense



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

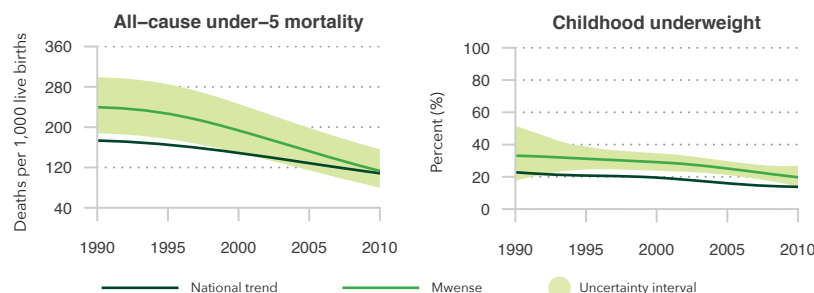
All-cause under-5 mortality and childhood underweight substantially decreased in Mwense between 1990 and 2010, but the district's levels for each remained above the national average in 2010. Prioritizing ways to further accelerate progress in child health outcomes should be considered.

Mwense scaled up ITN ownership through 2010, and successfully expanded coverage of the pentavalent vaccine. Coverage of BCG, the measles vaccine, and exclusive breastfeeding also increased after recent declines. Most notably, ANC4 coverage increased and was sustained at very high levels through 2010. Given that most of Zambia experienced dramatic declines in ANC4 coverage, much could be learned from the district's ANC4 programs.

However, amidst these gains, some troubling trends were identified and warrant further attention. Gains in IPTp2 coverage stalled in the mid-2000s, and polio immunization steeply declined in 2010. Skilled birth attendance decreased in recent years, which directly contrasted with the progress observed at the national level.

In 2010, Mwense exceeded the national average for immunizations (except for polio coverage), but fell below for malaria interventions and maternal and child health interventions (with ITN ownership and ANC4 as the clear exceptions). In comparison with the national average, Mwense showed slightly higher levels of mortality and much higher levels of underweight.

CHILD HEALTH OUTCOMES

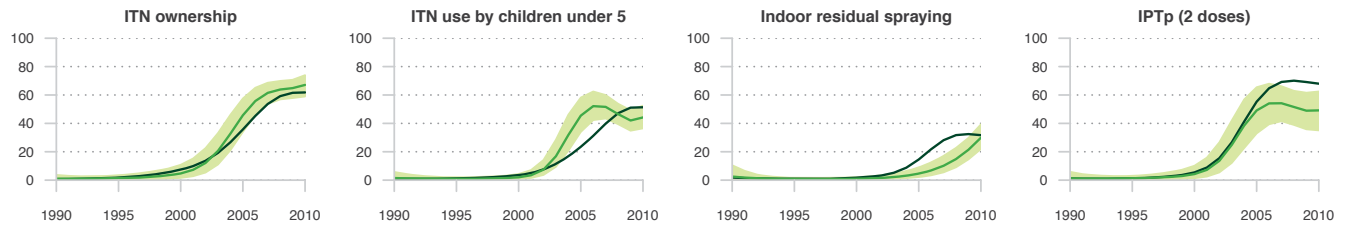


From 1990 to 2010, Mwense recorded a significant reduction in all-cause under-5 mortality, dropping 53% from 240 deaths per 1,000 live births in 1990 (95% CI: 190, 297) to 113 in 2010 (95% CI: 82, 154). However, the district's under-5 mortality in 2010 still remained slightly higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116). It is worthy to note that Mwense has made considerable progress

in bringing its levels of under-5 mortality, which were very high in the 1990s, closer to the national average.

The proportion of children who were underweight decreased from 33% in 1990 (95% CI: 18%, 51%) to 20% in 2010 (95% CI: 15%, 26%), which was much higher than the national average of 14%.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2002, after which coverage increased to 67% in 2010 (95% CI: 59%, 74%), rising slightly higher than the national average of 62%.

