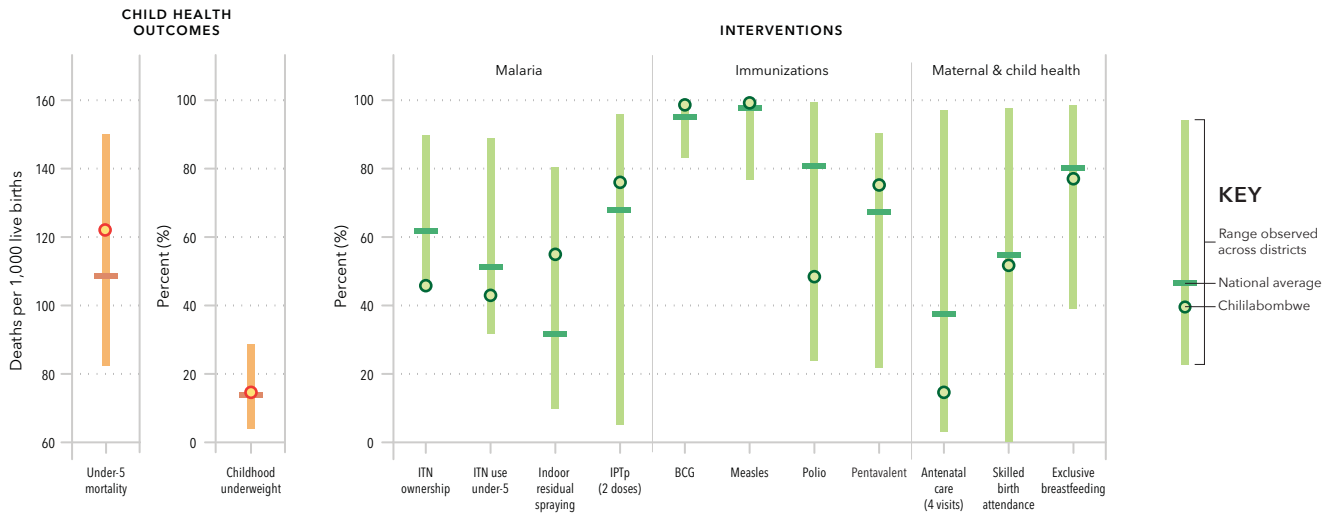


Copperbelt province



Chililabombwe



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

Chililabombwe had minimal reductions in its all-cause under-5 mortality and childhood underweight from 1990 to 2010; further, the district’s levels of under-5 mortality remained higher than the national average in 2010. Prioritizing ways to accelerate gains for child health outcomes should be considered.

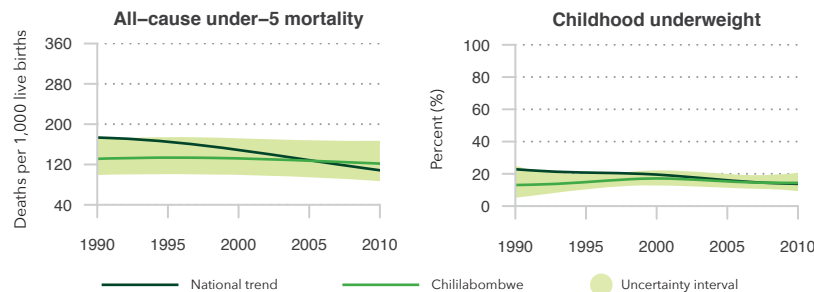
The district generally increased and maintained coverage of IRS and IPTp2, and rapidly scaled up the pentavalent vaccine. Chililabombwe sustained high levels of measles coverage over time, and brought up exclusive breastfeeding after a period of stalled gains. The district’s BCG coverage in 2010 was among the highest in Zambia.

However, amidst these successes, some troubling trends were identified and warrant further attention. ITN coverage

was much lower than the national average, and polio immunization fell to one of the lowest levels in Zambia for 2010. ANC4 coverage steadily declined to very low levels in 2010, and alarmingly, skilled birth attendance fell from high levels of coverage in the 1990s.

In 2010, Chililabombwe generally met or exceeded national levels for immunizations (with the exception of polio), but fell below for maternal and child health interventions. The district had a more mixed performance for malaria interventions. In comparison with the national average, Chililabombwe showed higher levels of mortality and similar levels of underweight.

