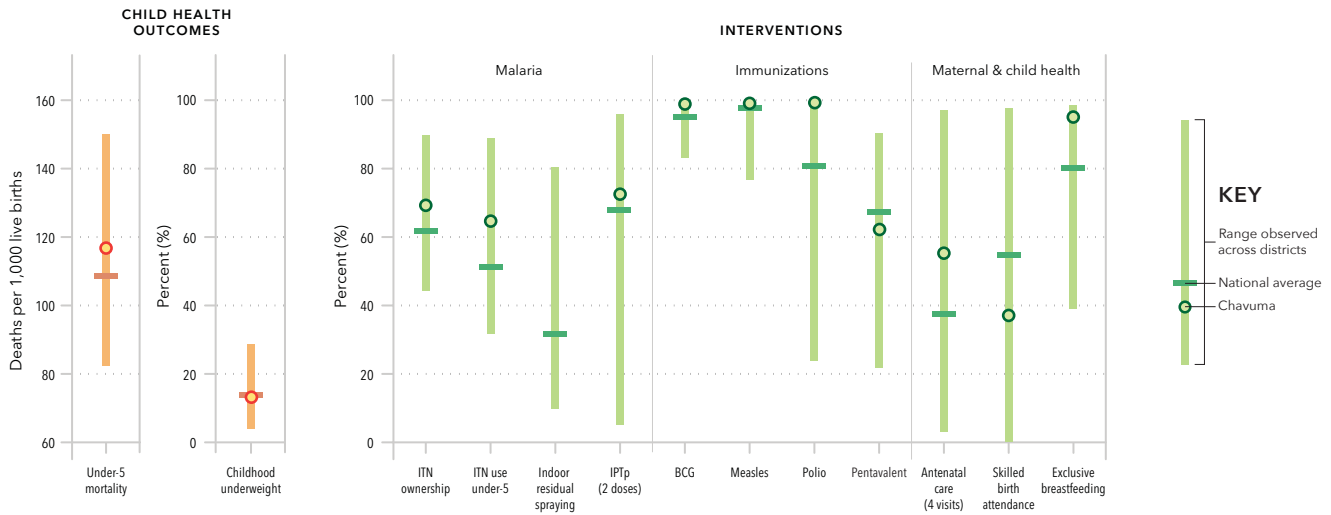


# North-western province



# Chavuma



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 Chavuma started IRS after 2010.

## SUMMARY

Chavuma reduced its all-cause under-5 mortality between 1990 and 2010, but the relative magnitude of the district's progress was quite low and mortality rates remained above the national average in 2010. Childhood underweight decreased in Chavuma, with the most progress occurring before 2005. Prioritizing ways to further accelerate gains for child health outcomes should be considered.

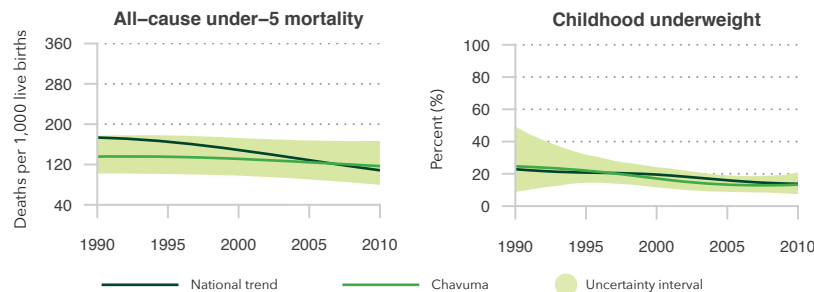
ITN coverage was scaled up to levels exceeding the national average in 2010, especially for ITN use. Pentavalent trends were similar to the national average by the late 2000s. Routine immunizations remained consistently high, with Chavuma having some of the highest levels of polio coverage in Zambia in 2010. After lagging behind the national scale-up

of exclusive breastfeeding, coverage increased to among the highest levels in Zambia in 2010.

However, amidst these gains, some troubling trends were identified and warrant further attention. IPTp2 coverage declined from its peak in 2007. Coverage of ANC4 and skilled birth attendance fell substantially during the 2000s, which is particularly worrisome given their high levels in the 1990s.

In 2010, Chavuma met or exceeded national levels across all interventions, except for the pentavalent vaccine and skilled birth attendance. In comparison with the national average, Chavuma showed higher levels of mortality and similar levels of underweight.

## CHILD HEALTH OUTCOMES

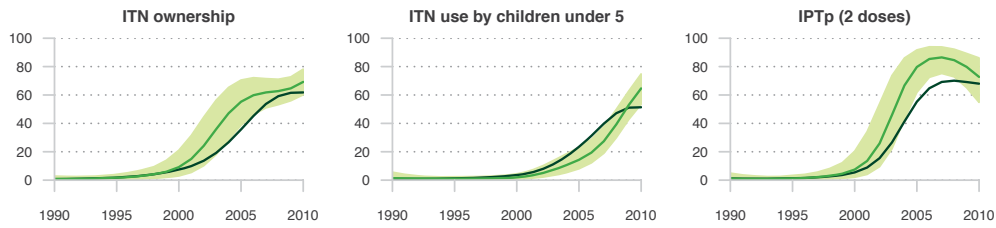


From 1990 to 2010, Chavuma recorded a relatively small reduction in all-cause under-5 mortality, dropping 14% from 136 deaths per 1,000 live births in 1990 (95% CI: 104, 175) to 117 in 2010 (95% CI: 82, 165); however, this decline was not statistically significant. In 2010, the district's level of under-5 mortality remained higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116). This fairly

minimal progress in reducing under-5 mortality is cause for concern.

The proportion of children who were underweight decreased from 25% in 1990 (95% CI: 9%, 49%) to 13% in 2005 (95% CI: 9%, 18%). This level of childhood underweight was maintained through 2010, and was comparable to the national average of 14% for that year.

## MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2001, after which coverage rapidly increased to 69% in 2010 (95% CI: 60%, 78%), exceeding the national average of 62%.

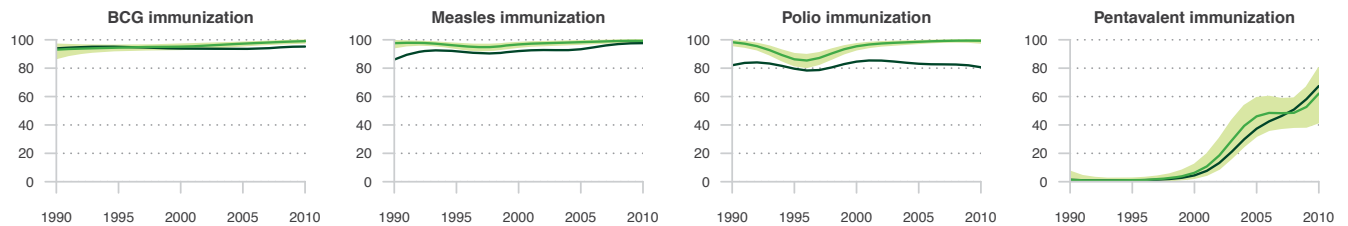
ITN use by children under 5 years old quickly increased to 65% in 2010 (95% CI: 53%, 75%), which was much higher than the national average of 51%. In 2010, the difference between ITN ownership and ITN use was quite low in Chavuma, which suggests that net use by children under 5 may be high among

households that have ITNs.

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

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, after which coverage rapidly increased to 86% in 2007 (95% CI: 75%, 94%). IPTp2 coverage declined to 73% in 2010 (95% CI: 55%, 86%), but was still higher than the national average of 68%.

## IMMUNIZATIONS



BCG immunization steadily rose from 93% in 1990 (95% CI: 87%, 97%) to 99% in 2009 (95% CI: 98%, 99%) and remained at this level through 2010, surpassing the national average of 95% and rising to among the highest in Zambia.

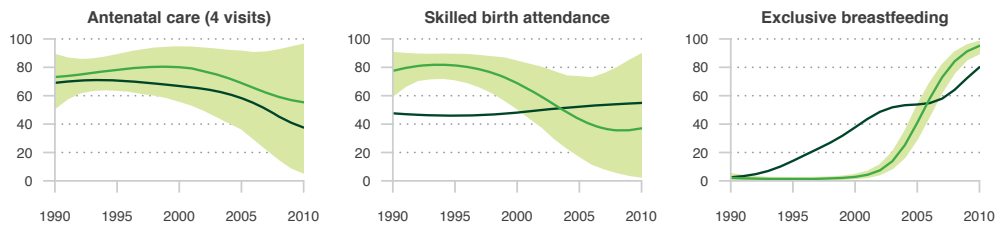
Measles immunization decreased from 98% in the early 1990s to 95% in the late 1990s, but steadily rose to 99% in 2006 (95% CI: 97%, 99%) and remained at this level through 2010. This level of measles coverage slightly exceeded the national average of 98% for 2010.

After briefly falling below 90% during the mid-1990s, polio immunization coverage increased to 99% in 2005 (95%

CI: 98%, 99%) and remained at this level through 2010. This level of coverage far exceeded the national average of 81% for 2010, and was among the highest in Zambia that year. Chavuma is considered a high-risk district for polio importation from neighboring countries, so maintaining high levels of polio immunization in the district is particularly important.