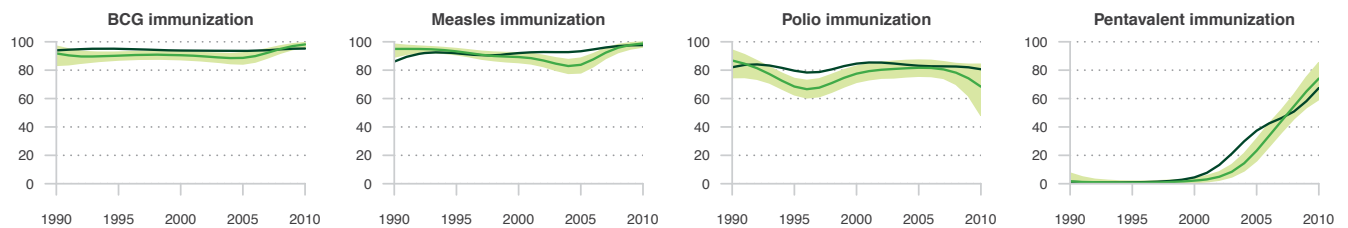
ITN use by children under 5 years old rose to 52% in 2006 and 2007, but decreased to 44% in 2010 (95% CI: 36%, 53%), falling below the national average of 51%. The difference between ITN ownership and use (23 percentage points) was much higher than what was observed nationally (11 percentage points). The district's drop in ITN use is troubling given that ownership did not decrease by 2010; this finding suggests that something may have changed in the culture sur-

rounding net use.

Mwense formally implemented IRS activities in 2010, and reached 30% of households that year (95% CI: 22%, 39%). Mwense's scale-up of IRS was on the lower end in comparison with other districts that also began IRS in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rose to 54% in 2006 (95% CI: 39%, 68%). Coverage remained at 54% through 2007, but slipped to 49% in 2009 and 2010, falling well below the national average of 68%.

IMMUNIZATIONS



BCG coverage hovered around 90% between 1990 and 2006, but increased to 98% in 2010 (95% CI: 96%, 99%) and exceeded the national average of 95%.

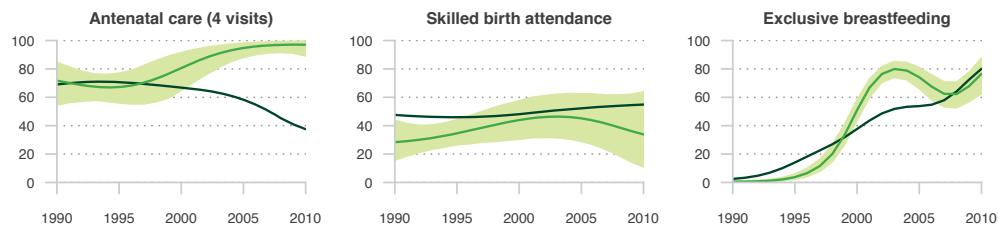
Measles immunization gradually decreased from 95% in the early 1990s to 83% in 2004 (95% CI: 78%, 87%), but coverage rebounded to 99% in 2010 (95% CI: 96%, 100%) and was slightly higher than the national average of 98%.

Coverage of polio immunization dropped from 87% in

1990 (95% CI: 75%, 94%) to 67% in 1996 (95% CI: 61%, 73%), but increased to around 80% between 2000 and 2007. Polio coverage then decreased to 68% in 2010 (95% CI: 48%, 84%), which was lower than the national average of 81%.

After the pentavalent vaccine was formally introduced in Mwense in 2005, coverage increased to 34% in 2006 (95% CI: 26%, 42%) and then to 74% in 2010 (95% CI: 59%, 85%), exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage hovered around 70% from 1990 to 1998, after which coverage climbed to 97% in 2007 (95% CI: 91%, 99%) and remained at that level through 2010. This level of ANC4 coverage was among the highest in Zambia in 2010, and Mwense's gains in ANC4 are impressive given that most districts documented drastic declines in coverage. It is likely that the rest of the country could benefit from learning about Mwense's antenatal care programs.