CHILD HEALTH OUTCOMES

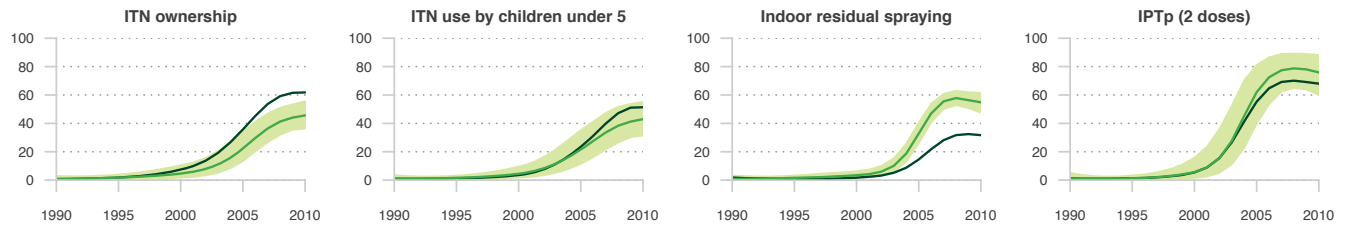


From 1990 to 2010, Chililabombwe recorded a small reduction in all-cause under-5 mortality, dropping 7% from 131 deaths per 1,000 live births in 1990 (95% CI: 101, 169) to 122 in 2010 (95% CI: 89, 165). This decline was not statistically significant. In 2010, the district’s under-5 mortality was much higher than the national average of 109 deaths per 1,000 live births (95% CI: 104, 116). This lack of progress is worrisome

given that the district’s levels of under-5 mortality were far below the national trend during the 1990s.

The proportion of children who were underweight increased from 13% in the early 1990s to 17% in 1998 (95% CI: 13%, 21%), and remained at this level through 2002. Underweight then declined to 14% in the late 2000s, equaling the national average for 2010. Overall, the district showed marginal progress in reducing childhood underweight.

MALARIA INTERVENTIONS



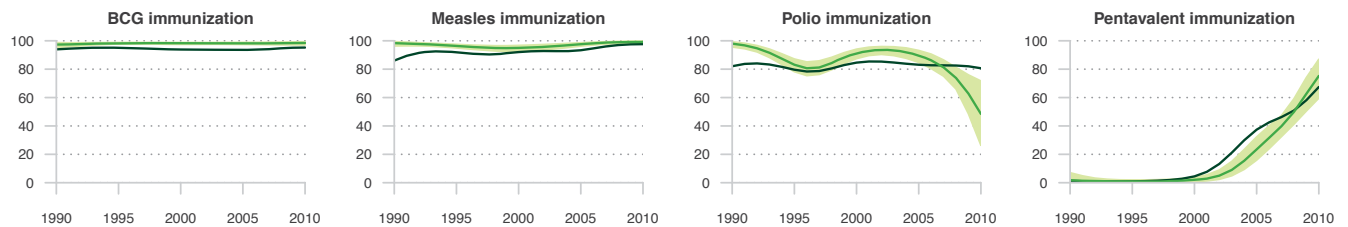
ITN ownership remained below 10% until 2003, after which coverage increased to 46% in 2010 (95% CI: 36%, 56%). This level of ITN ownership was well below the national average of 62% for 2010, and was among the lowest in Zambia.

ITN use by children under 5 years old rose to 43% in 2010 (95% CI: 31%, 55%), which was lower than the national average of 51%. In 2010, the difference between ITN ownership and ITN use was quite low, which suggests that net use by children under 5 may be high among households that have ITNs.

Chililabombwe formally implemented IRS activities in 2000, and was one of the first 15 districts in Zambia to roll out IRS. IRS coverage peaked at 58% in 2008 (95% CI: 53%, 63%), slightly decreasing to 55% in 2010 (95% CI: 47%, 61%).

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rapidly rose to 79% in 2008 (95% CI: 65%, 89%). IPTp2 coverage slipped to 76% in 2010 (95% CI: 60%, 88%), but remained above the national average of 68%.

IMMUNIZATIONS



Rising from 97% in the early 1990s, BCG coverage remained at 98% through 2010, which exceeded the national average of 95% and was among the highest in the country.