After the pentavalent vaccine was formally introduced in Chavuma in 2005, coverage hovered around 48% through 2008 and then increased to 62% in 2010 (95% CI: 42%, 80%). This level of pentavalent coverage remained lower than the national average of 67% for 2010.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage gradually increased from 73% in 1990 (95% CI: 51%, 89%) to 80% in 1997 (95% CI: 62%, 92%). Coverage remained at 80% through 2000, after which ANC4 declined to 55% in 2010 (95% CI: 6%, 96%). While coverage in Chavuma was higher than the national average of 37% in 2010, its levels remained lower than optimal.

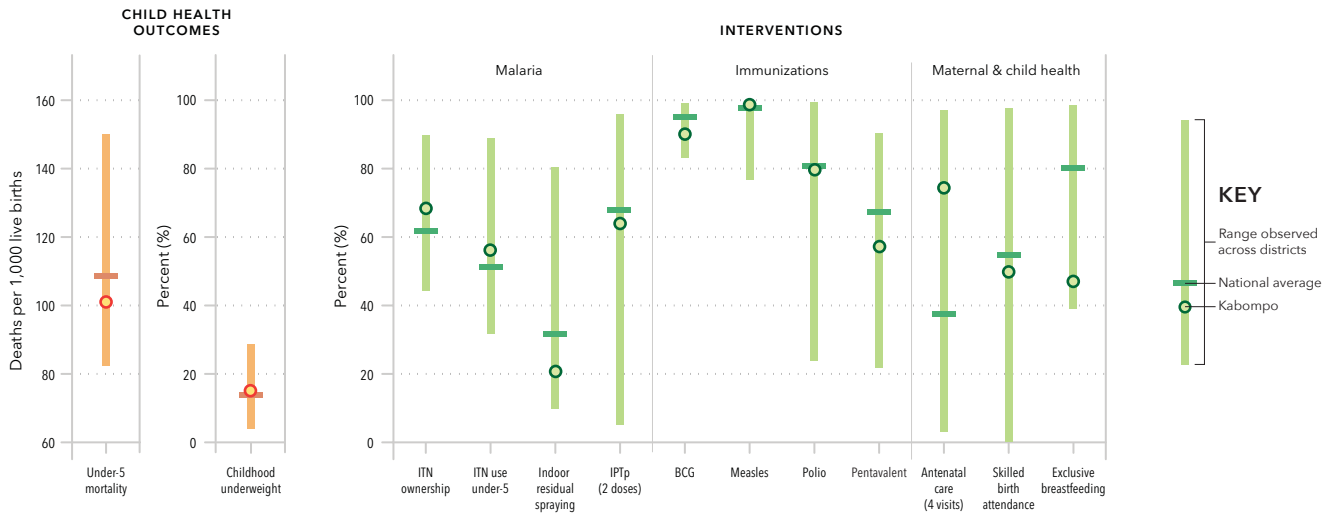
Skilled birth attendance increased to 80% in the mid-1990s, after which coverage decreased to 36% in the late 2000s, reaching 37% in 2010 (95% CI: 3%, 89%). This level

of SBA coverage was below the national average of 55% for 2010. This decline is worrisome given that Chavuma consistently exceeded the national trend during the 1990s.

The proportion of children who were exclusively breastfed remained below 20% until 2004, after which coverage rapidly increased to 95% in 2010 (95% CI: 90%, 98%). This level of exclusive breastfeeding far exceeded the national average of 80% for 2010 and was among the highest in Zambia.



# Kabompo



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

Kabompo substantially reduced all-cause under-5 mortality from 1990 to 2010, but recorded minimal progress in decreasing childhood underweight. Prioritizing ways to accelerate gains for child health outcomes, especially childhood underweight, should be considered.

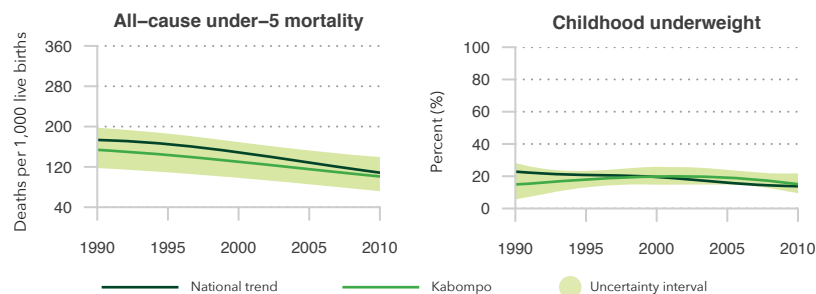
The district was able to rapidly scale up ITNs through 2010, and Kabompo documented high levels of measles immunization through the 2000s. Although ANC4 coverage was higher in the 1990s than it was in 2010, the district's levels remained among the highest in Zambia for 2010.

However, amidst these gains, some troubling trends were identified and warrant further attention. IRS remained low,

and IPTp2 coverage declined from its peak in 2007. The district's scale-up of the pentavalent vaccine lagged behind the national trend, and BCG coverage fell below the national average in 2010. Skilled birth attendance declined after a period of steady gains, and exclusive breastfeeding dropped sharply to among the lowest levels in Zambia.

In 2010, Kabompo met or fell below the national average across interventions, with the district's ITN coverage and levels of ANC4 as the clear exceptions. In comparison with the national average, Kabompo showed lower levels of mortality and similar levels of underweight.

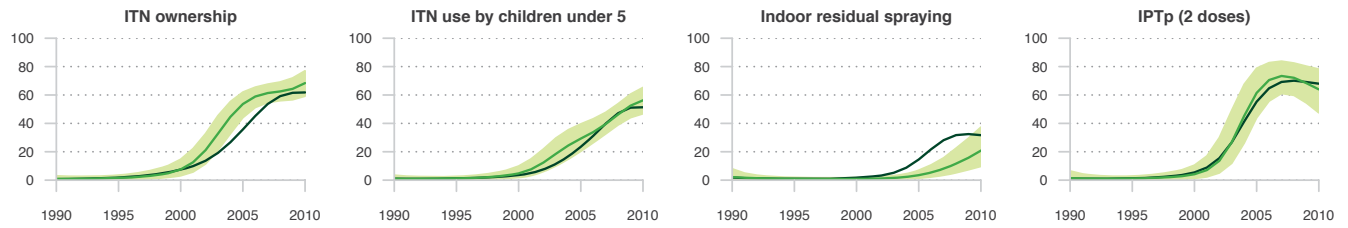
## CHILD HEALTH OUTCOMES



From 1990 to 2010, Kabompo recorded a significant reduction in all-cause under-5 mortality, dropping 34% from 154 deaths per 1,000 live births in 1990 (95% CI: 120, 196) to 101 in 2010 (95% CI: 73, 137). In 2010, the district's under-5 mortality was lower than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116).

The proportion of children who were underweight increased from 15% in 1990 (95% CI: 6%, 28%) to 20% in 1999 (95% CI: 16%, 25%). Childhood underweight remained at 20% through 2003, after which levels declined to 15% in 2010 (95% CI: 10%, 21%), which was comparable to the national average of 14%.

## MALARIA INTERVENTIONS



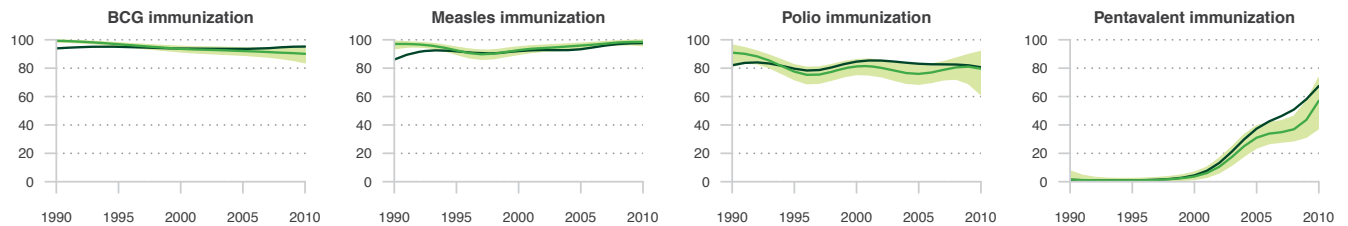
ITN ownership remained below 10% until 2001, after which coverage rapidly increased to 68% in 2010 (95% CI: 59%, 77%), exceeding the national average of 62%.

ITN use by children under 5 years old quickly rose to 56% in 2010 (95% CI: 47%, 65%), which was higher than the national average of 51%. In 2010, the difference between ITN ownership and use (12 percentage points) in Kabompo was comparable to what was observed at the national level.

Kabompo formally implemented IRS activities in 2010, and reached 21% of households that year (95% CI: 10%, 37%). This scale-up of IRS was on the lower end compared to other districts that also began IRS in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, but rose to 73% in 2007 (95% CI: 61%, 84%). Coverage then decreased to 64% in 2010 (95% CI: 47%, 78%), which was lower than the national average of 68%.

## IMMUNIZATIONS



BCG immunization decreased from 99% in the early 1990s to 90% in 2010 (95% CI: 84%, 94%), which was much lower than the national average of 95%.

