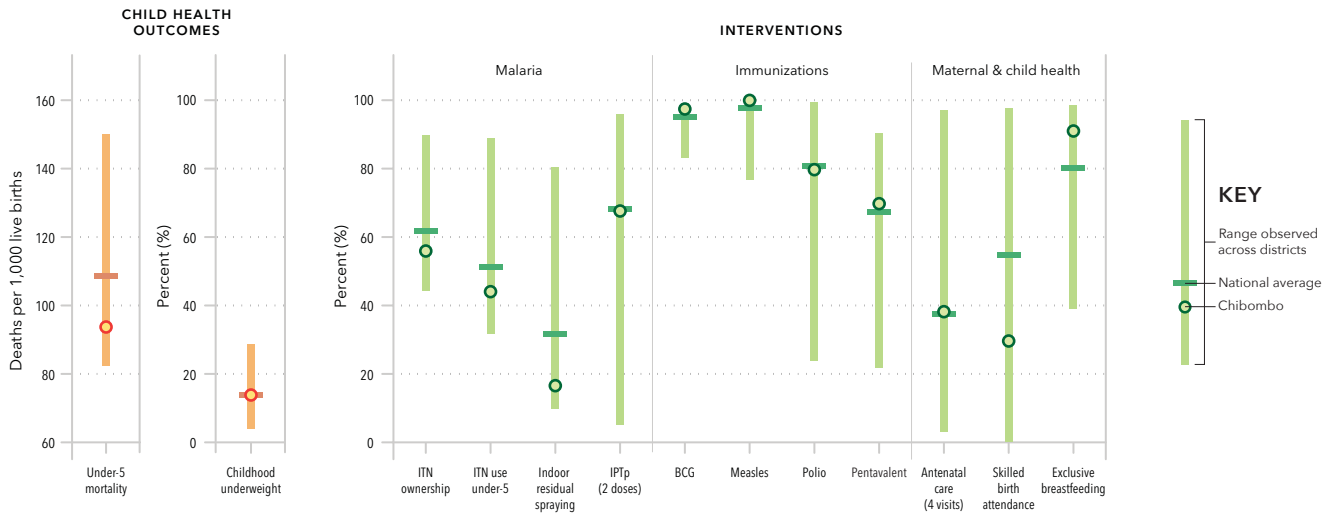


Central province



Chibombo



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

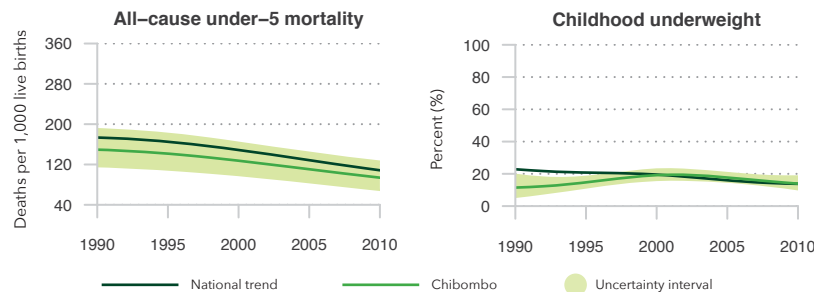
Chibombo substantially reduced all-cause under-5 mortality between 1990 and 2010, bringing its mortality levels among the lowest in Zambia. Childhood underweight, however, increased during the 1990s before declining. Prioritizing ways to further accelerate gains for child health outcomes, especially underweight, should be considered.

Several interventions, including IPTp2, the pentavalent vaccine, and exclusive breastfeeding, were scaled up to or above the national average by 2010. After slight dips in coverage, BCG and measles immunization rose above the national averages in 2010.

However, amidst these gains, some worrisome trends were identified and warrant further attention. Chibombo's scale-up of ITNs and IRS lagged behind the national trend, and polio coverage declined in recent years. Skilled birth attendance stayed quite low, and alarmingly, ANC4 dropped sharply from high levels of coverage in the early 1990s.

In 2010, Chibombo generally met or exceeded national levels for immunizations, and equaled or fell below for malaria interventions. For maternal and child health interventions, the district had a more mixed performance. In comparison with the national average, Chibombo showed much lower levels of mortality and similar levels of underweight.

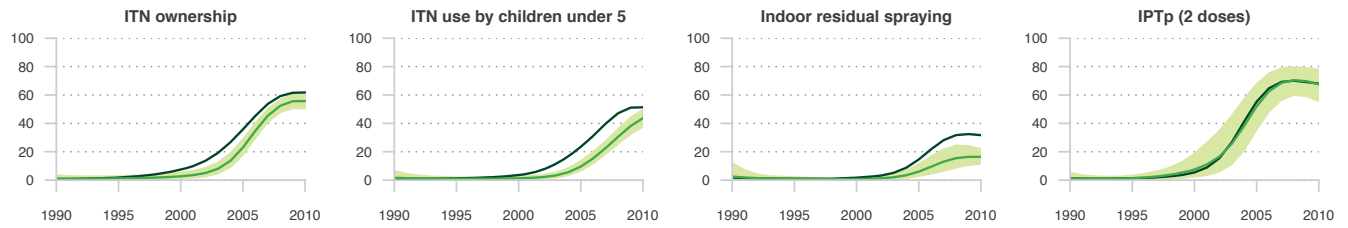
CHILD HEALTH OUTCOMES



From 1990 to 2010, Chibombo recorded a significant reduction in all-cause under-5 mortality, dropping 37% from 149 deaths per 1,000 live births in 1990 (95% CI: 116, 190) to 94 in 2010 (95% CI: 69, 126). 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 for that year.

The proportion of children who were underweight steadily increased from 11% in 1990 (95% CI: 6%, 19%) to 19% in the early 2000s. Levels of underweight remained at 19% through 2003, after which prevalence declined to 14% in 2010 (95% CI: 10%, 18%), equaling the national average for that year.

MALARIA INTERVENTIONS



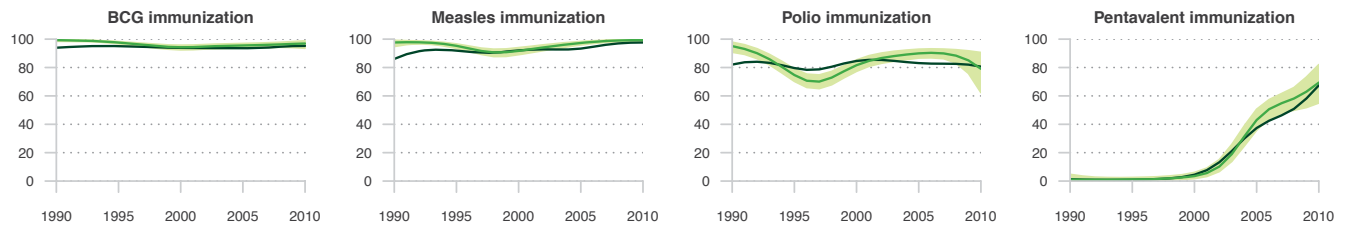
ITN ownership remained below 10% until 2004, after which coverage increased to 56% in 2009 (95% CI: 51%, 60%) and remained at 56% through 2010. This level of ITN ownership was lower than the national average of 62% for 2010.

ITN use by children under 5 years old rose to 44% in 2010 (95% CI: 38%, 50%), which was lower than the national average of 51%. The difference between ITN ownership and use (12 percentage points) in Chibombo was comparable to what was observed at the national level for 2010.

Chibombo formally implemented IRS activities in 2010, and reached 16% of households that year (95% CI: 11%, 22%). This was among the lowest levels of IRS coverage across the 54 districts that had IRS by 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, after which coverage rose to 70% in 2008 (95% CI: 60%, 80%). IPTp2 coverage slipped to 68% in 2010 (95% CI: 56%, 78%), equaling the national average for that year.