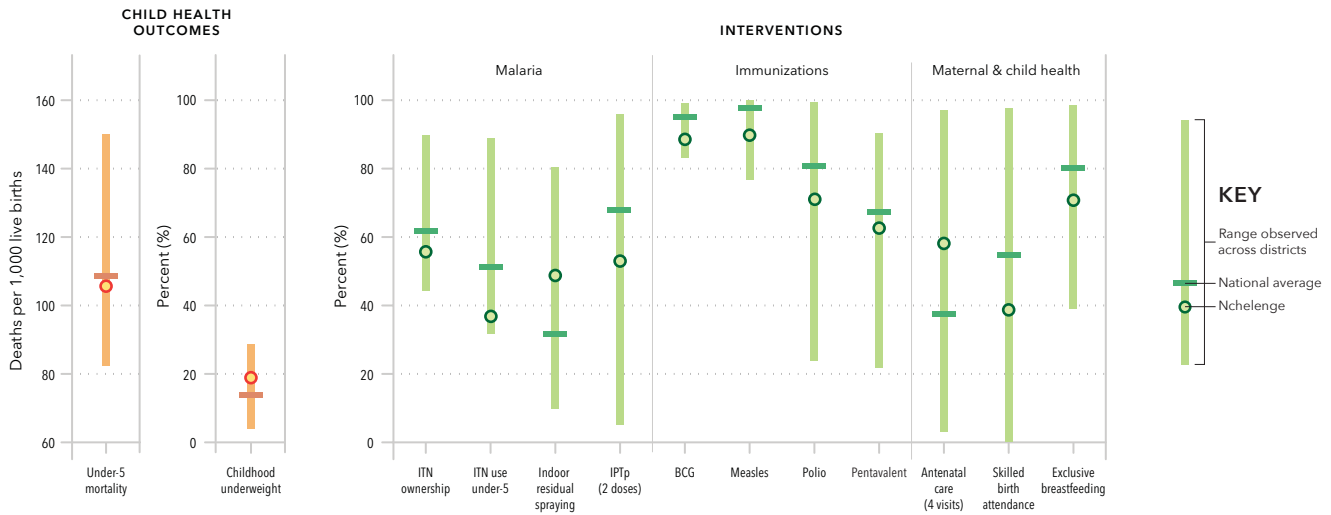
Skilled birth attendance increased from 28% in 1990 (95% CI: 16%, 44%) to 46% in the early 2000s, but dropped to 34%

in 2010 (95% CI: 11%, 64%). This level of SBA coverage was lower than the national average of 55%, and Mwense's trends of decline contrasted with the gradual gains observed at the national level.

The proportion of children who were exclusively breastfed remained below 20% until 1998, after which coverage increased to 80% in 2003 (95% CI: 74%, 85%). Coverage fell to 62% in 2007 and 2008, but rebounded to 77% in 2010 (95% CI: 63%, 87%). Despite these gains, Mwense's level of coverage was slightly lower than the national average of 80% in 2010.



Nchelenge



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

Between 1990 and 2010, Nchelenge substantially reduced all-cause under-5 mortality and childhood underweight; however, underweight in the district remained consistently higher than the national average. Prioritizing efforts to further accelerate gains for child health outcomes should be considered.

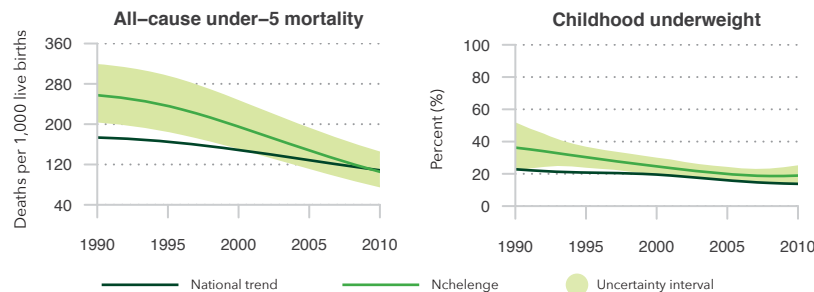
Nchelenge scaled up IRS coverage through 2010, and was moderately successful in expanding coverage of the pentavalent vaccine by 2010.

Amidst these gains, several troubling trends were identified and warrant further attention. Aside from IRS, malaria intervention coverage decreased from high levels in the mid-2000s, with ITN coverage falling to among the lowest levels in the country in 2010. Immunization coverage faltered, with

BCG immunization rates dropping to among the lowest in Zambia. The district's relatively slow scale-up of exclusive breastfeeding left its levels of coverage among the lowest in Zambia in 2010. Skilled birth attendance was consistently low through 2010, and though ANC4 coverage did not fall below the national average, its levels substantially declined.

In 2010, Nchelenge generally fell below the national average for all interventions, with spraying and ANC4 as the exceptions. In comparison with the national average, Nchelenge showed slightly lower levels of mortality and higher levels of underweight.