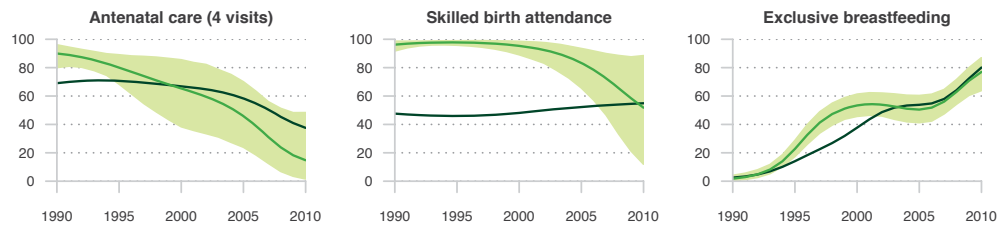
Measles immunization declined from 98% in the early 1990s to 95% during the late 1990s, but increased to 99% in 2007 (95% CI: 98%, 99%) and remained at 99% through 2010. This level of coverage was slightly higher than the national average of 98% for 2010.

Coverage of polio immunization dropped from 98% in 1990 (95% CI: 96%, 99%) to 81% in the mid-1990s, but climbed

to 94% in 2002 (95% CI: 90%, 96%). Polio coverage then declined sharply, dropping to 48% in 2010 (95% CI: 26%, 72%), among the lowest levels in Zambia. This decrease is cause for concern given that the district consistently recorded higher levels of coverage than the national trend prior to 2006.

After the pentavalent vaccine was formally introduced in Chililabombwe in 2005, coverage increased to 40% in 2007 (95% CI: 33%, 47%) and 75% in 2010 (95% CI: 60%, 87%), exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage dropped considerably from 90% in 1990 (95% CI: 80%, 96%) to 15% in 2010 (95% CI: 2%, 48%), falling below the national average of 37% for 2010. ANC4 dramatically decreased throughout Zambia from 1990 to 2010, and the finding that Chililabombwe's levels of coverage fell 75 percentage points during this time is troubling.

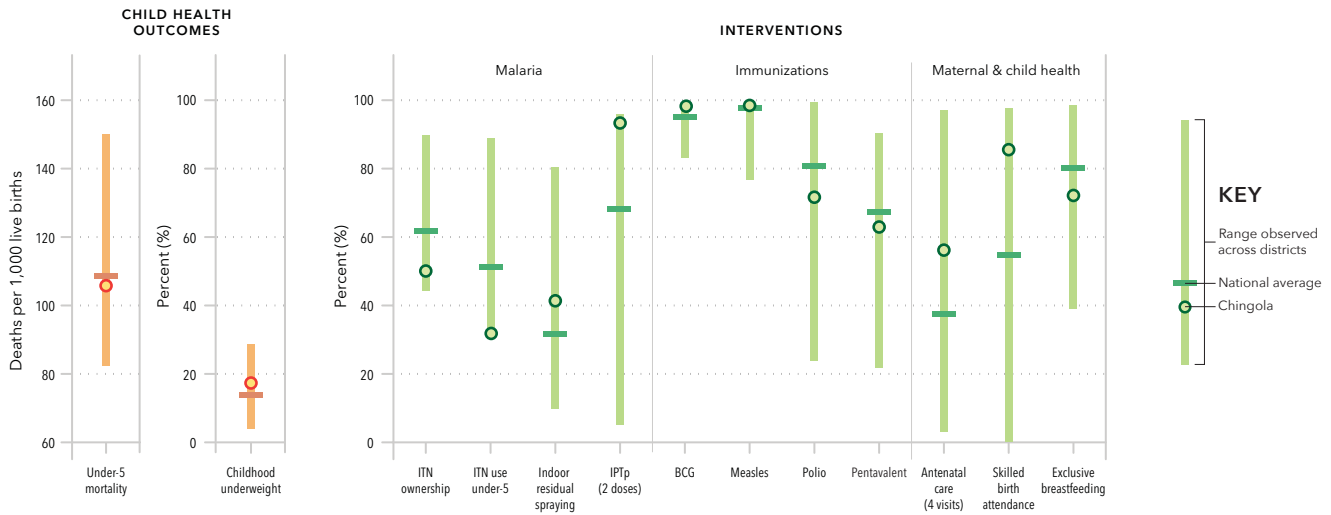
After rising to 98% in the mid-1990s, skilled birth attendance decreased to 52% in 2010 (95% CI: 12%, 88%), which was slightly lower than the national average of 55%. However,

this decline in SBA coverage during the 2000s is cause for concern given that its levels of coverage had previously exceeded the national trend by at least 40 percentage points.