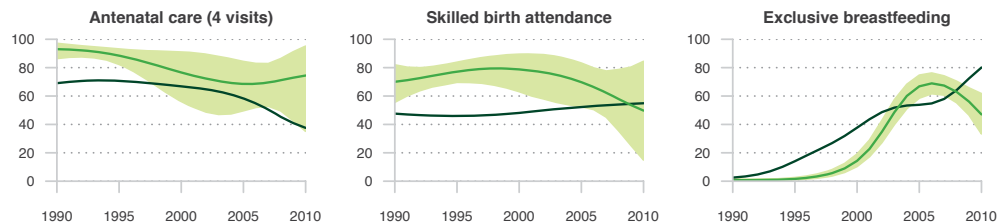
Measles immunization decreased from 97% in 1990 (95% CI: 94%, 99%) to 90% in the late 1990s before steadily rising to 99% in 2010 (95% CI: 96%, 100%), which was slightly higher than the national average of 98%.

Coverage of polio immunization varied over time, falling from 91% in 1990 (95% CI: 81%, 96%) to below 80% during the late 1990s. Aside from slipping below 80% in the mid-2000s, polio coverage hovered around 80% in the 2000s,

equaling 80% in 2010 (95% CI: 62%, 92%). This level of coverage was comparable to the national average of 81% in 2010. Kabompo is considered a high-risk district for polio importation from neighboring countries, so prioritizing efforts to increase and maintain high levels of polio immunization coverage in the district is likely to be important.

After the pentavalent vaccine was formally introduced in Kabompo in 2005, coverage increased to 37% in 2008 (95% CI: 29%, 46%) and 57% in 2010 (95% CI: 38%, 73%). This level of coverage was well below the national average of 67% in 2010, and was among the lowest in Zambia.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage decreased from 93% in 1990 (95% CI: 86%, 97%) to 69% in the mid-2000s, but then slightly increased to 74% in 2010 (95% CI: 35%, 95%). This level of ANC4 coverage was among the highest in Zambia for 2010.

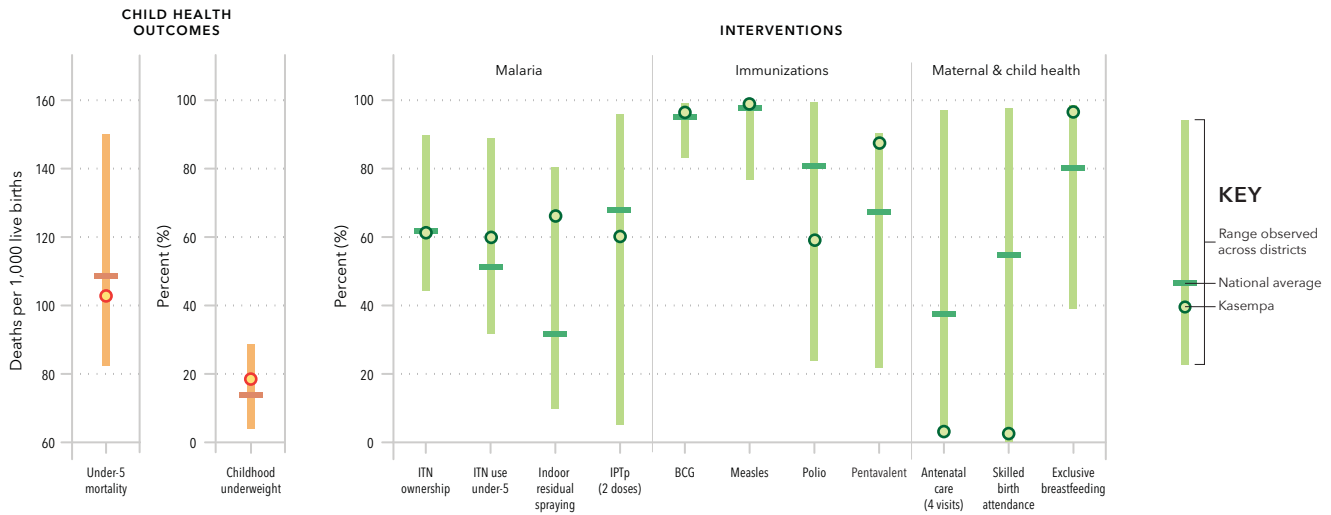
Skilled birth attendance gradually increased from 70% in 1990 (95% CI: 56%, 82%) to 79% in 1997 (95% CI: 69%, 87%). Coverage remained at 79% through 2000, after which SBA declined to 50% in 2010 (95% CI: 15%, 84%), falling slightly lower than the national average of 55%. Kabompo's down-

ward trend in SBA coverage was in direct contrast with the gradual increases observed at the national level.

The proportion of children who were exclusively breastfed remained below 20% until 2001, after which coverage climbed to 69% in 2006 (95% CI: 62%, 76%). However, exclusive breastfeeding then declined as quickly as it increased, dropping to 47% in 2010 (95% CI: 33%, 62%) and falling among the lowest levels in Zambia for that year. This decline in coverage in recent years is cause for concern.



# Kasempa



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

Kasempa reduced its all-cause under-5 mortality from 1990 to 2010, but the relative magnitude of the district’s progress was quite low. Childhood underweight substantially declined from very high levels, but its prevalence in Kasempa remained higher than the national average in 2010. Prioritizing ways to further accelerate gains in child health outcomes should be considered.

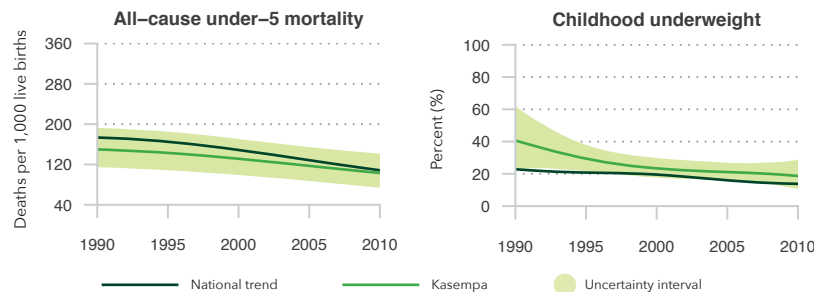
Kasempa scaled up IRS to among the highest levels in Zambia in 2010. A similar feat was achieved for coverage of the pentavalent vaccine and exclusive breastfeeding. Levels of BCG and measles immunization also remained high in 2010.

However, amidst these successes, several troubling trends

were identified and warrant further attention. IPTp2 coverage fell substantially from its peak in the mid-2000s, and polio immunization coverage steadily declined to very low levels. After achieving fairly high coverage in the late 1990s, ANC4 and skilled birth attendance drastically decreased to some of the lowest levels in Zambia.

In 2010, Kasempa generally met or exceeded national levels for malaria interventions and immunizations, but fell well below the national average for maternal and child health interventions (with the exception of exclusive breastfeeding). In comparison with the national average, Kasempa showed slightly lower levels of mortality and higher levels of underweight.

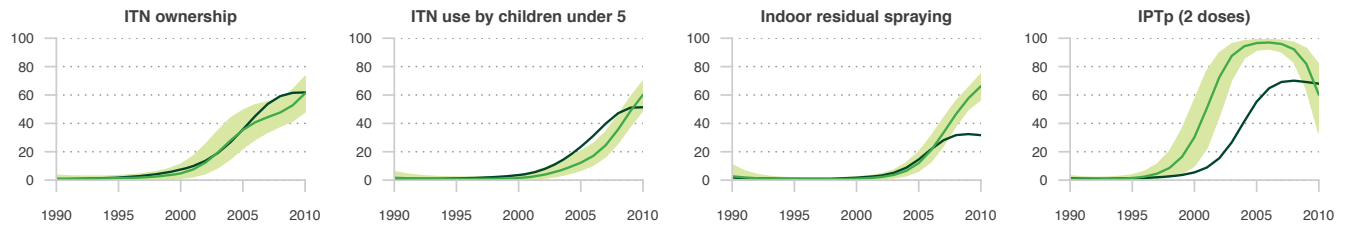
## CHILD HEALTH OUTCOMES



From 1990 to 2010, Kasempa recorded a reduction in all-cause under-5 mortality, dropping 31% from 150 deaths per 1,000 live births in 1990 (95% CI: 117, 191) to 103 in 2010 (95% CI: 75, 139); however, this decline was not statistically significant. 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).

The proportion of children who were underweight decreased from 41% in 1990 (95% CI: 23%, 61%) to 19% in 2009 (95% CI: 13%, 27%). Childhood underweight remained at 19% through 2010, which was higher than the national average of 14%. Kasempa’s progress is noteworthy given that its prevalence of underweight was nearly twice the national average in 1990; nonetheless, more work remains.

## MALARIA INTERVENTIONS



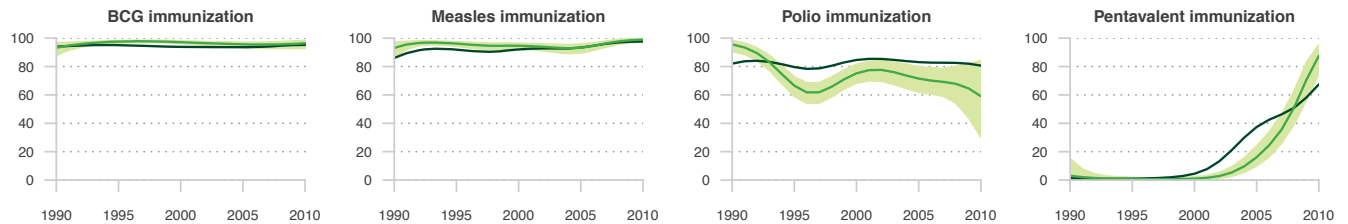
ITN ownership remained below 10% until 2002, after which coverage increased to 61% in 2010 (95% CI: 48%, 73%). This level of ITN ownership was comparable to the national average of 62% for 2010.