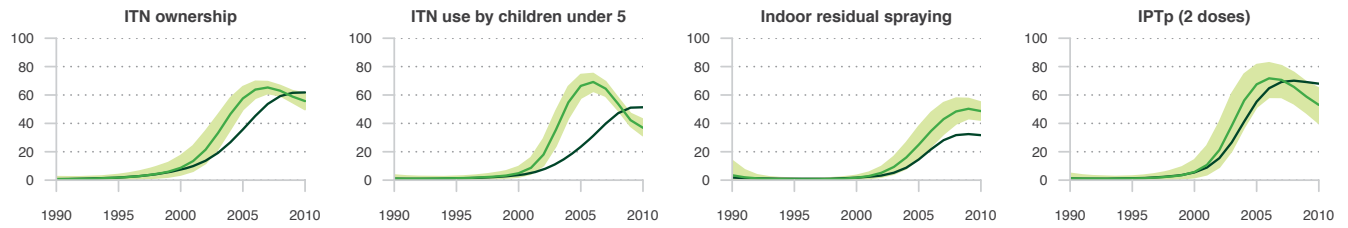
CHILD HEALTH OUTCOMES



From 1990 to 2010, Nchelenge recorded a significant reduction in all-cause under-5 mortality, dropping 59% from 257 deaths per 1,000 live births in 1990 (95% CI: 205, 318) to 106 in 2010 (95% CI: 77, 144). In 2010, the district's under-5 mortality was slightly lower than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116). This progress is worthy of note given that Nchelenge had one of the highest levels of under-5 mortality in 1990.

The proportion of children who were underweight decreased from 36% in 1990 (95% CI: 22%, 51%) to 19% in 2006 (95% CI: 16%, 23%). This level of underweight was maintained through 2010 and was higher than the national average of 14%. While the district's progress is notable, underweight in Nchelenge remained high.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2001, after which coverage rapidly rose to 65% in 2007 (95% CI: 61%, 69%). Coverage declined, dropping to 56% in 2010 (95% CI: 50%, 61%), which was among the lowest in the country.

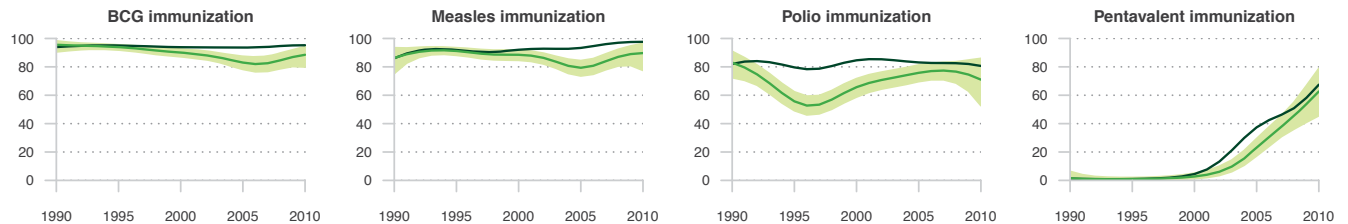
ITN use by children under 5 years old quickly increased to 69% in 2006 (95% CI: 63%, 75%), but dropped to 37% in 2010 (95% CI: 31%, 43%) and was among the lowest levels in Zambia. In 2010, the difference between ITN ownership and use (19 percentage points) was higher in Nchelenge than what was observed at the national level (11 percentage

points)

Nchelenge formally implemented IRS activities in 2008, and reached 49% of households in 2010 (95% CI: 42%, 55%). Nchelenge's scale-up of IRS by 2010 was on the higher end among the districts that also began IRS in 2008.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, but rapidly rose to 72% in 2006 (95% CI: 58%, 83%). Coverage declined, dropping to 53% in 2010 (95% CI: 40%, 65%) and falling well below the national average of 68%.

IMMUNIZATIONS



BCG coverage declined from 96% in 1990 (95% CI: 91%, 98%) to 82% in 2006 (95% CI: 77%, 87%), but increased to 89% in 2010 (95% CI: 80%, 94%). Despite these recent gains, coverage remained among the lowest in Zambia in 2010.

After rising above 90% in the mid-1990s, measles immunization decreased to 81% in 2006 (95% CI: 75%, 86%), but rose to 90% in 2010 (95% CI: 77%, 97%). This level of coverage remained well below the national average of 98% for 2010.