IMMUNIZATIONS



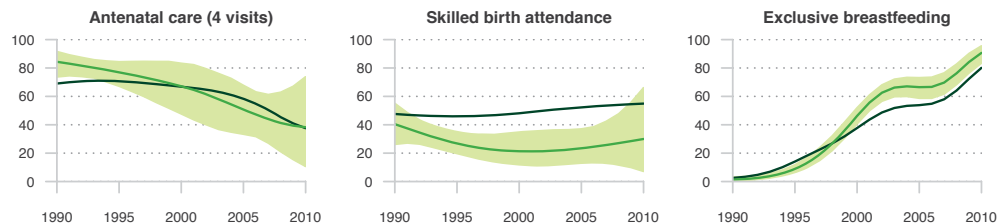
BCG coverage declined from 99% in the early 1990s to 94% in the early 2000s, but increased to 97% in 2009 (95% CI: 94%, 98%) and remained at 97% through 2010. This level of BCG coverage was higher than the national average of 95% for 2010.

Measles immunization decreased from 98% in the early 1990s to 91% in the late 1990s, after which coverage climbed to 99% in 2007 (95% CI: 98%, 99%) and remained at 99% through 2010. This level of measles coverage was slightly higher than the national average of 98% for 2010.

Coverage of polio immunization dropped from 95% in 1990 (95% CI: 91%, 98%) to 70% in 1997 (95% CI: 65%, 75%), but then rose to 90% in the mid-2000s. Polio coverage declined soon after, decreasing to 79% in 2010 (95% CI: 62%, 91%), slightly below the national average of 81%.

After the pentavalent vaccine was formally introduced in Chibombo in 2005, coverage increased to 51% in 2006 (95% CI: 44%, 57%) and 69% in 2010 (95% CI: 55%, 82%), slightly exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS

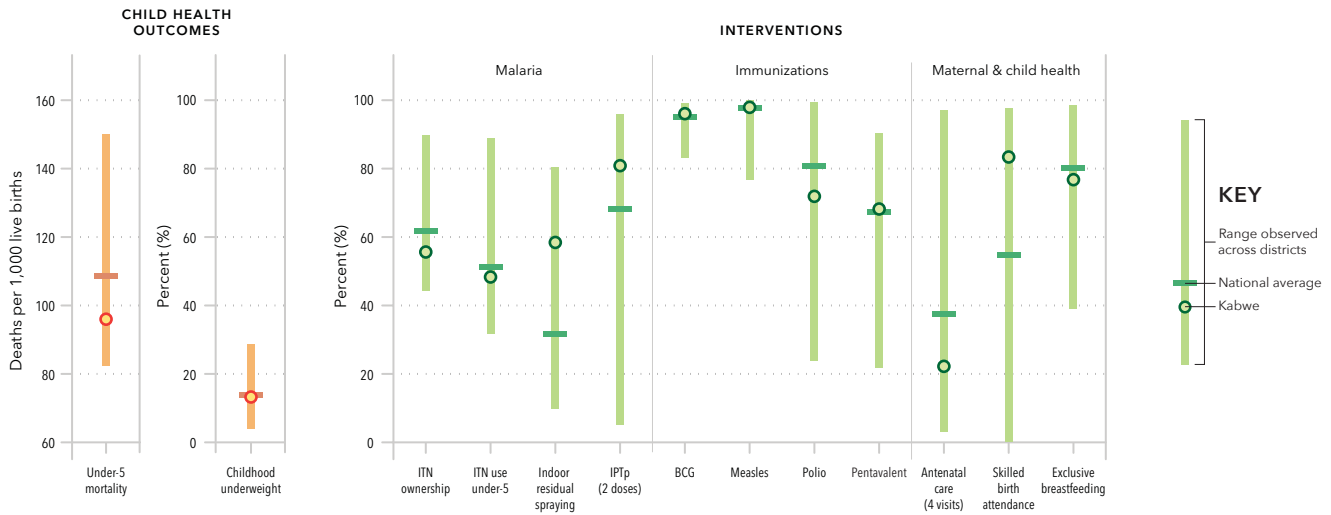


ANC4 coverage steadily fell from 84% in 1990 (95% CI: 74%, 92%) to 38% in 2010 (95% CI: 11%, 74%), which was comparable to the national average of 37% that year. The finding that Chibombo's levels of coverage fell more than 45 percentage points during this time is cause for concern.

Skilled birth attendance decreased from 40% in 1990 (95% CI: 26%, 55%) to 21% in the early 2000s, after which coverage slowly rose to 30% in 2010 (95% CI: 7%, 66%). This level of SBA coverage was below the national average of 55% for

2010, and Chibombo generally had lower SBA coverage than the national average from 1990 to 2010.

The proportion of children who were exclusively breastfed remained below 20% until 1998, after which coverage climbed to 67% in 2004 (95% CI: 60%, 73%). Gains in coverage stalled until 2008, after which exclusive breastfeeding increased to 91% in 2010 (95% CI: 83%, 96%), far exceeding the national average of 80%.



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, Kabwe reduced its all-cause under-5 mortality, but the relative magnitude of the district's progress was fairly low. While childhood underweight was comparable to the national average, Kabwe made minimal progress in reducing prevalence. Prioritizing ways to further accelerate gains for child health outcomes should be considered.

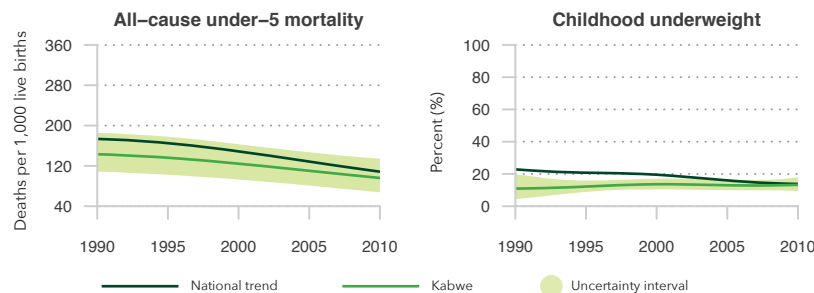
Kabwe increased IPTp2 coverage to well above the national average in 2010, and IRS coverage was among the highest in Zambia that year. The district made notable progress in increasing coverage of the pentavalent vaccine, and high levels of BCG and measles immunization were sustained during the 2000s. Exclusive breastfeeding rebounded from declines in coverage during the early 2000s. Skilled birth at-

tendance steadily increased over time, reaching some of the highest levels of coverage in the country.

However, amidst these gains, some troubling trends were identified and warrant further attention. Polio coverage declined in recent years, and alarmingly, ANC4 coverage decreased sharply from very high levels during the 1990s.

In 2010, Kabwe generally met or exceeded national levels across interventions, with the stark exception of ANC4 coverage. In comparison with the national average, Kabwe showed lower levels of mortality and similar levels of underweight.

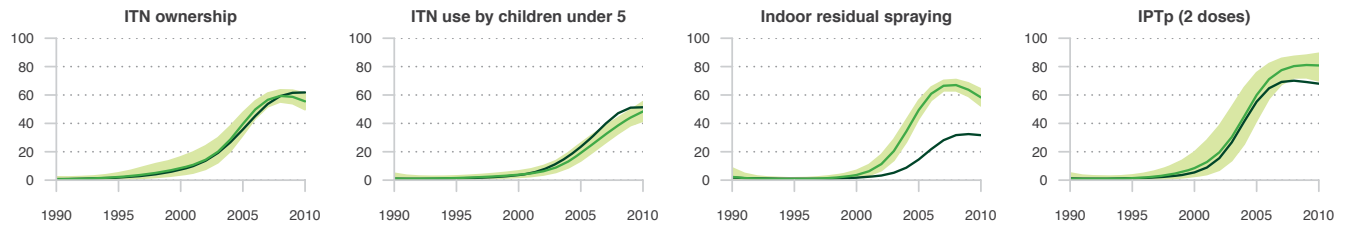
CHILD HEALTH OUTCOMES



From 1990 to 2010, Kabwe recorded a reduction in all-cause under-5 mortality, dropping 33% from 143 deaths per 1,000 live births in 1990 (95% CI: 111, 184) to 96 in 2010 (95% CI: 69, 132); however, this decline was not statistically significant. In 2010, the district's under-5 mortality was lower than the national average of 109 deaths per 1,000 live births (95% CI: 10, 116).