ITN use by children under 5 years old rapidly rose to 60% in 2010 (95% CI: 49%, 70%), which was higher than the national average of 51%. In 2010, the difference between ITN ownership and ITN use was quite low in Kasempa, which suggests that net use by children under 5 may be high among households that have ITNs.

Kasempa formally implemented IRS activities in 2008 and reached 47% of households that year (95% CI: 38%, 56%). In 2010, 66% of households were sprayed (95% CI: 57%, 75%), which was one of the highest levels of IRS coverage among the 54 districts that had IRS at that time.

The proportion of pregnant women who received IPTp2 remained below 10% until 1999, but rapidly rose to 97% in the mid-2000s. Coverage then fell to 60% in 2010 (95% CI: 33%, 82%), which was below the national average of 68%.

## IMMUNIZATIONS



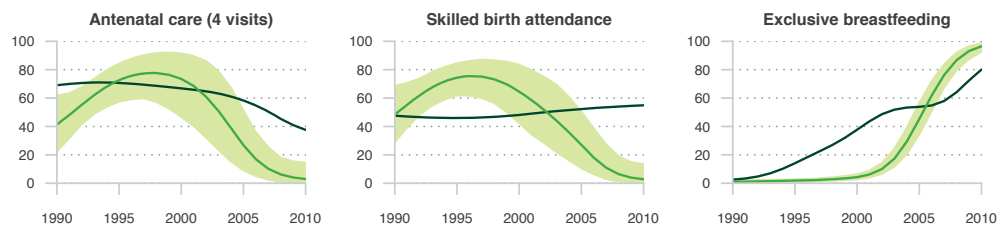
BCG coverage increased from 93% in 1990 (95% CI: 88%, 97%) to 98% during the mid- to late 1990s, but coverage then declined to 95% in the mid-2000s. BCG immunization rose to 96% in 2008 (95% CI: 93%, 98%) and remained at 96% through 2010, which was slightly higher than the national average of 95%.

Measles immunization rose to 97% during the mid-1990s but decreased to 93% in the mid-2000s. Coverage then increased to 99% in 2009 (95% CI: 97%, 100%) and remained at 99% through 2010, slightly exceeding the national average of 98%.

Coverage of polio immunization dropped from 96% in 1990 (95% CI: 91%, 98%) to 62% in 1996 (95% CI: 54%, 69%), but recovered to 78% in 2002 (95% CI: 70%, 84%). Polio coverage then declined to 59% in 2010 (95% CI: 30%, 84%), falling to among the lowest levels in the country.

After the pentavalent vaccine was formally introduced in Kasempa in 2005, coverage increased to 24% in 2006 (95% CI: 16%, 34%) and then rose to 88% in 2010 (95% CI: 75%, 95%). This level of coverage was among the highest in Zambia in 2010.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 41% in 1990 (95% CI: 22%, 62%) to 78% in 1998 (95% CI: 57%, 92%) before steeply falling to 3% in 2010 (95% CI: 0%, 15%), which was among the lowest in Zambia for that year. This precipitous drop in ANC4 coverage is quite worrisome given the district's gains during the 1990s.

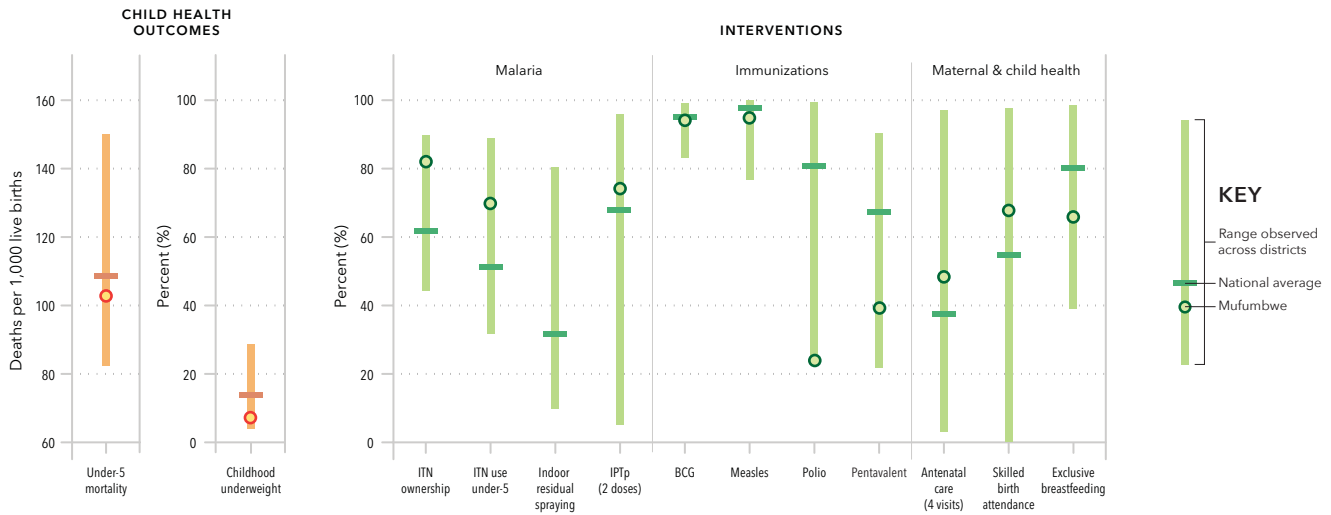
Skilled birth attendance rose from 48% in 1990 (95% CI: 29%, 69%) to 75% in the mid-1990s, but then quickly decreased to 3% in 2010 (95% CI: 0%, 14%). This level of SBA

coverage was among the lowest in Zambia in 2010, and the district's large decline in coverage during the 2000s is cause for concern.

The proportion of children who were exclusively breastfed remained below 20% until 2004, after which coverage rapidly increased to 97% in 2010 (95% CI: 93%, 99%), far exceeding the national average of 80% and rising to among the highest levels in Zambia for 2010.



# Mufumbwe



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 Mufumbwe started IRS after 2010.

## SUMMARY

Between 1990 and 2010, Mufumbwe substantially reduced all-cause under-5 mortality and childhood underweight, with the latter falling among the lowest in Zambia for 2010. Prioritizing efforts to maintain these rates of improvement in child health outcomes should be considered.

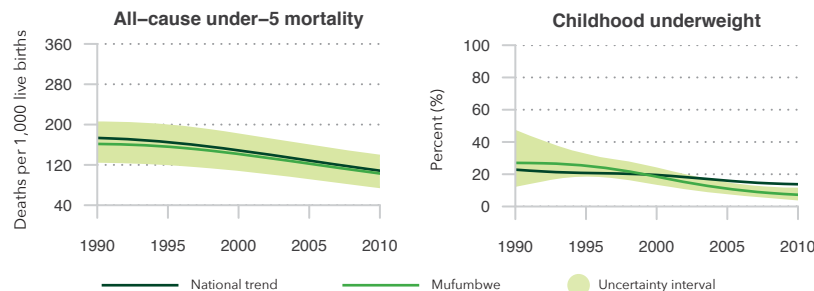
Mufumbwe increased ITN ownership and use to very high levels, rising to among the highest levels in Zambia for 2010. Moderately high coverage of BCG and measles immunization also was maintained. Mufumbwe was successful in greatly increasing skilled birth attendance after recording very low levels of coverage during the 1990s.

However, amidst these successes, several troubling trends were identified and warrant further attention. While IPTp2 coverage remained above the national average in 2010, its

levels decreased since 2007. The district had a very marginal scale-up of the pentavalent vaccine, and polio immunization plummeted to some of the lowest levels in Zambia. Exclusive breastfeeding remained below the national average in 2010, and alarmingly, ANC4 coverage dropped sharply after a period of substantial gains and sustained high levels of coverage during the late 1990s and early 2000s.

In 2010, Mufumbwe generally exceeded national levels for malaria interventions and maternal and child health interventions (except for exclusive breastfeeding). For immunizations, Mufumbwe's performance was more varied. In comparison with the national average, Mufumbwe showed lower levels of mortality and much lower levels of underweight.

## CHILD HEALTH OUTCOMES

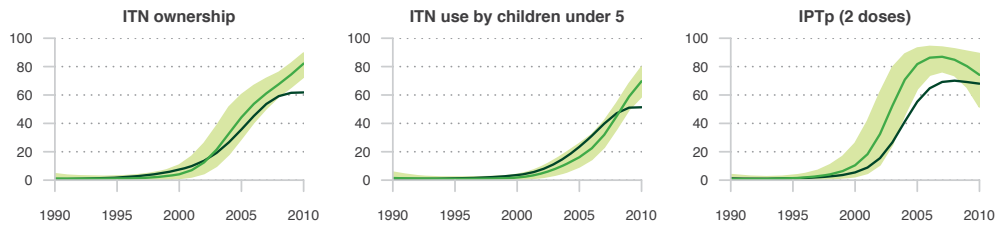


From 1990 to 2010, Mufumbwe recorded a significant reduction in all-cause under-5 mortality, dropping 36% from 162 deaths per 1,000 live births in 1990 (95% CI: 126, 204) to 103 in 2010 (95% CI: 76, 138). In 2010, the district's under-5 mortality was lower than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116).