The proportion of children who were exclusively breastfed remained below 20% until 1995, after which coverage rose to 54% in 2001 (95% CI: 47%, 62%). Gains in coverage stalled until 2007, and exclusive breastfeeding then climbed to 77% in 2010 (95% CI: 64%, 87%). This level of coverage was slightly lower than the national average of 80% for 2010.



Chingola



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

Chingola slightly reduced its all-cause under-5 mortality between 1990 and 2010. After a period of gradual declines, childhood underweight increased in Chingola, rising above the national average in 2010. Prioritizing ways to accelerate gains for child health outcomes should be considered.

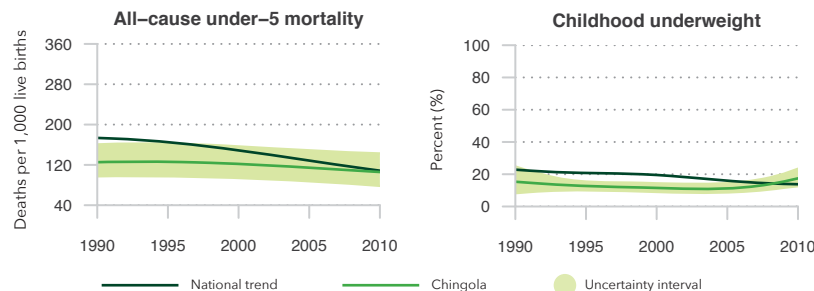
The district rapidly increased and maintained high coverage of IPTp2, and maintained fairly high levels of skilled birth attendance, bringing each to among the highest levels in Zambia for 2010. Chingola scaled up coverage of the pentavalent vaccine and sustained high levels of measles immunization. In 2010, the district's BCG coverage was among the highest in the country.

However, amidst these gains, some worrisome trends

were identified and warrant further attention. Chingola recorded substantial declines in polio immunization. Levels of IRS and ITN coverage decreased, with net ownership and use falling to among the lowest levels in Zambia. After maintaining very high levels of ANC4 during the 1990s, Chingola experienced an abrupt drop in coverage.

In 2010, Chingola did not perform consistently across any given group of interventions. For instance, the district met or exceeded the national averages for some immunizations (BCG and measles), but fell below the national averages for the pentavalent vaccine and polio coverage. In comparison with the national average, Chingola showed slightly lower levels of mortality and higher levels for underweight.

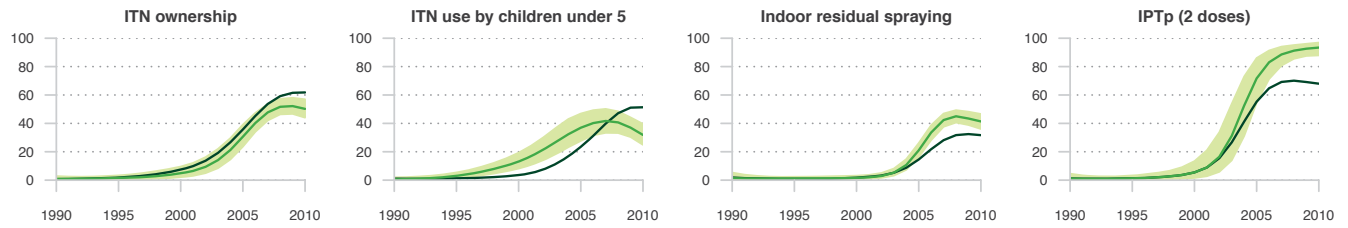
CHILD HEALTH OUTCOMES



From 1990 to 2010, Chingola recorded a small reduction in all-cause under-5 mortality, dropping 16% from 125 deaths per 1,000 live births in 1990 (95% CI: 97, 161) to 106 in 2010 (95% CI: 78, 143); 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 declined from 15% in the early 1990s to 11% in the early 2000s. Underweight remained at 11% until 2005, after which prevalence steadily climbed to 17% in 2010 (95% CI: 12%, 24%), exceeding the national average of 14%. This upward trend in childhood underweight is cause for concern.

MALARIA INTERVENTIONS



ITN ownership remained below 10% until 2003, after which coverage increased to 52% in 2008 (95% CI: 46%, 57%). Ownership slipped to 50% in 2010 (95% CI: 44%, 57%), which was among the lowest in Zambia.