The proportion of children who were underweight increased from 11% in the early 1990s to 14% in the early 2000s, after which underweight slightly declined to 13% in 2003 (95% CI: 11%, 16%) and remained at this level through 2010. Although childhood underweight was comparable to the national average of 14% for 2010, the district's minimal progress is cause for concern.

MALARIA INTERVENTIONS



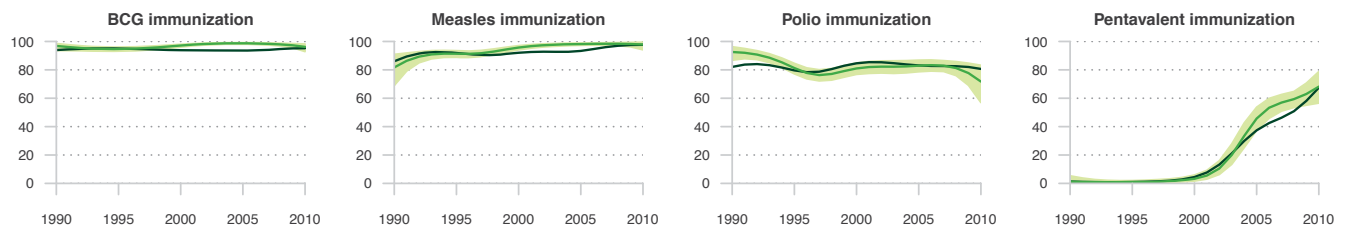
ITN ownership remained below 10% until 2001, after which coverage increased to 59% in 2008 (95% CI: 55%, 64%) but slipped to 56% in 2010 (95% CI: 50%, 61%). This level of ITN ownership was lower than the national average of 62% in 2010.

ITN use by children under 5 years old climbed to 48% in 2010 (95% CI: 42%, 55%), but remained slightly lower than the national average of 51% for that year. The difference between ITN ownership and use (8 percentage points) was slightly lower in Kabwe than what was observed at the national level (11 percentage points) for 2010.

Kabwe formally implemented IRS activities in 2003, and was one of the first 15 districts in Zambia to roll out IRS. IRS coverage peaked at 67% in 2008 (95% CI: 63%, 71%), after which coverage dropped to 58% in 2010 (95% CI: 52%, 64%). Nonetheless, Kabwe had one of the highest levels of IRS in Zambia in 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, after which coverage rapidly rose to 2009 at 81% (95% CI: 72%, 88%) and was maintained through 2010. This level of IPTp2 coverage was much higher than the national average of 68% for 2010.

IMMUNIZATIONS



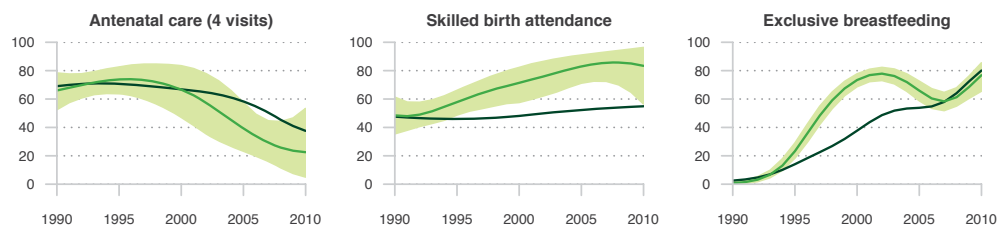
BCG coverage declined from 97% in 1990 (95% CI: 94%, 99%) to 95% in the early to mid-1990s, but increased to 99% in the mid-2000s. Coverage slipped to 96% in 2010 (95% CI: 93%, 98%), but remained slightly higher than the national average of 95%.

Measles immunization increased from 82% in 1990 (95% CI: 69%, 91%) to 98% in 2003 (95% CI: 97%, 99%), after which coverage was sustained at 98% through 2010, equaling the national average.

Coverage of polio immunization sharply declined from 93% in 1990 (95% CI: 87%, 96%) to 76% in 1997 (95% CI: 72%, 80%). Polio coverage hovered just above 80% from 2000 to 2008, after which immunization rates dropped to 72% in 2010 (95% CI: 57%, 83%), falling below the national average of 81%.

After the pentavalent vaccine was formally introduced in Kabwe in 2005, coverage increased to 53% in 2006 (95% CI: 46%, 60%) and 68% in 2010 (95% CI: 57%, 79%), which was comparable to the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 66% in 1990 (95% CI: 53%, 78%) to 74% in the mid-1990s, but dropped considerably to 23% in 2010 (95% CI: 5%, 53%), falling below the national average of 37%. The finding that Kabwe's levels of coverage fell 50 percentage points since the mid-1990s is worrisome.

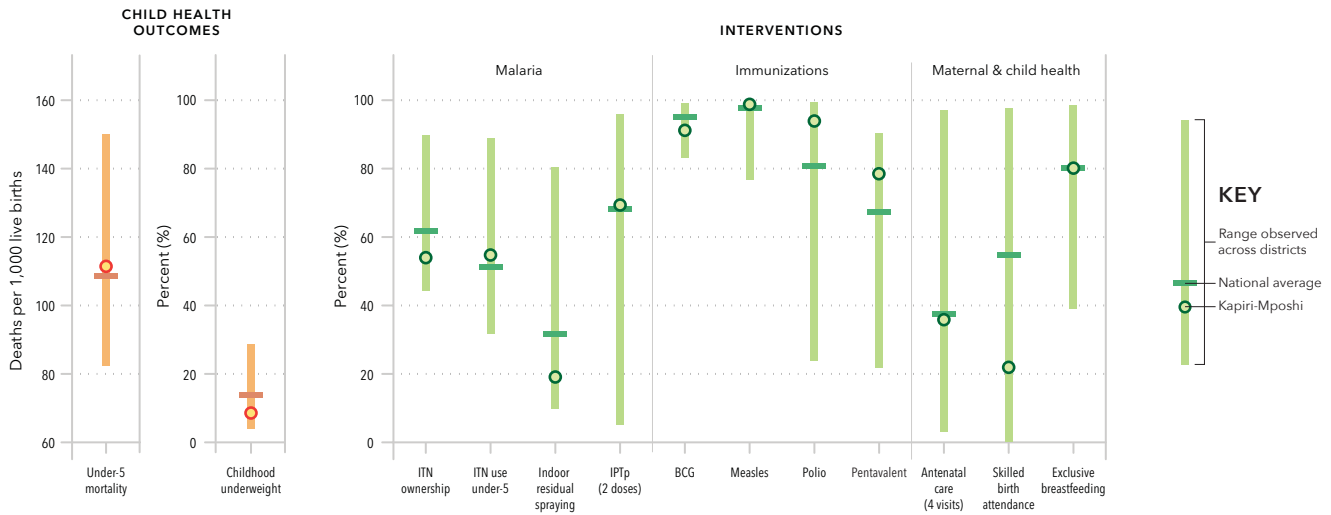
Skilled birth attendance steadily increased from 48% in 1990 (95% CI: 36%, 61%) to 86% in 2007 and 2008, after which coverage slipped to 83% in 2010 (95% CI: 57%, 96%). Despite

this decline, Kabwe's SBA coverage was among the highest in Zambia in 2010.