The proportion of children who were underweight steadily decreased from 27% in the early 1990s to 7% in 2010 (95% CI: 4%, 11%), which was well below the national average of 14%. In 2010, Mufumbwe had one of the lowest levels of childhood underweight in Zambia.



## MALARIA INTERVENTIONS



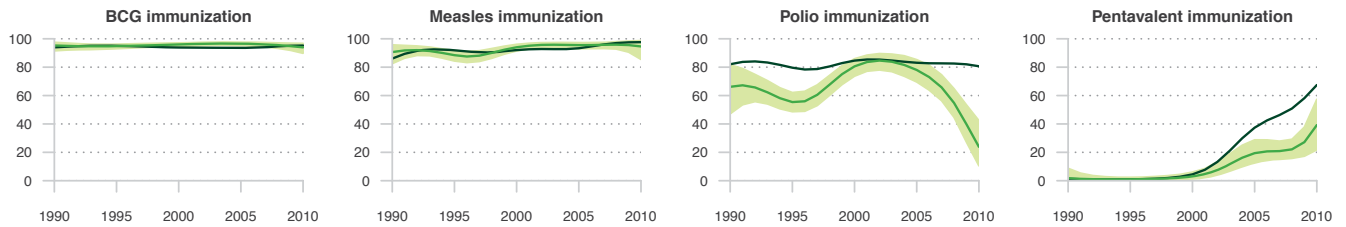
ITN ownership remained below 10% until 2002, after which coverage rapidly increased to 82% in 2010 (95% CI: 73%, 90%), rising to among the highest levels in Zambia.

ITN use by children under 5 years old quickly rose to 70% in 2010 (95% CI: 59%, 80%), which was one of the highest levels in Zambia for 2010. The difference between ITN ownership and use (12 percentage points) in Mufumbwe was comparable to what was observed at the national level for 2010.

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

The proportion of pregnant women who received IPTp2 remained below 10% until 2000, after which coverage quickly increased to 87% in 2007 (95% CI: 76%, 94%). IPTp2 coverage slipped to 74% in 2010 (95% CI: 52%, 89%), but remained above the national average of 68% for that year.

## IMMUNIZATIONS



BCG coverage increased from 95% during the early to mid-1990s to 97% in 2003 (95% CI: 95%, 98%). This level of coverage was sustained through 2005, after which BCG immunization slipped to 94% in 2010 (95% CI: 90%, 97%), which was slightly lower than the national average of 95%.

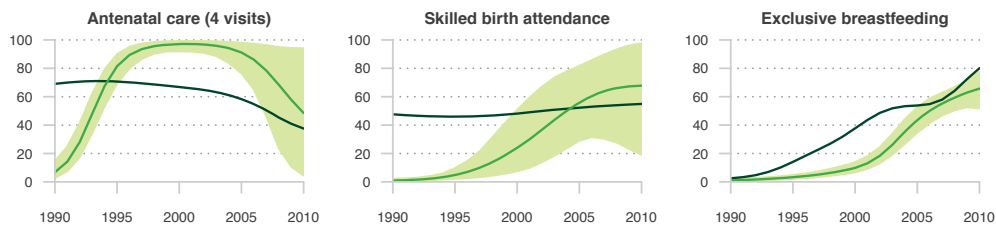
After hovering around 90% in the early 1990s, measles immunization dropped to 88% in the mid-1990s. Coverage rose to 96% in 2002 (95% CI: 94%, 97%) and remained at 96% until 2010, when measles coverage dipped to 95% (95% CI: 85%, 99%), which was lower than the national average of 98%.

Coverage of polio immunization decreased from 66% in 1990 (95% CI: 47%, 82%) to 55% in 1995 (95% CI: 49%, 62%),

but rebounded to 85% in 2002 (95% CI: 78%, 90%). Polio coverage remained over 80% until 2005, after which levels fell considerably to a low of 24% in 2010 (95% CI: 10%, 42%). This drastic drop in coverage left Mufumbwe with one of the lowest levels of polio immunization in Zambia for 2010.

After the pentavalent vaccine was formally introduced in Mufumbwe in 2005, coverage hovered around 20% through 2008 and then increased to 39% in 2010 (95% CI: 22%, 57%). This level of pentavalent coverage was among the lowest in Zambia for 2010. Mufumbwe's marginal scale-up of the pentavalent vaccine is cause for concern.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



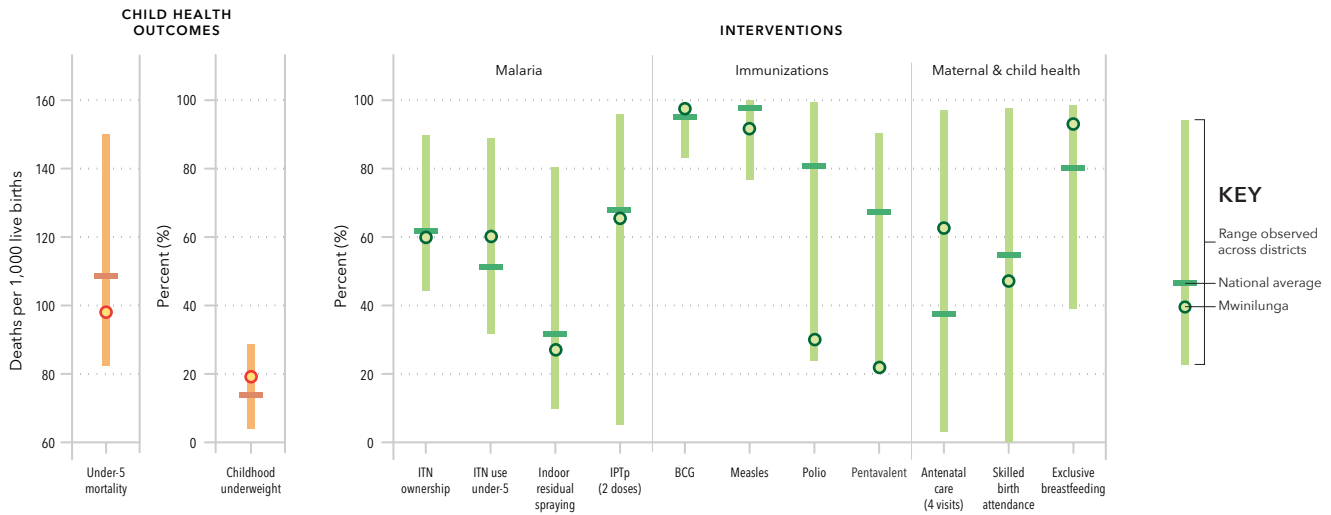
ANC4 coverage rapidly increased from 7% in 1990 (95% CI: 3%, 15%) to 97% in 1999 (95% CI: 92%, 99%). Coverage remained at 97% through 2002, after which ANC4 declined to 48% in 2010 (95% CI: 4%, 94%). While this level of coverage was higher than the national average of 37% in 2010, the district's gains in ANC4 during the 1990s and early 2000s were effectively reversed.

Skilled birth attendance remained below 10% until 1997, after which coverage steadily increased to 68% in 2010 (95% CI: 19%, 98%), exceeding the national average of 55%.

The proportion of children who were exclusively breastfed remained below 20% until 2003, after which coverage increased to 66% in 2010 (95% CI: 52%, 78%). This level of exclusive breastfeeding was among the lowest in Zambia in 2010.



# Mwinilunga



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, Mwinilunga reduced its all-cause under-5 mortality, but the relative magnitude of the district's declines was quite low. Childhood underweight substantially decreased, but still remained above the national average in 2010. Prioritizing efforts to accelerate gains for child health outcomes should be considered.

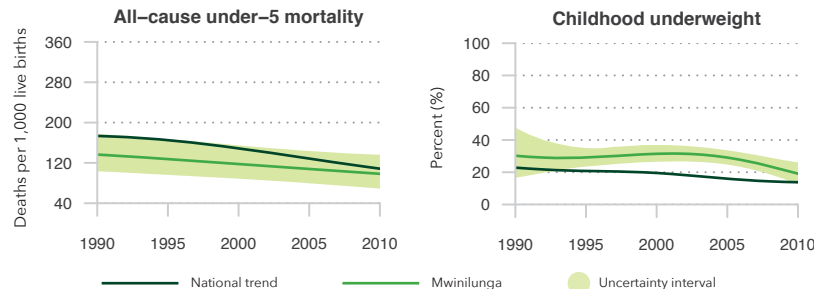
Coverage of ITNs reached or exceeded national levels in 2010, and Mwinilunga increased exclusive breastfeeding to very high levels. BCG immunization remained consistently high over time.

However, amidst these gains, several troubling trends were identified and warrant further attention. IPTp2 coverage declined since its peak in 2007, and measles coverage substantially declined from high levels during the 1990s. Marginal

gains took place for pentavalent coverage, and skilled birth attendance stayed at low levels. Polio immunization plummeted to some of the lowest levels in Zambia in 2010, which is particularly worrying given that Mwinilunga is considered a high-risk district for polio importation. After maintaining high levels of coverage in the 1990s, ANC4 coverage declined.

In 2010, Mwinilunga exceeded national levels for maternal and child health interventions (except for skilled birth attendance), but fell below the national average for malaria interventions and immunizations (with the exceptions of ITN use and BCG coverage). In comparison with the national average, Mwinilunga showed lower levels of mortality and higher levels of underweight.