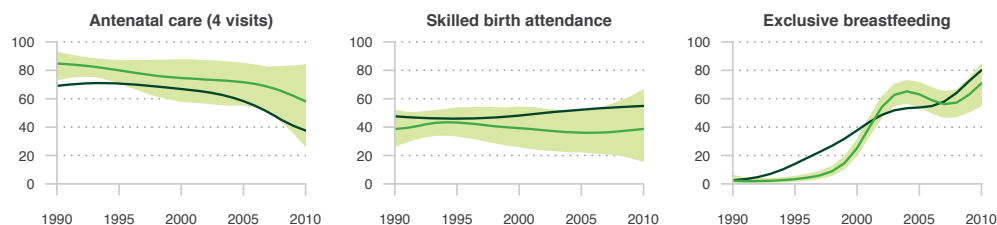
Coverage of polio immunization dropped from 83% in 1990 (95% CI: 72%, 91%) to 53% in 1996 and 1997. Coverage

increased to 77% from 2006 to 2008, but then decreased to 71% in 2010 (95% CI: 53%, 86%). This level of coverage was lower than the national average of 81% for that year.

After the pentavalent vaccine was formally introduced in Nchelenge in 2005, coverage increased to 31% in 2006 (95% CI: 24%, 38%) and 63% in 2010 (95% CI: 46%, 79%), which was slightly below the national average of 67%.

Nchelenge consistently had lower levels of immunization coverage than the national average in 2010. The district would likely benefit from addressing its vaccination challenges.

MATERNAL AND CHILD HEALTH INTERVENTIONS

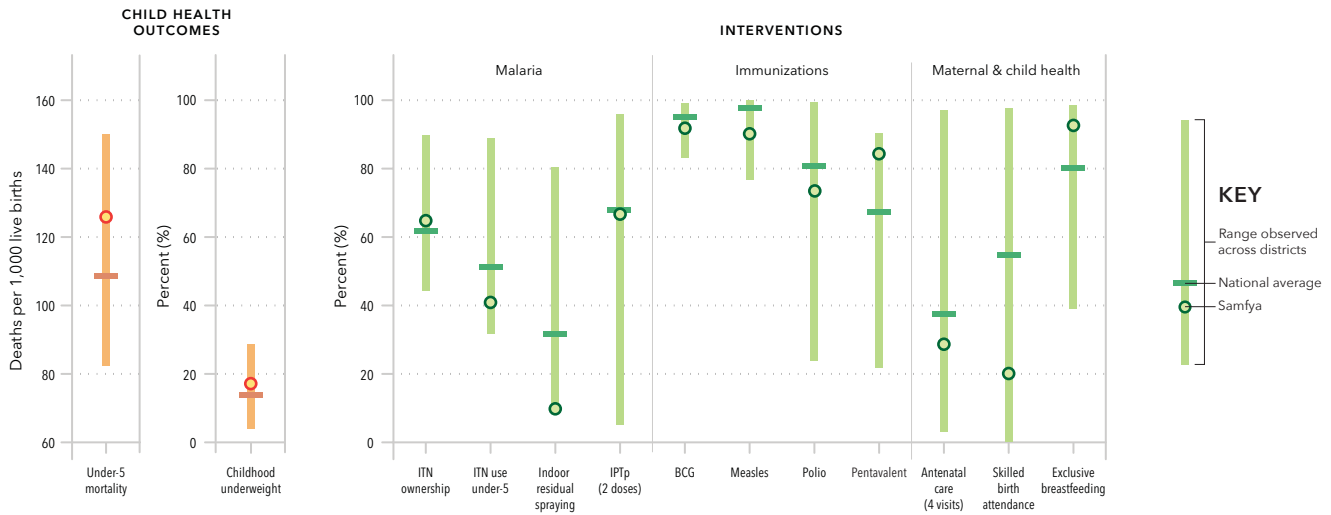


ANC4 coverage steadily declined from 85% in 1990 (95% CI: 73%, 92%) to 58% in 2010 (95% CI: 27%, 84%). While the district's ANC4 levels remained higher than the national average of 37% in 2010, the district's decline of nearly 30 percentage points in coverage since 1990 is cause for concern.

Skilled birth attendance remained between 36% and 43% from 1990 to 2010, with SBA coming in at 39% in 2010 (95% CI: 16%, 66%). This level of coverage was lower than the national average of 55% for 2010, and the district's overall lack of

progress in skilled birth attendance warrants further attention.

The proportion of children who were exclusively breastfed remained below 20% until 2000, after which coverage climbed to 65% in 2004 (95% CI: 57%, 73%). Coverage briefly declined, falling below 60% from 2006 to 2008, but increased to 71% in 2010 (95% CI: 55%, 84%). Despite these recent gains, the district's level of coverage in 2010 remained among the lowest in the country.