The proportion of children who were exclusively breastfed remained below 20% until 1995, after which coverage rapidly climbed to 78% in 2002 (95% CI: 73%, 82%). Exclusive breastfeeding then declined, dropping to 60% in 2006 (95% CI: 53%, 67%). Coverage rebounded to 77% in 2010 (95% CI: 66%, 85%), but remained slightly lower than the national average of 80%.



Kapiri-Mposhi



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

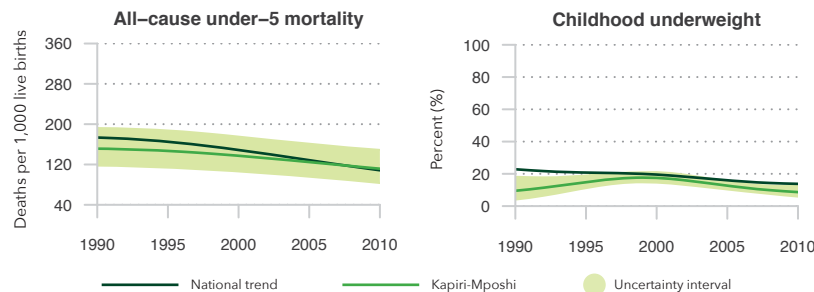
Kapiri-Mposhi reduced its all-cause under-5 mortality between 1990 and 2010, but the relative magnitude of the district's progress was low. After a period of increasing levels of underweight, the district reduced its prevalence to some of the lowest levels in Zambia. Prioritizing ways to further accelerate declines in child health outcomes, especially for under-5 mortality, should be considered.

The district successfully scaled up several interventions, ranging from IPTp2 to the pentavalent vaccine, to coverage levels equaling or exceeding the national average in 2010. High levels of measles coverage were maintained after increases in the 1990s, and polio coverage rose to among the highest in Zambia in 2010.

However, amidst these successes, some troubling trends were identified and warrant further attention. BCG coverage fell below the national average in 2010, and ITN ownership was among the lowest levels in Zambia. The district experienced substantial declines in ANC4 coverage and skilled birth attendance.

In 2010, Kapiri-Mposhi generally met or exceeded national levels for immunizations, and equaled or fell below national levels for maternal and child health interventions. For malaria interventions, the district had a more mixed performance. In comparison with the national average, Kapiri-Mposhi showed slightly higher levels of mortality and much lower levels of underweight.

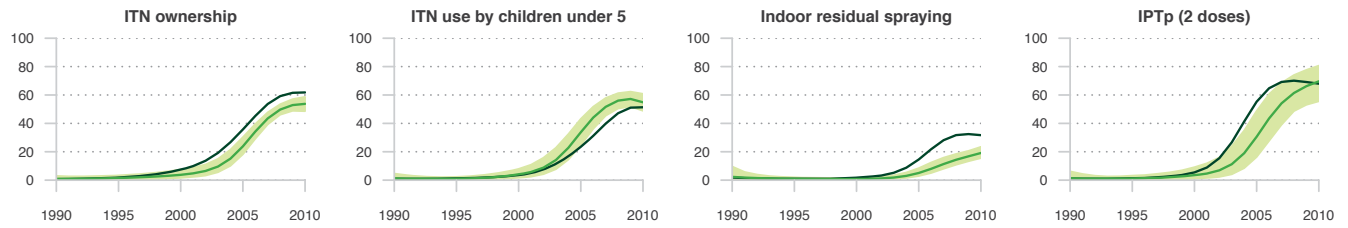
CHILD HEALTH OUTCOMES



From 1990 to 2010, Kapiri-Mposhi recorded a reduction in all-cause under-5 mortality, dropping 26% from 151 deaths per 1,000 live births in 1990 (95% CI: 118, 193) to 112 in 2010 (95% CI: 83, 149); however, this decline was not statistically significant. In 2010, the district's under-5 mortality was 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 increased from 9% in 1990 (95% CI: 4%, 18%) to a high of 18% in 1999 (95% CI: 15%, 21%), but then declined to 9% in 2009 (95% CI: 7%, 12%) and remained at 9% through 2010. This level of underweight was much lower than the national average of 14% in 2010 and among the lowest in Zambia.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2003, after which coverage increased to 54% in 2010 (95% CI: 49%, 59%), falling well below the national average of 62% and among the lowest in Zambia that year.

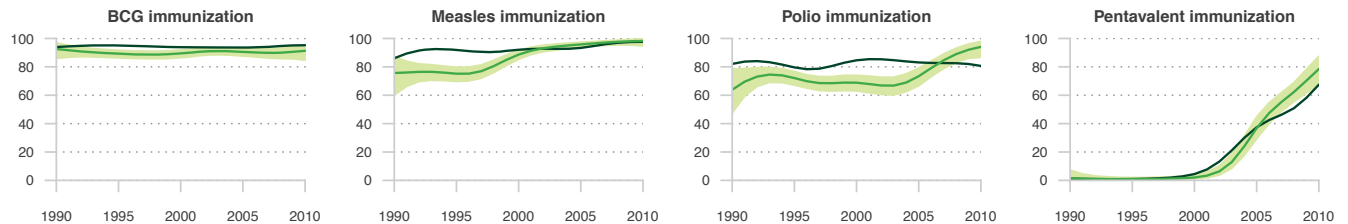
ITN use by children under 5 years old climbed to 57% in 2009 (95% CI: 52%, 62%), but slipped to 55% in 2010 (95% CI: 49%, 61%). This level of ITN use was slightly higher than the national average of 51% for 2010. ITN use was slightly higher than ITN ownership in Kapiri-Mposhi for 2010, which suggests that net use by children under 5 may be high among house-

holds that have ITNs.

Kapiri-Mposhi formally implemented IRS activities in 2008 and reached 19% of households in 2010 (95% CI: 16%, 23%). This scale-up of IRS was among the lowest among the other districts that also began IRS in 2008.

The proportion of pregnant women who received IPTp2 remained below 10% until 2003, after which coverage rapidly increased to 70% in 2010 (95% CI: 56%, 81%), slightly exceeding the national average of 68%.

IMMUNIZATIONS



BCG coverage declined from 93% in 1990 (95% CI: 86%, 97%) to 89% during the mid- to late 1990s. Coverage hovered around 90% in the 2000s, rising to 91% in 2010 (95% CI: 85%, 95%), which was lower than the national average of 95%.

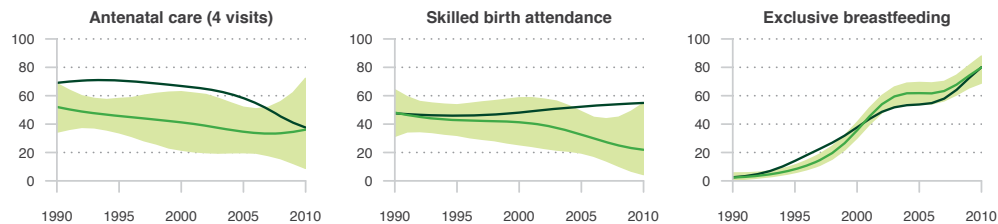
Measles immunization remained below 80% until 1998, after which coverage steadily climbed to 98% in 2008 (95% CI: 95%, 99%) and remained at this level through 2010, equaling the national average for that year.

Rising from a low of 64% in 1990 (95% CI: 48%, 79%), coverage of polio immunization largely hovered around 70%

until 2006, after which polio coverage climbed to 94% in 2010 (95% CI: 87%, 98%) and emerged as one of the highest levels in Zambia for that year. These gains are particularly notable given that the district's polio coverage was consistently lower than the national average until the mid-2000s.