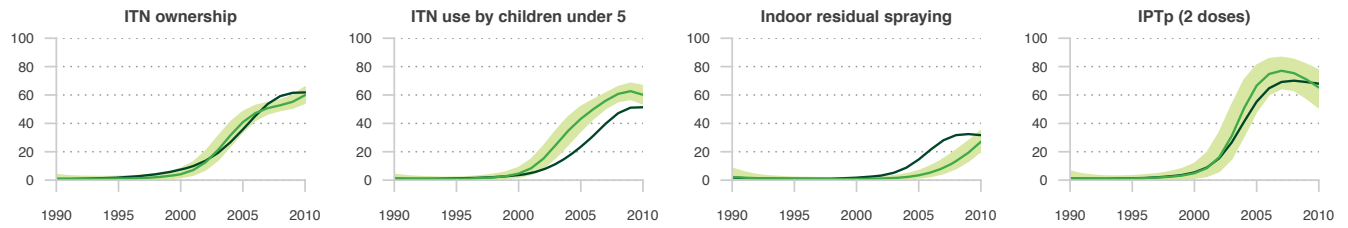
## CHILD HEALTH OUTCOMES



From 1990 to 2010, Mwinilunga recorded a reduction in all-cause under-5 mortality, dropping 28% from 137 deaths per 1,000 live births in 1990 (95% CI: 106, 175) to 98 in 2010 (95% CI: 71, 134); however, this decline was not statistically significant. In 2010, the district's under-5 mortality was well below the national average of 109 deaths per 1,000 live births (95% CI: 104, 116).

The proportion of children who were underweight hovered around 30% during the 1990s, slightly increasing to 32% in 2001 (95% CI: 27%, 36%). Underweight then steadily decreased to 19% in 2010 (95% CI: 13%, 25%), but remained higher than the national average of 14% for that year.

## MALARIA INTERVENTIONS



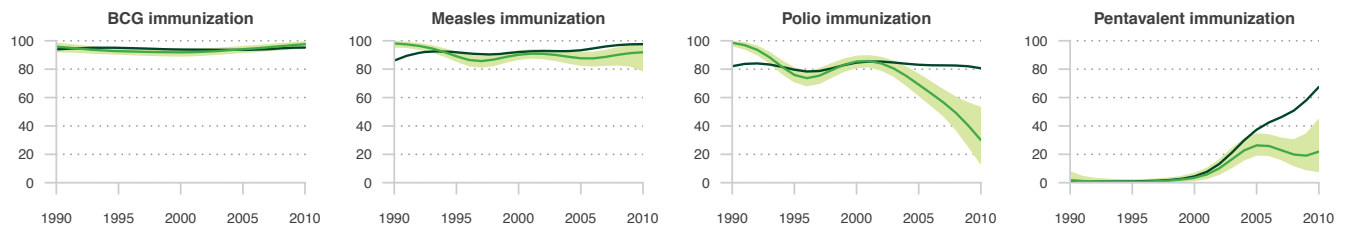
ITN ownership remained below 10% until 2002, after which coverage rapidly increased to 60% in 2010 (95% CI: 54%, 66%), falling slightly lower than the national average of 62%.

ITN use by children under 5 years old climbed to 63% in 2009 (95% CI: 57%, 68%), but slipped to 60% in 2010 (95% CI: 54%, 67%). This level of ITN use was higher than the national average of 51% for 2010. ITN ownership equaled ITN use in Mwinilunga for 2010, which suggests that net use by children under 5 may be high among households that have ITNs.

Mwinilunga formally implemented IRS activities in 2010 and reached 27% of households that year (95% CI: 20%, 35%). This scale-up of IRS was on the lower end as compared to other districts that also began IRS in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage increased to 77% in 2007 (95% CI: 65%, 86%). IPTp2 coverage fell to 65% in 2010 (95% CI: 51%, 77%), which was slightly lower than the national average of 68%.

## IMMUNIZATIONS



BCG coverage decreased from 96% in 1990 (95% CI: 92%, 98%) to 92% in the late 1990s and remained at this level until 2002, after which coverage steadily rose to 98% in 2010 (95% CI: 95%, 99%). This level of BCG immunization was higher than the national average of 95% for 2010.

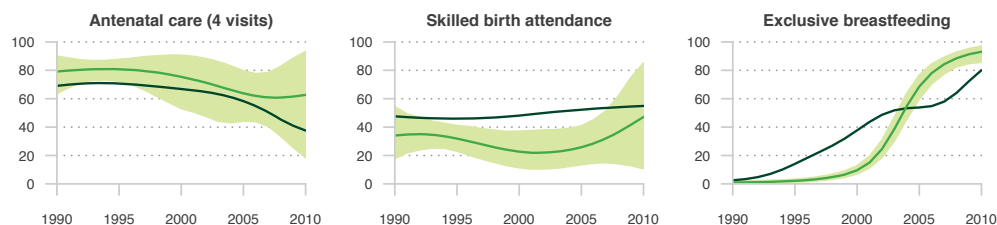
Measles immunization fell from 98% in 1990 (95% CI: 96%, 99%) to 86% in the mid-1990s. Coverage wavered around 90% for most of the 2000s, slightly increasing to 92% in 2010 (95% CI: 79%, 98%) but still remaining lower than the national average of 98% for 2010.

Polio immunization coverage dropped from 99% in 1990 (95% CI: 97%, 100%) to 74% in 1996 (95% CI: 69%, 78%). Polio

coverage increased and remained above 80% during the late 1990s and early 2000s, but then declined considerably to 30% in 2010 (95% CI: 14%, 53%), among the lowest in Zambia in 2010. Mwinilunga is considered a high-risk district for polio importation from neighboring countries, so addressing the district's faltering levels of polio coverage is likely to be important.

After the pentavalent vaccine was formally introduced in Mwinilunga in 2005, coverage hovered around 26% before declining to 19% in 2009 (95% CI: 9%, 34%). Pentavalent coverage increased slightly to 22% in 2010 (95% CI: 8%, 44%), but remained among the lowest levels in Zambia for 2010. Mwinilunga's very minimal scale-up of the vaccine is cause for concern.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage remained around 80% in the 1990s before falling to 63% in 2010 (95% CI: 18%, 93%). Although this level of ANC4 in 2010 remained higher than the national average of 37% in 2010, coverage still decreased nearly 20 percentage points between the 1990s and 2010.

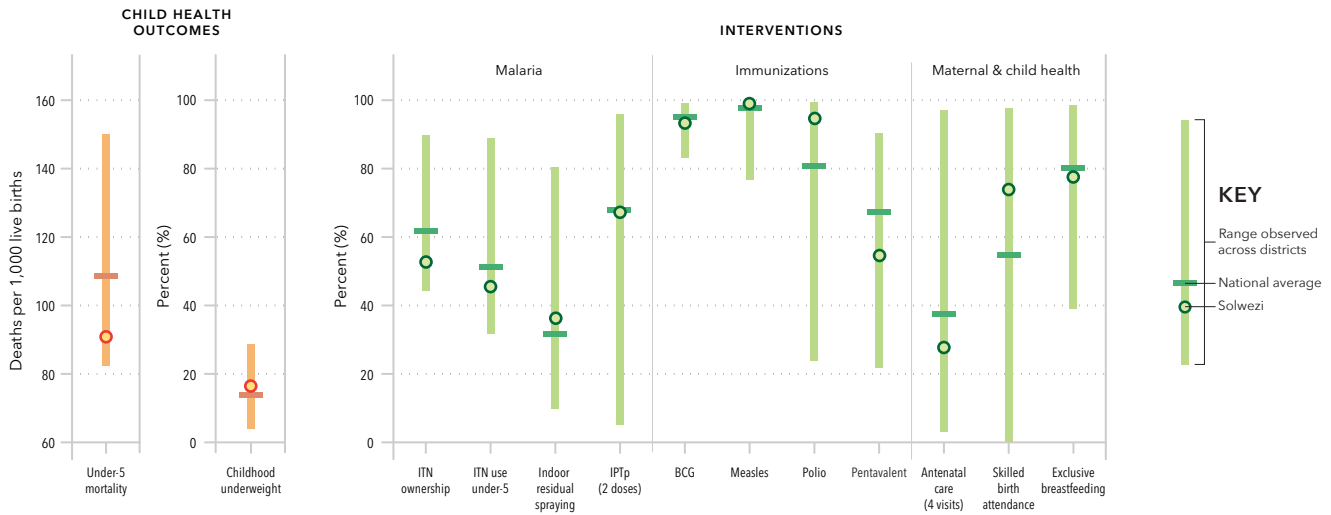
Skilled birth attendance decreased from 34% in 1990 (95% CI: 18%, 54%) to 22% in the early 2000s before gradu-

ally increasing to 47% in 2010 (95% CI: 11%, 85%). This level of SBA coverage still remained below the national average of 55% for 2010.

The proportion of children who were exclusively breastfed remained below 20% until 2002, after which coverage quickly increased to 93% in 2010 (95% CI: 86%, 97%) and far exceeded the national average of 80% for that year.