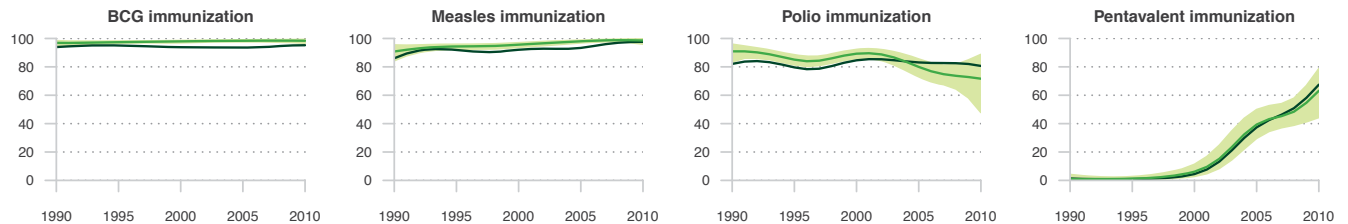
ITN use by children under 5 years old rose to 42% in 2007 (95% CI: 33%, 50%), but fell to 32% in 2010 (95% CI: 25%, 40%). Similar to ITN ownership, ITN use in Chingola also was among the lowest in Zambia for 2010. The difference between ITN ownership and use (18 percentage points) was higher in Chingola than what was observed at the national level (11

percentage points) for 2010.

Chingola formally implemented IRS activities in 2000, and was one of the first 15 districts in Zambia to roll out IRS. IRS coverage peaked at 45% in 2008 (95% CI: 41%, 49%), slightly decreasing to 41% in 2010 (95% CI: 36%, 47%).

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rapidly rose to 93% in 2009 (95% CI: 88%, 96%) and remained at 93% through 2010. This level of IPTp2 coverage was among the highest in Zambia for 2010.

IMMUNIZATIONS



After remaining at 97% through the mid-1990s, BCG coverage climbed to 98% in 1995 (95% CI: 97%, 98%) and stayed at this level through 2010, exceeding the national average of 95% and rising among the highest in Zambia.

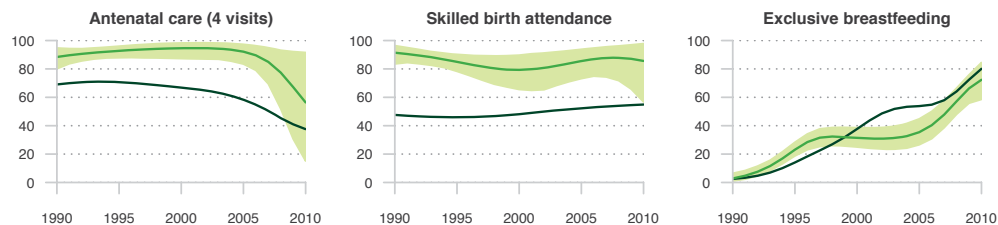
Measles immunization steadily increased from 91% in 1990 (95% CI: 84%, 95%) to 99% in 2007 (95% CI: 98%, 99%), and remained at 99% through 2010, slightly exceeding the national average of 98%.

Coverage of polio immunization dropped from 91% in the

early 1990s to 84% in the mid-1990s, after which coverage slightly increased and hovered around 90% until the mid-2000s. Polio coverage then steadily decreased, declining to 72% in 2010 (95% CI: 48%, 89%) and falling below the national average of 81%.

After the pentavalent vaccine was formally introduced in Chingola in 2005, coverage increased to 43% in 2006 (95% CI: 35%, 53%) and 63% in 2010 (95% CI: 44%, 79%), which was slightly lower than the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased 88% in 1990 (95% CI: 80%, 95%) to 95% in the early 2000s. Coverage remained above 90% until 2007, after which ANC4 steeply fell to 56% in 2010 (95% CI: 15%, 92%). Despite this decline, this level of coverage remained higher than the national average of 37% in 2010. Nevertheless, the finding that Chingola's levels of coverage fell nearly 40 percentage points in eight years is troubling.