After the pentavalent vaccine was formally introduced in Kapiri-Mposhi in 2005, coverage increased to 47% in 2006 (95% CI: 40%, 55%) and 78% in 2010 (95% CI: 68%, 88%), far exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage gradually declined from 52% in 1990 (95% CI: 34%, 68%) to 36% in 2010 (95% CI: 9%, 72%). While the district's ANC4 coverage was comparable to the national average of 37% in 2010, its levels of ANC4 remained quite low.

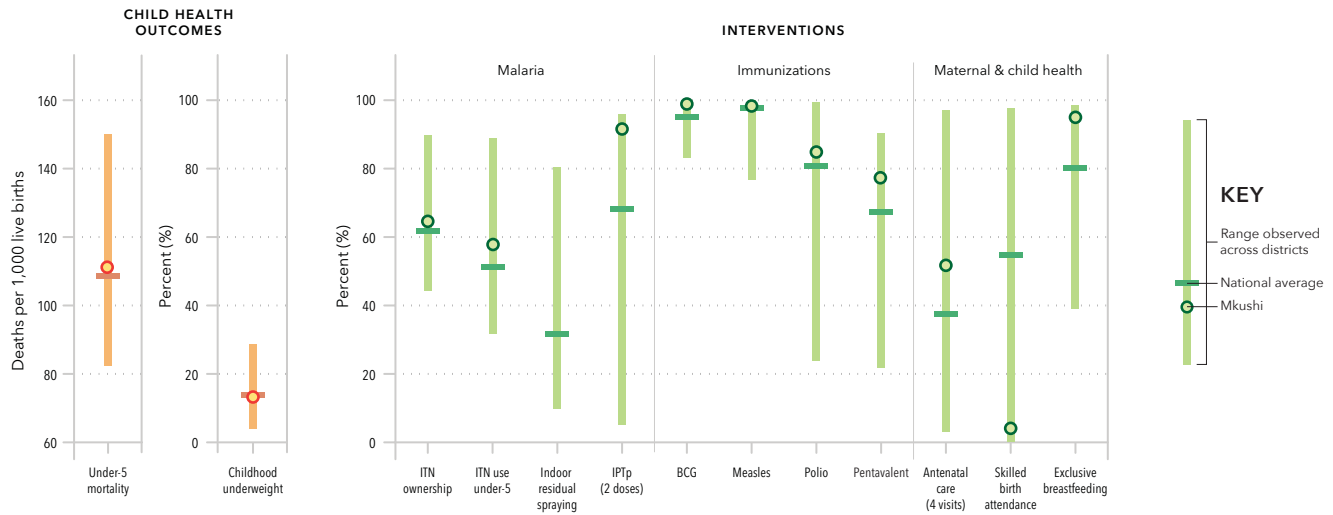
Skilled birth attendance decreased from 48% in 1990 (95% CI: 31%, 64%) to a low of 22% in 2010 (95% CI: 5%, 55%), falling below the national average of 55%. This trend of steady decline is cause for concern, directly contrasting with gradual

increases in SBA coverage observed at the national level.

The proportion of children who were exclusively breastfed remained below 20% until 1998, after which coverage rapidly increased to 62% in 2004 (95% CI: 55%, 69%). Gains in coverage stalled through 2007, but exclusive breastfeeding climbed to 80% in 2010 (95% CI: 69%, 88%), equaling the national average.



Mkushi



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 Mkushi started IRS after 2010.

SUMMARY

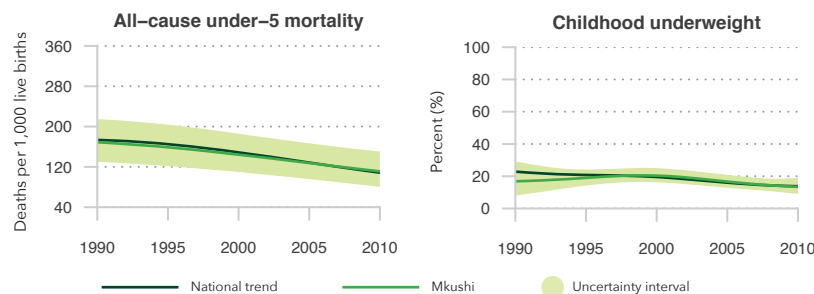
Mkushi substantially reduced all-cause under-5 mortality from 1990 to 2010. Childhood underweight increased during the 1990s before decreasing in recent years. Prioritizing ways to further accelerate rates of progress in child health outcomes should be considered.

IPTp2 coverage reached some of the highest levels in Zambia in 2010, and ITN coverage consistently exceeded the national average. Pentavalent coverage was higher than the national average in 2010, and exclusive breastfeeding climbed to some of the highest levels in the country. BCG and measles coverage remained high during the 2000s, and polio coverage was comparable to the national average in 2010.

However, amidst these gains, some worrisome trends were identified and warrant further attention. ANC4 coverage declined after a period of steady gains during the 1990s. Skilled birth attendance gradually increased in the 1990s, but sharply dropped to very low levels in 2010. SBA coverage in Mkushi was among the lowest in Zambia for 2010.

In 2010, Mkushi generally met or exceeded national levels across interventions, with the clear exception of skilled birth attendance. In comparison with the national average, Mkushi showed similar levels of mortality and underweight.

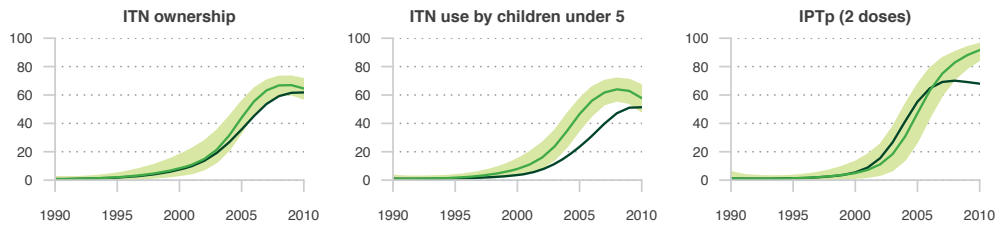
CHILD HEALTH OUTCOMES



From 1990 to 2010, Mkushi recorded a significant reduction in all-cause under-5 mortality, dropping 34% from 169 deaths per 1,000 live births in 1990 (95% CI: 132, 213) to 111 in 2010 (95% CI: 82, 149). 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).

The proportion of children who were underweight increased from 17% in the early 1990s to a high of 21% in 1999 (95% CI: 17%, 25%), but then decreased to 13% in 2010 (95% CI: 10%, 18%). This level of underweight was comparable to the national average of 14% in 2010.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2001, after which ITN ownership rapidly increased to 67% in 2008 (95% CI: 60%, 73%). Ownership slipped to 65% in 2010 (95% CI: 57%, 71%), remaining slightly above the national average of 62%.

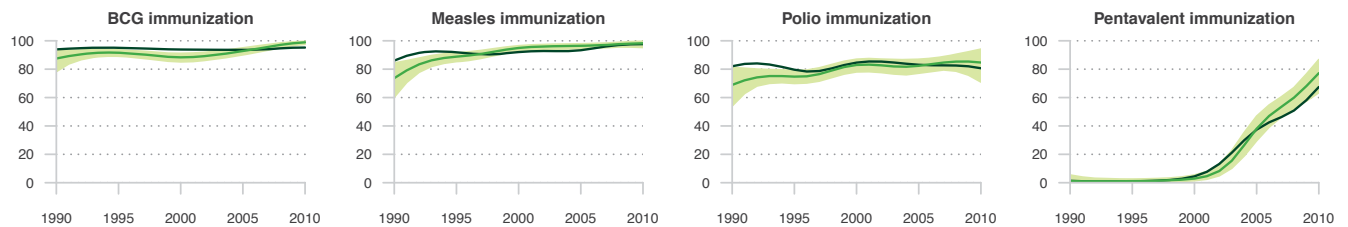
ITN use by children under 5 years old quickly rose to 64% in 2008 (95% CI: 56%, 72%), but declined to 58% in 2010 (95% CI: 48%, 67%). This level of ITN use remained higher than the national average of 51% for 2010. The difference between ITN ownership and use (7 percentage points) was lower in Mkushi

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

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

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rapidly climbed to 92% in 2010 (95% CI: 85%, 96%), far exceeding the national average of 68% and rising to among the highest levels in Zambia.