Note: Levels of child health outcomes and intervention coverage are for 2010. Better performance is reflected by lower levels of child health outcomes (orange) and higher levels of intervention coverage (green).

SUMMARY

Between 1990 and 2010, Samfya substantially reduced all-cause under-5 mortality and childhood underweight. However, its levels of under-5 mortality remained among the highest in Zambia in 2010. Prioritizing ways to further accelerate progress in child health outcomes, especially under-5 mortality, should be considered.

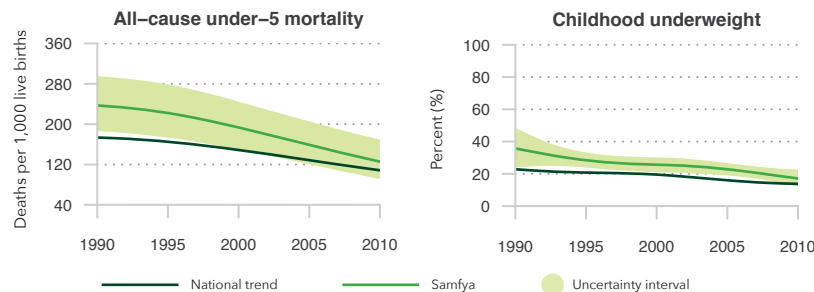
Samfya scaled up ITN ownership and IPTp2 through 2010, and successfully expanded coverage of the pentavalent vaccine to among the highest in Zambia. After a period of stagnation, Samfya substantially increased its levels of exclusive breastfeeding.

However, amidst these gains, some troubling trends were identified and warrant further attention. Minimal progress was

made in scaling up IRS, and ITN use declined to some of the lowest levels in Zambia. In 2010, immunization rates for BCG, measles, and polio remained lower than the national average. Skilled birth attendance stayed at very low levels, and Samfya recorded steep declines in ANC4 coverage in recent years.

In 2010, Samfya generally fell below the national average for immunizations and maternal and child health interventions (with pentavalent coverage and exclusive breastfeeding as the exceptions). For malaria interventions, the district had a more mixed performance. In comparison with the national average, Samfya showed higher levels of mortality and underweight.

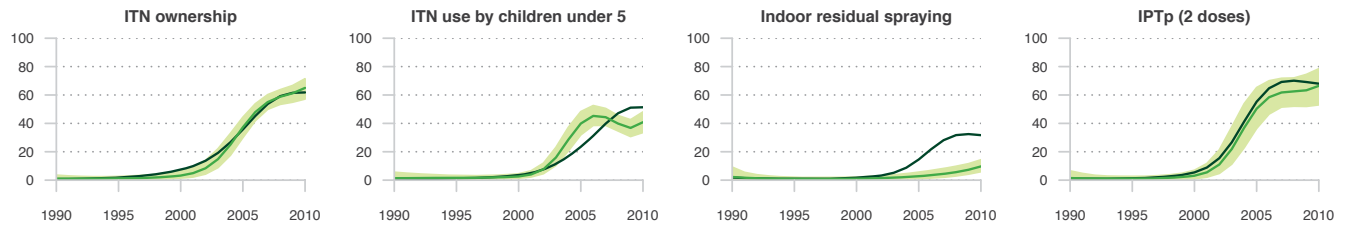
CHILD HEALTH OUTCOMES



From 1990 to 2010, Samfya recorded a significant reduction in all-cause under-5 mortality, dropping 47% from 237 deaths per 1,000 live births in 1990 (95% CI: 188, 293) to 126 in 2010 (95% CI: 93, 168). However, the district's under-5 mortality in 2010 remained much higher than the national average of 109 deaths per 1,000 live births (95% CI: 104 to 116) and was among the highest in Zambia for that year.

The proportion of children who were underweight decreased from 36% in 1990 (95% CI: 25%, 48%) to 17% in 2010 (95% CI: 13%, 22%), but still exceeded the national average of 14% for that year. Despite the district's progress, childhood underweight remained high in Samfya.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2003, after which coverage rapidly rose to 65% in 2010 (95% CI: 57%, 71%), rising slightly higher than the national average of 62%.