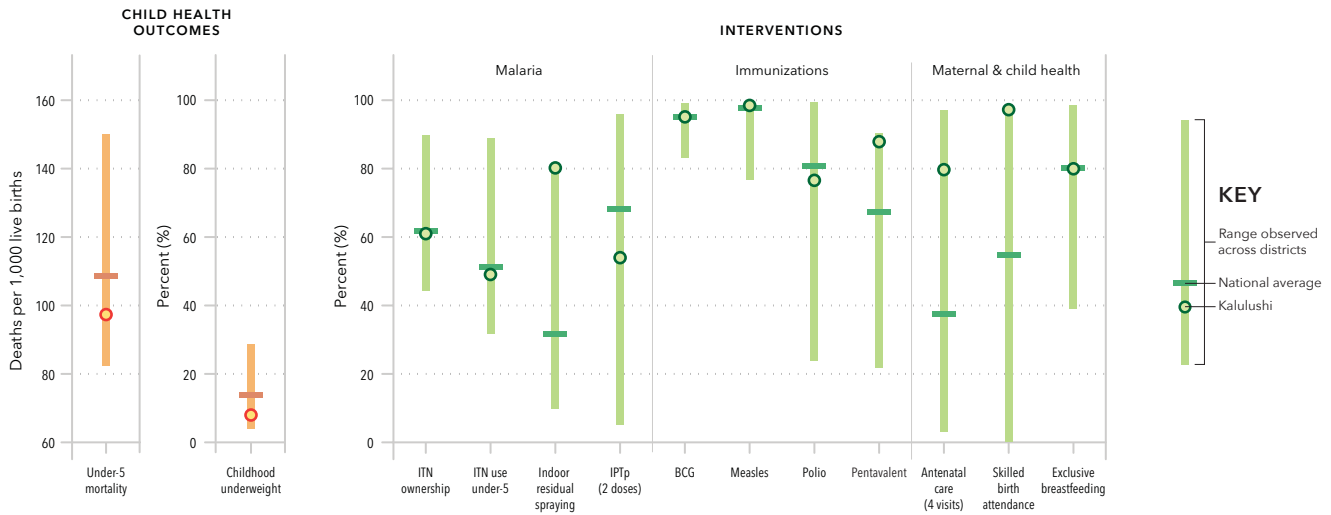
Skilled birth attendance declined from 91% in 1990 (95% CI: 84%, 96%) to 79% in 2000 (95% CI: 65%, 90%), but then

gradually rose to 88% in the late 2000s. SBA coverage slipped to 86% in 2010 (95% CI: 57%, 98%), but still was among the highest levels in Zambia.

The proportion of children who were exclusively breastfed remained below 20% until 1995, after which coverage increased to 32% in the late 1990s. Exclusive breastfeeding hovered around 30% through 2004, but quickly climbed to 72% in 2010 (95% CI: 58%, 85%). Nonetheless, this level of coverage was lower than the national average of 80% for 2010.



Kalulushi



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

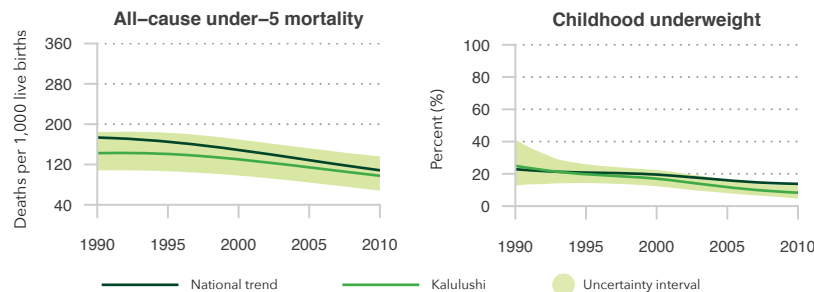
Kalulushi reduced its all-cause under-5 mortality between 1990 and 2010, but the magnitude of its progress was fairly low. Childhood underweight substantially declined, falling among the lowest levels in Zambia. Prioritizing ways to further accelerate gains for child health outcomes should be considered.

The district scaled up ITN coverage and recorded some of the highest levels of IRS in Zambia for 2010. Kalulushi rapidly scaled up coverage of the pentavalent vaccine and maintained high coverage of BCG and measles immunization. Exclusive breastfeeding coverage rebounded after a period of declines. Impressively, skilled birth attendance increased to extremely high levels in the early 2000s and remained high through 2010, rising to among the highest in Zambia.