IMMUNIZATIONS



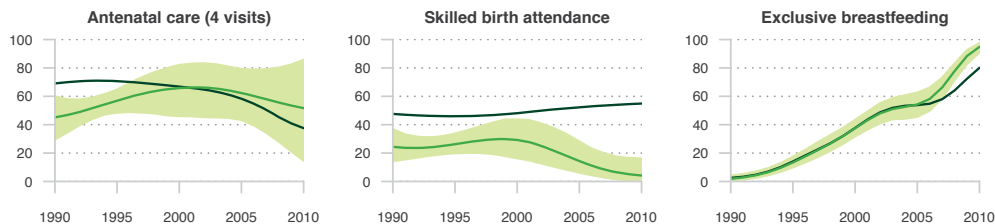
BCG coverage hovered around 90% until the mid-2000s, after which coverage climbed to 99% in 2010 (95% CI: 98%, 100%), which was among the highest levels of BCG coverage in Zambia for that year.

Measles immunization steadily increased from 74% in 1990 (95% CI: 60%, 84%) to 98% in 2008 (95% CI: 96%, 99%). This level of coverage was maintained through 2010, equaling the national average.

Coverage of polio immunization gradually rose from 69% in 1990 (95% CI: 54%, 81%) to 85% in 2007 (95% CI: 79%, 89%), which was maintained through 2010. This level of polio coverage was slightly higher than the national average of 81% for 2010.

After the pentavalent vaccine was formally introduced in Mkushi in 2005, coverage increased to 47% in 2006 (95% CI: 39%, 55%) and 77% in 2010 (95% CI: 63%, 87%), rising above the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage gradually increased from 45% in 1990 (95% CI: 29%, 60%) to 66% in the early 2000s, but then declined to 52% in 2010 (95% CI: 14%, 86%). While ANC4 coverage in Mkushi stayed above the national average of 37% in 2010, its levels remained lower than optimal.

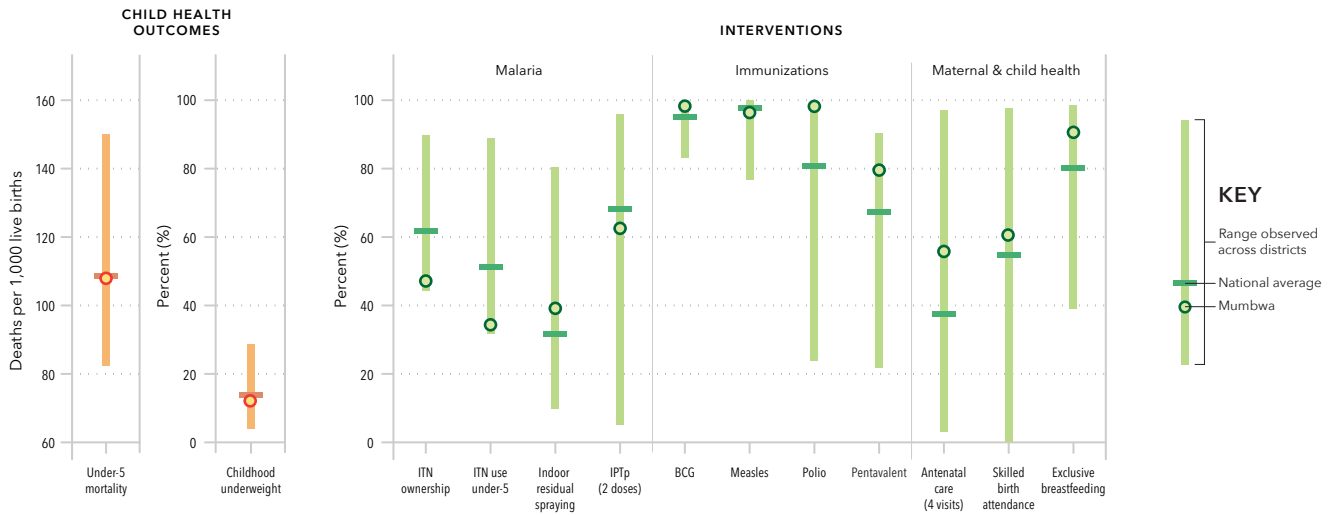
Skilled birth attendance slightly increased from 24% in the early 1990s to 30% in the late 1990s, but then dropped sharply to 4% in 2010 (95% CI: 0%, 16%), falling well below

the national average of 55% and among the lowest in Zambia for 2010. Mkushi's consistently low level of SBA coverage, paired with its recent decline, is cause for concern.

The proportion of children who were exclusively breastfed remained below 20% until 1997, after which coverage rapidly increased to 95% in 2010 (95% CI: 91%, 98%), rising among the highest levels in Zambia for that year.



Mumbwa



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

Mumbwa reduced all-cause under-5 mortality and childhood underweight from 1990 to 2010, but the relative magnitude of the district's progress was fairly low. Prioritizing ways to accelerate gains for child health outcomes should be considered.

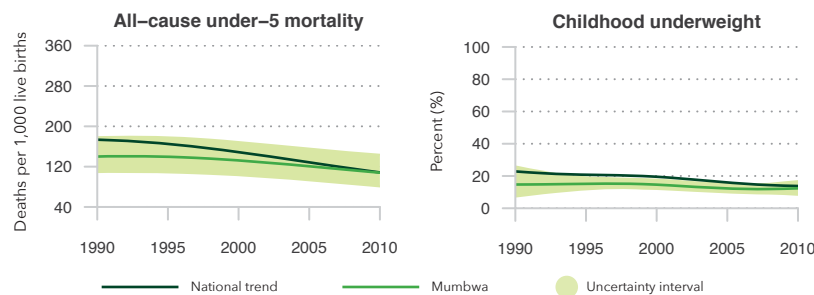
The district rapidly scaled up coverage of the pentavalent vaccine and exclusive breastfeeding, exceeding the national average for each in 2010. Mumbwa recorded some of the highest levels of polio coverage in the country, and experienced gradual gains in skilled birth attendance.

However, amidst these gains, some troubling trends were identified and warrant further attention. Mumbwa saw small declines in measles coverage in the late 2000s. While the dis-

trict was able to quickly scale up coverage of ITNs and IPTp2, coverage largely fell below the national average in 2010. Further, ITN ownership and use dropped to among the lowest levels in Zambia in 2010. Like in many districts, ANC4 coverage decreased after a period of increasing levels during the 1990s.

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

CHILD HEALTH OUTCOMES

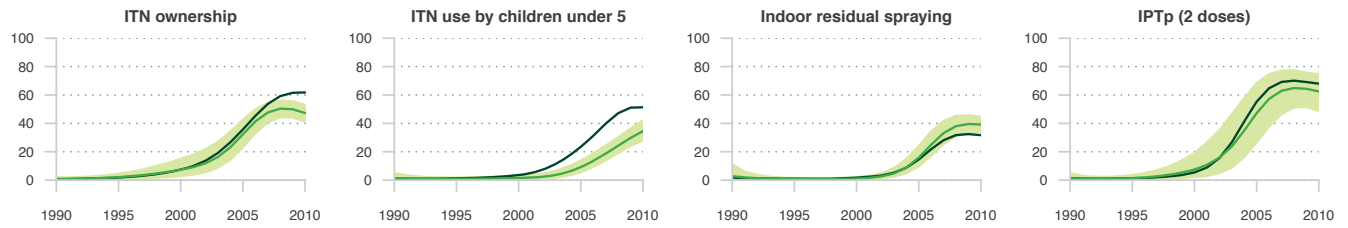


From 1990 to 2010, Mumbwa recorded a reduction in all-cause under-5 mortality, dropping 23% from 140 deaths per 1,000 live births in 1990 (95% CI: 109, 178) to 108 in 2010 (95% CI: 81, 144); however, this decline was not statistically significant. In 2010, the district's under-5 mortality was comparable to the national average of 109 deaths per 1,000 live births (95% CI: 104, 116). It is important to note that before

2000, the under-5 mortality in Mumbwa was generally lower than the national trend.