# Solwezi



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

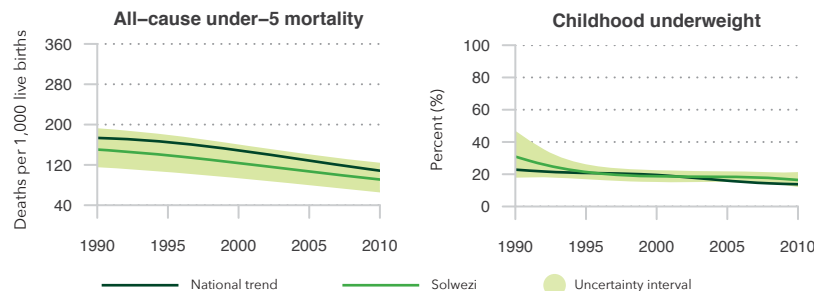
Between 1990 and 2010, Solwezi substantially reduced all-cause under-5 mortality and childhood underweight, with the district bringing its under-5 mortality to among the lowest levels in Zambia for 2010. However, the district's levels of underweight remained higher than the national average in the same year. Prioritizing ways to further accelerate gains for child health outcomes, especially childhood underweight, should be considered.

Solwezi's levels of IPTp2 and IRS closely followed the national trend through 2010. High coverage of measles immunization was achieved in 2010, and polio coverage increased to some of the highest levels in Zambia. Solwezi made steady progress in increasing skilled birth attendance, and coverage of exclusive breastfeeding reached national levels in 2010.

However, amidst these gains, some troubling trends were identified and warrant further attention. ITN ownership was among the lowest in Zambia for 2010. Coverage of the pentavalent vaccine was consistently lower than the national average since its introduction. After maintaining fairly high levels of coverage in the 1990s, ANC4 coverage substantially declined.

In 2010, Solwezi met or exceeded national levels for immunizations (with the exception of the pentavalent vaccine) and maternal and child health interventions (excluding ANC4), but equaled or fell below for malaria interventions (aside from IRS). In comparison with the national average, Solwezi showed much lower levels of mortality and slightly higher levels of underweight.

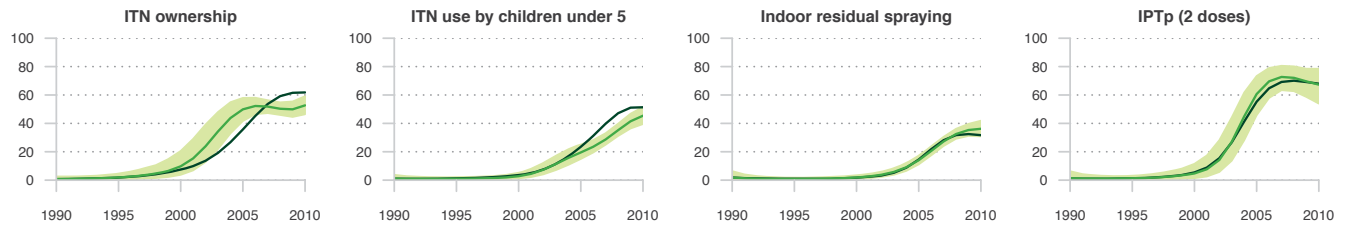
## CHILD HEALTH OUTCOMES



From 1990 to 2010, Solwezi recorded a significant reduction in all-cause under-5 mortality, dropping 40% from 150 deaths per 1,000 live births in 1990 (95% CI: 117, 191) to 91 in 2010 (95% CI: 67, 122). In 2010, the district's under-5 mortality was much lower than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116) and was among the lowest in Zambia.

The proportion of children who were underweight decreased from 31% in 1990 (95% CI: 18%, 46%) to 16% in 2010 (95% CI: 13%, 21%). This level of childhood underweight remained slightly higher than the national average of 14% in 2010, but Solwezi's progress in reducing the levels of underweight from its peak in 1990 is notable.

## MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2000, after which coverage quickly increased to 52% in 2006 (95% CI: 46%, 58%). Ownership remained at 52% through 2007 before briefly slipping to 50% in 2008 and 2009. In 2010, ITN ownership rebounded to 53% (95% CI: 46%, 59%), but still fell well below the national average of 62% and was among the lowest in Zambia.

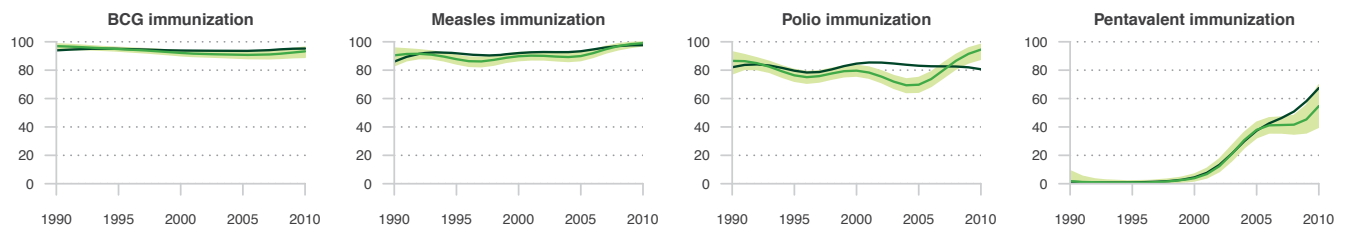
ITN use by children under 5 years old steadily increased to 45% in 2010 (95% CI: 40%, 52%), which was lower than then national average of 51%. The difference between ITN ownership and use (8 percentage points) was slightly lower in

Solwezi than what was observed at the national level (11 percentage points) for 2010.

Solwezi formally implemented IRS activities in 2006, and was one of the first 15 districts in Zambia to roll out IRS. Solwezi expanded coverage to 32% in 2008 (95% CI: 29%, 36%) and 36% in 2010 (95% CI: 31%, 42%).

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rapidly increased to 73% in 2007 (95% CI: 63%, 81%). IPTp2 coverage declined to 67% in 2010 (95% CI: 54%, 79%), which was comparable to the national average of 68%.

## IMMUNIZATIONS



BCG coverage declined from 97% in the early 1990s to 91% in 2002 (95% CI: 89%, 93%) and remained at this level through 2007. Coverage then increased to 93% in 2010 (95% CI: 89%, 96%), but remained below the national average of 95%.

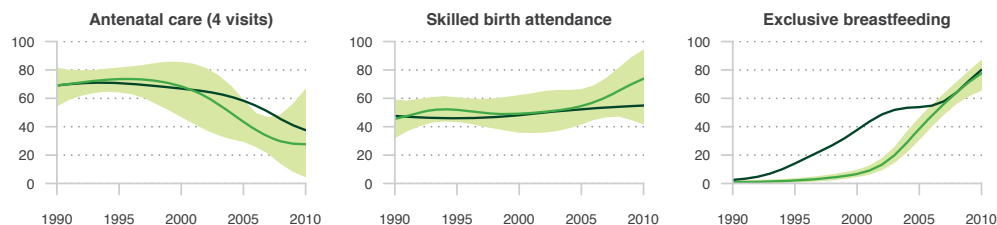
Measles immunization hovered around 90% until 2007, after which coverage increased to 99% in 2010 (95% CI: 97%, 100%), slightly exceeding the national average of 98%.

Coverage of polio immunization decreased from 87% in 1990 (95% CI: 78%, 93%) to 75% in 1996 (95% CI: 71%, 79%), but increased to 80% in 2000 (95% CI: 76%, 83%). Polio cov-

erage then briefly dropped to around 70% in the mid-2000s before steadily rising to 95% in 2010 (95% CI: 88%, 98%), one of the highest levels in Zambia that year.

After the pentavalent vaccine was formally introduced in Solwezi in 2005, coverage increased to 41% in 2006 (95% CI: 36%, 46%) and 55% in 2010 (95% CI: 40%, 70%), which was lower than the national average of 67% and among the lowest in Zambia. Solwezi's marginal scale-up of the pentavalent vaccine is cause for concern.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage remained between 69% and 74% in the 1990s, but fell to 28% in 2009 (95% CI: 9%, 56%) and remained at this level through 2010. ANC4 dramatically decreased throughout Zambia from 1990 to 2010, and the finding that Solwezi's levels of coverage fell 40 percentage points in 10 years is particularly worrisome.

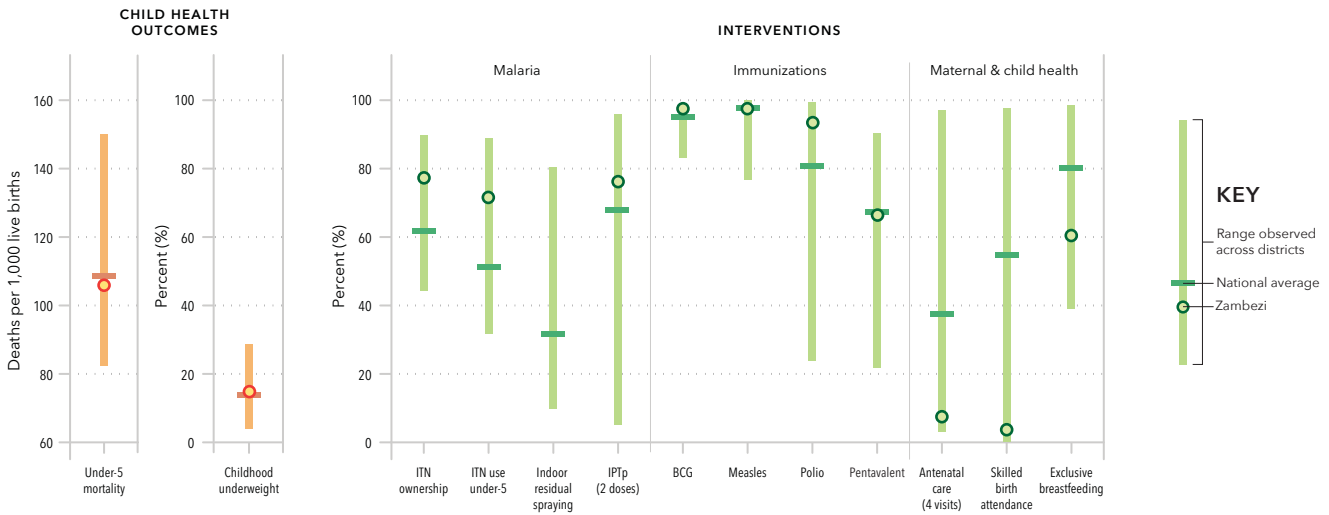
Skilled birth attendance hovered around 50% until 2004,

after which coverage increased to 74% in 2010 (95% CI: 42%, 94%). Solwezi's recent gains elevated its levels of SBA coverage above the national average of 55% for 2010.