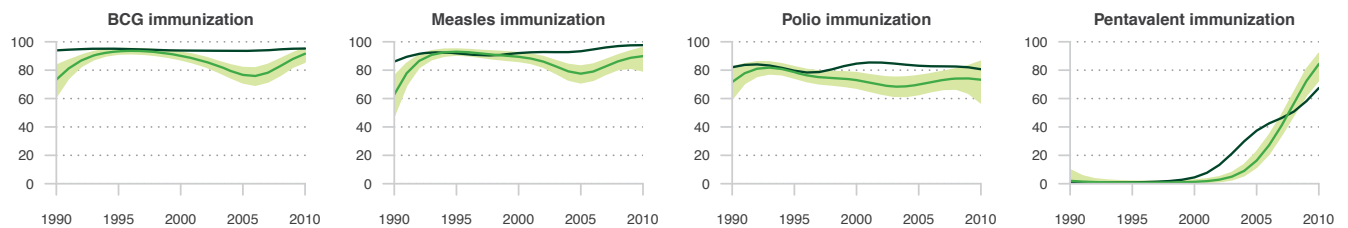
ITN use by children under 5 years old increased earlier to 45% in 2006 (95% CI: 39%, 53%), but dropped to 41% in 2010 (95% CI: 34%, 48%), falling among the lowest levels in the country. In 2010, the difference between ITN ownership and use (24 percentage points) was much higher in Samfya than what was observed at the national level (11 percentage points). The district's drop in ITN use is troubling given that ITN ownership did not decrease by 2010; this finding sug-

gests that something may have changed in the culture surrounding ITN use.

Samfya formally implemented IRS activities in 2010, and reached 10% of households that year (95% CI: 6%, 14%). Samfya's scale-up of IRS was on the lower end in comparison with other districts that also began IRS in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, but rapidly rose to 58% in 2006 (95% CI: 47%, 70%). Coverage continued to rise, though more slowly, reaching 66% in 2010 (95% CI: 53%, 78%), which was slightly lower than the national average of 68%.

IMMUNIZATIONS



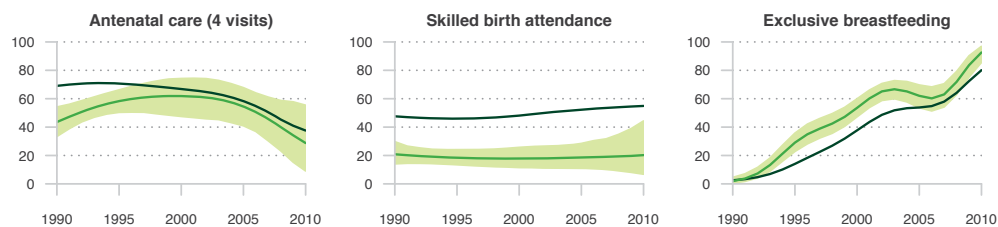
BCG immunization remained above 90% from 1993 to 2000, but fell to 76% in 2006 (95% CI: 69%, 82%). Coverage rebounded, increasing to 92% in 2010 (95% CI: 86%, 96%), but nonetheless remained below the national average of 95%.

Measles immunization exceeded 90% between 1993 and 1999, but fell to 78% in 2005 (95% CI: 71%, 83%). Coverage gradually recovered, reaching 90% in 2010 (95% CI: 80%, 96%), but still was much lower than the national average of 98%.

Polio immunization increased to 82% in 1993 (95% CI: 77%, 86%) before declining to 69% in 2003 and 2004. Polio coverage rose to 74% in 2008 and 2009, but slipped to 73% in 2010 (95% CI: 57%, 86%), falling below the national average of 81%.

After the pentavalent vaccine was formally introduced in Samfya in 2005, coverage increased to 27% in 2006 (95% CI: 21%, 34%) and 84% in 2010 (95% CI: 73%, 92%), rising to among the highest in Zambia.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage slowly increased from 44% in 1990 (95% CI: 33%, 54%) to 62% in the late 1990s, but substantially decreased to 29% in 2010 (95% CI: 9%, 55%) and fell below the national average of 37%. The finding that Samfya's levels of coverage fell over 30 percentage points since 2000 is worrisome.

From 1990 to 2010, skilled birth attendance remained between 18% and 20%, ultimately coming in at 20% in 2010 (95% CI: 7%, 44%) and falling well below the national average of 55%.

The proportion of children who were exclusively breastfed remained under 20% until 1994, after which coverage rose to 67% in 2003 (95% CI: 60%, 73%). Gains in coverage stalled until 2007, after which exclusive breastfeeding climbed to 93% in 2010 (95% CI: 86%, 97%) and far exceeded the national average of 80%.