The proportion of children who were underweight gradually decreased from 15% in the 1990s to 12% in 2005 (95% CI: 10%, 15%). Underweight remained at 12% through 2010, which was slightly lower than the national average of 14% for that year.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2002, after which coverage quickly increased to 50% in 2008 (95% CI: 44%, 56%). Ownership slipped to 47% in 2010 (95% CI: 41%, 53%), falling well below the national average of 62% and among the lowest levels in Zambia.

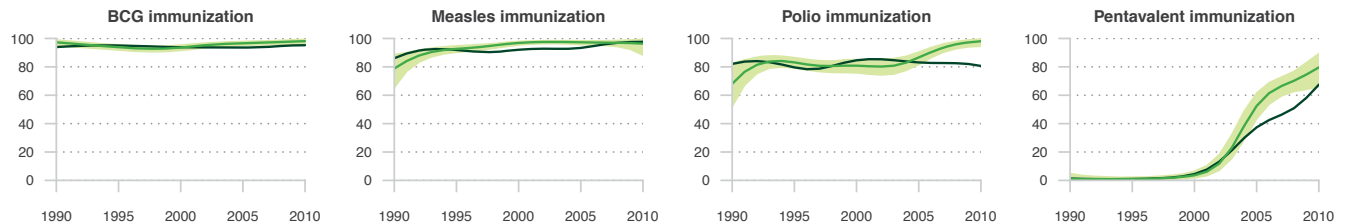
ITN use by children under 5 years old steadily rose to 35% in 2010 (95% CI: 28%, 42%), but this level of ITN use remained well below the national average of 51% and was among the lowest in the country. The difference between ITN ownership and use (12 percentage points) in Mumbwa was comparable

to what was observed at the national level for 2010.

Mumbwa formally implemented IRS activities in 2008, and reached 39% of households in 2010 (95% CI: 34%, 45%). This scale-up of IRS 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, after which coverage rapidly rose to 65% in 2008 (95% CI: 51%, 78%). IPTp2 coverage slipped to 62% in 2010 (95% CI: 49%, 75%), which was lower than the national average of 68%.

IMMUNIZATIONS



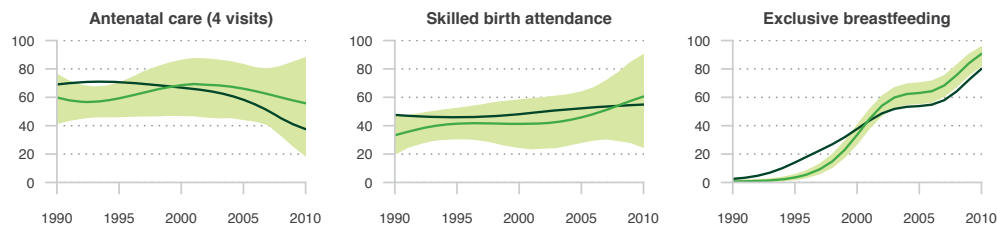
BCG coverage decreased from 97% in the early 1990s to 93% in the late 1990s, but increased to 98% in 2009 (95% CI: 96%, 99%) and remained at 98% through 2010. This level of BCG immunization exceeded the national average of 95% for 2010.

Measles immunization increased from a low of 79% in 1990 (95% CI: 65%, 89%) to 98% in 2002 (95% CI: 96%, 98%). Coverage remained at 98% through 2003, but decreased to 96% in 2010 (95% CI: 88%, 99%), falling slightly below the national average of 98%.

Coverage of polio immunization climbed from 68% in 1990 (95% CI: 52%, 82%) to 84% in the mid-1990s. Polio coverage hovered around 80% until 2004, after which coverage steadily increased to 98% in 2010 (95% CI: 95%, 100%), rising to among the highest in Zambia for that year.

After the pentavalent vaccine was formally introduced in Mumbwa in 2005, coverage increased to 61% in 2006 (95% CI: 54%, 69%) and 80% in 2010 (95% CI: 66%, 89%), exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage hovered around 60% during the early to mid-1990s and then increased to 69% in the early 2000s. ANC4 then decreased to 56% in 2010 (95% CI: 19%, 88%). While this level of ANC4 coverage was still higher than the national average of 37% for 2010, it remained lower than optimal.

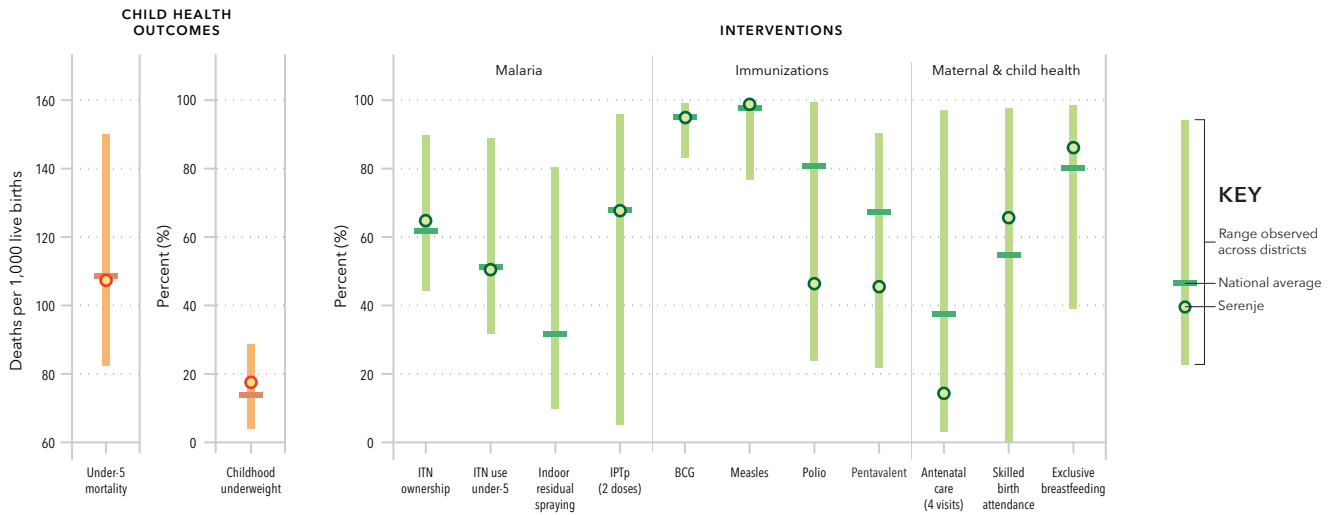
Skilled birth attendance gradually climbed from 33% in 1990 (95% CI: 20%, 47%) to 61% in 2010 (95% CI: 25%, 90%),

which was slightly higher than the national average of 55% for that year.

The proportion of children who were exclusively breastfed remained below 20% until 1999, after which coverage rose to 60% in 2003 (95% CI: 53%, 67%). Gains in coverage slowed until 2007 and then quickly climbed to 91% in 2010 (95% CI: 82%, 95%), far exceeding the national average of 80%.



Serenje



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 Serenje started IRS after 2010.

SUMMARY

Serenje recorded substantial reductions in all-cause under-5 mortality and childhood underweight from 1990 to 2010, but its levels of underweight remained higher than the national average in 2010. Prioritizing ways to accelerate gains for child health outcomes should be considered.