The proportion of children who were exclusively breastfed remained below 20% until 2003, after which coverage rose to 78% in 2010 (95% CI: 66%, 86%) and nearly equaled the national average of 80%.



# Zambezi



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 Zambezi started IRS after 2010.

## SUMMARY

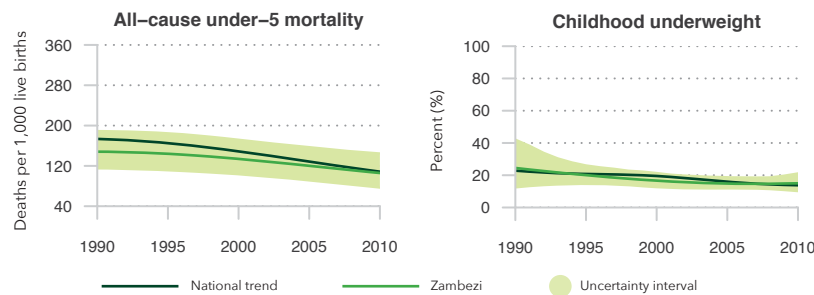
Zambezi reduced its all-cause under-5 mortality between 1990 and 2010, but the relative magnitude of the district's decline was low. While the proportion of children who were underweight also decreased from 1990 to 2010, Zambezi's levels of underweight remained unchanged from 2003 to 2010. Prioritizing efforts to accelerate gains for child health outcomes should be considered.

Zambezi sustained steady gains for malaria interventions, which contrasted with the stagnation or declines in coverage observed at the national level. In 2010, ITN use was among the highest in Zambia. High levels of BCG coverage were maintained, and polio immunization increased to among the highest levels in the country in 2010. The district was successful in increasing pentavalent coverage to the national average in 2010 after initially lagging behind national trends.

However, amidst these gains, several troubling trends were identified and warrant further attention. Gains in exclusive breastfeeding coverage stalled during the late 2000s. ANC4 coverage substantially declined to very low levels in 2010, and alarmingly, skilled birth attendance dropped from consistently high levels of coverage in the early 1990s to well below 10% coverage in 2010. For all three of these key maternal and child health interventions, Zambezi recorded some of the lowest levels of coverage in Zambia for 2010.

In 2010, Zambezi met or exceeded national levels for malaria interventions and immunizations, but fell well below for maternal and child health interventions. In comparison with the national average, Zambezi showed slightly lower levels of mortality and similar levels of underweight.

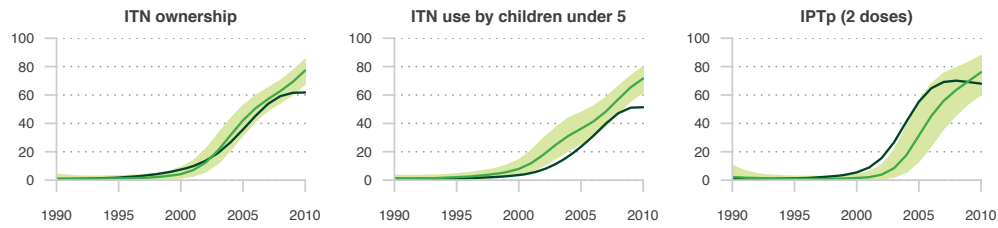
## CHILD HEALTH OUTCOMES



From 1990 to 2010, Zambezi recorded a reduction in all-cause under-5 mortality, dropping 29% from 148 deaths per 1,000 live births in 1990 (95% CI: 115, 189) to 106 in 2010 (95% CI: 77, 145); however, this decline was not statistically significant. 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).

The proportion of children who were underweight decreased from 24% in 1990 (95% CI: 12%, 42%) to 15% in 2003 (95% CI: 12%, 19%). This level of childhood underweight was maintained through 2010, which was comparable to the national average of 14% for 2010.

## MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2002, after which coverage quickly increased to 77% in 2010 (95% CI: 68%, 85%) and far exceeded the national average of 62%.

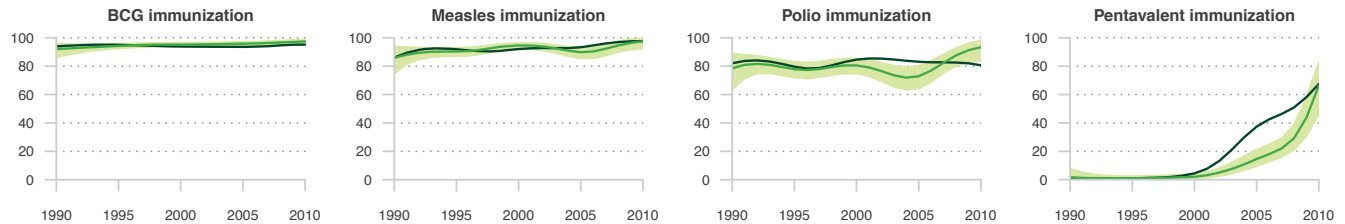
ITN use by children under 5 years old rapidly rose to 72% in 2010 (95% CI: 62%, 80%), which was among the highest levels in Zambia for that year. The difference between ITN ownership and ITN use was quite low in Zambezi in 2010, which suggests that net use by children under 5 may be high

among households that have ITNs.

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

The proportion of pregnant women who received IPTp2 remained below 10% until 2004, after which coverage rapidly rose to 76% in 2010 (95% CI: 60%, 88%). This level of IPTp2 coverage was higher than the national average of 68%.

## IMMUNIZATIONS



BCG coverage increased from 92% in 1990 (95% CI: 86%, 96%) to 97% in 2008 (95% CI: 95%, 98%). This level of coverage was maintained through 2010, and was higher than the national average of 95% for 2010.

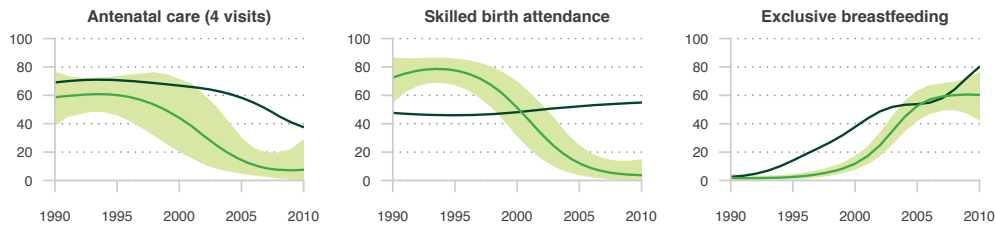
Aside from a small dip in coverage during the mid-2000s, measles immunization consistently increased from 86% in 1990 (95% CI: 75%, 94%) to 98% in 2010 (95% CI: 92%, 100%). This level of measles coverage equaled the national average for 2010.

Coverage of polio immunization largely hovered around 80% during the 1990s, after which coverage fell to 72% in

2004 (95% CI: 63%, 79%). Polio immunization then increased to 93% in 2010 (95% CI: 84%, 98%), which was among the highest levels of coverage in Zambia for that year. Zambezi is considered a high-risk district for polio importation from neighboring countries, so maintaining these high levels of polio immunization is important.

After the pentavalent vaccine was formally introduced in Zambezi in 2005, coverage increased to 18% in 2006 (95% CI: 13%, 25%) and 66% in 2010 (95% CI: 46%, 82%), essentially equaling the national average of 67%.

## MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage hovered around 60% until 1997, after which coverage dropped sharply to 8% in 2010 (95% CI: 1%, 28%), falling well below the national average of 37% and among the lowest in Zambia. The finding that Zambezi's levels of coverage fell over 50 percentage points between 1990 and 2010 is quite worrisome.

Skilled birth attendance increased to 78% in the mid-1990s, but then rapidly fell to 4% in 2009 (95% CI: 1% to 13%) and remained at 4% through 2010. This level of SBA coverage

was among the lowest in Zambia in 2010, which is alarming given that Zambezi consistently recorded higher levels of SBA than the national average throughout the 1990s.

The proportion of children who were exclusively breastfed remained below 20% until 2002, after which coverage increased to 59% in 2007 (95% CI: 50%, 68%). Gains in exclusive breastfeeding then stalled, with coverage only reaching 60% in 2010 (95% CI: 43%, 76%), which was among the lowest levels in Zambia for that year.