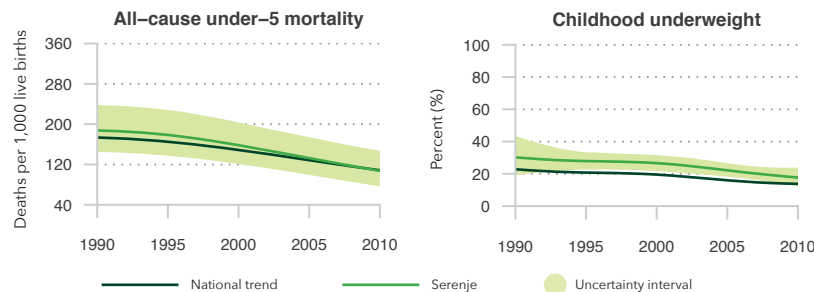
Malaria intervention coverage quickly increased in Serenje and was sustained through 2010. Serenje expanded coverage of BCG and measles immunization after declines in the early to mid-2000s, and the district saw substantial gains in skilled birth attendance after years of extremely low coverage. Exclusive breastfeeding also was higher than the national average in 2010.

At the same time, Serenje marginally scaled up the pen-

ta-valent vaccine, and polio coverage steeply fell in recent years. In 2010, the district recorded some of the lowest levels of coverage in Zambia for these two immunizations. ANC4 coverage dramatically decreased to among the lowest levels in the country. With its low levels of ANC4 in particular, Serenje will likely benefit from targeting these interventions for improvement.

In 2010, Serenje generally equaled or exceeded the national levels for malaria interventions and maternal and child health interventions (excluding ANC4). Serenje's performance across immunizations was more varied. In comparison with the national average, Serenje showed similar levels of mortality and higher levels of underweight.

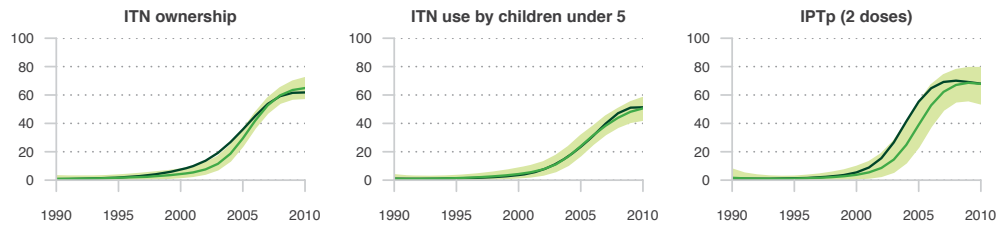
CHILD HEALTH OUTCOMES



From 1990 to 2010, Serenje recorded a significant reduction in all-cause under-5 mortality, dropping 43% from 188 deaths per 1,000 live births in 1990 (95% CI: 147, 236) to 107 in 2010 (95% CI: 78, 145). 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).

The proportion of children who were underweight steadily declined from 30% in 1990 (95% CI: 20%, 43%) to 18% in 2009 (95% CI: 14%, 23%), which was maintained through 2010. Despite this progress, Serenje's prevalence of childhood underweight remained higher than the national average of 14% for 2010.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2003, after which coverage rapidly rose to 65% in 2010 (95% CI: 58%, 72%), slightly exceeding the national average of 62%.

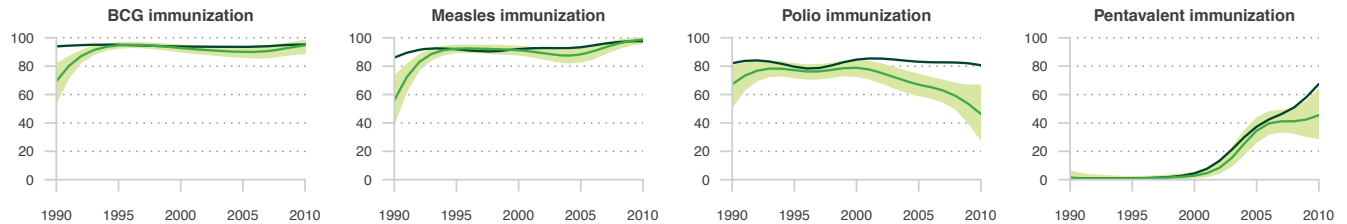
ITN use by children under 5 years old quickly increased to 51% in 2010 (95% CI: 42%, 58%), equaling the national average for that year. The difference between ITN ownership and use (14 percentage points) was slightly higher in Serenje than what was observed at the national level (11 percentage

points) for 2010.

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

The proportion of pregnant women who received IPTp2 remained below 10% until 2003, after which coverage rapidly rose to 69% in 2009 (95% CI: 56%, 79%). IPTp2 coverage slipped to 68% in 2010 (95% CI: 54%, 79%), equaling the national average for 2010.

IMMUNIZATIONS



BCG coverage increased from 69% in 1990 (95% CI: 54%, 81%) to 95% in the mid-1990s, but fell to 90% during the mid-2000s. Coverage rebounded to 95% in 2010 (95% CI: 89%, 98%), equaling the national average for that year.

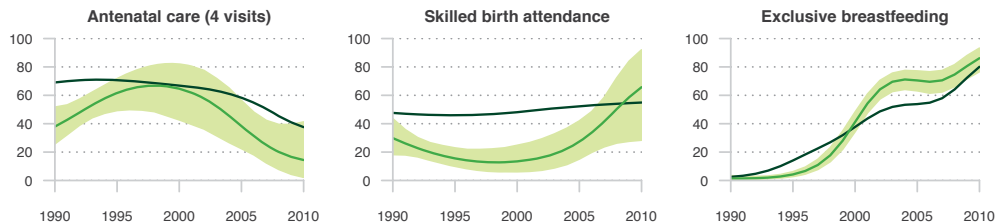
Measles immunization quickly rose from 56% in 1990 (95% CI: 40%, 73%) to 92% during the mid- to late 1990s. Measles coverage dipped below 90% during the mid-2000s before steadily rising to 99% in 2010 (95% CI: 96%, 100%), slightly exceeding the national average of 98% for that year.

After rising from 67% in 1990 (95% CI: 51%, 80%), coverage of polio immunization hovered around 77% until rising

to 79% in the late 1990s. Polio coverage then steadily declined, dropping to 46% in 2010 (95% CI: 28%, 66%) and falling well below the national average of 81%. This level of polio coverage was among the lowest in Zambia for 2010.

After the pentavalent vaccine was formally introduced in Serenje in 2005, coverage hovered around 40% through 2009, rising slightly to 45% in 2010 (95% CI: 29%, 63%). Serenje's level of pentavalent coverage was well below the national average of 67% for 2010, and was among the lowest in Zambia. The district's minimal scale-up of the pentavalent vaccine is cause for concern.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 38% in 1990 (95% CI: 26%, 52%) to 67% in 1998 (95% CI: 49%, 81%), but steadily declined thereafter, dropping to 14% in 2010 (95% CI: 2%, 41%) and falling below the national average of 37%. Alarmingly, Serenje's ANC4 coverage was among the lowest in Zambia for 2010.

Skilled birth attendance declined from 30% in 1990 (95% CI: 18%, 43%) to 13% in the late 1990s, but steadily rose to 66% in 2010 (95% CI: 28%, 92%), which was higher than the national average of 55% for that year. Serenje's progress in

improving its SBA coverage is notable given that the district consistently recorded levels of coverage well below the national average until the late 2000s.

The proportion of children who were exclusively breastfed remained below 20% until 1999, after which coverage rapidly rose to 70% in 2003 (95% CI: 63%, 76%). Exclusive breastfeeding coverage remained around 70% until 2007, climbing to 86% in 2010 (95% CI: 77%, 93%) and exceeding the national average of 80%.