However, amidst these gains, some worrisome trends were identified and warrant further attention. IPTp2 coverage declined from its peak in 2007, and ANC4 coverage decreased during the late 2000s. Polio immunization dropped after consistently remaining well above the national average during the 1990s and early 2000s.

In 2010, Kalulushi generally met or exceeded the national average across child health interventions, with the exceptions being IPTp2 coverage and polio immunization. In comparison with the national average, Kalulushi showed lower levels of mortality and underweight.

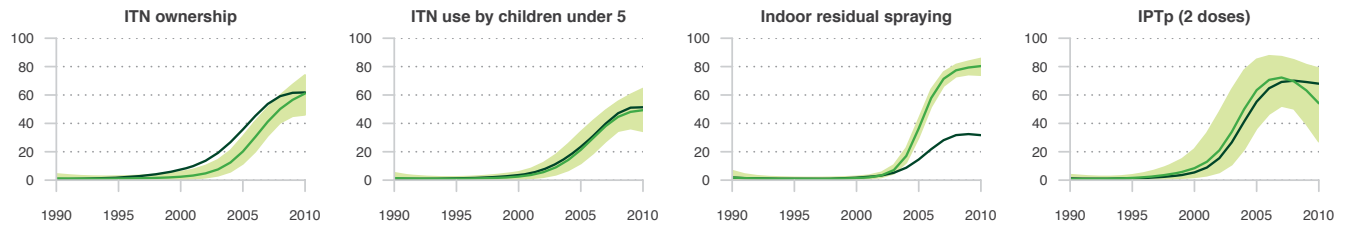
CHILD HEALTH OUTCOMES



From 1990 to 2010, Kalulushi recorded a reduction in all-cause under-5 mortality, dropping 32% from 143 deaths per 1,000 live births in 1990 (95% CI: 110, 182) to 98 in 2010 (95% CI: 70, 134); 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: 104, 116).

The proportion of children who were underweight decreased from 25% in 1990 (95% CI: 13%, 40%) to 8% in 2010 (95% CI: 5%, 12%), which was well below the national average of 14% and among the lowest in Zambia.

MALARIA INTERVENTIONS



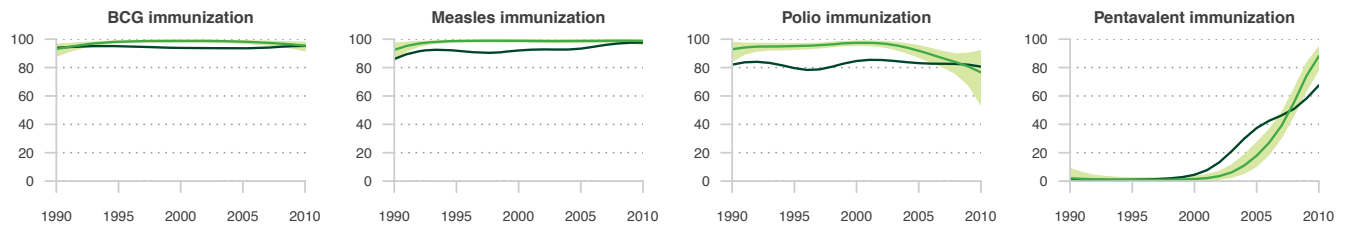
ITN ownership remained below 10% until 2004, after which coverage rapidly increased to 61% in 2010 (95% CI: 46%, 74%). This level of ITN ownership was comparable to the national average of 62% in 2010.

ITN use by children under 5 years old quickly rose to 49% in 2010 (95% CI: 34%, 65%), but was slightly lower than the national average of 51%. The difference between ITN ownership and use (12 percentage points) in Kalulushi was comparable to that observed at the national level for 2010.

Kalulushi formally implemented IRS activities in 2004, and was one of the first 15 districts in Zambia to roll out IRS. Spraying coverage reached 80% in 2010 (95% CI: 74%, 86%), which was among the highest in Zambia.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, but rapidly rose to 72% in 2007 (95% CI: 52%, 87%). IPTp2 coverage then decreased to 54% in 2010 (95% CI: 27%, 79%), falling below the national average of 68%.

IMMUNIZATIONS



BCG coverage increased from 93% in 1990 (95% CI: 88%, 96%) to 99% in 1997 (95% CI: 98%, 99%). Coverage remained at 99% through 2004, after which immunization rates declined to 95% in 2010 (95% CI: 92%, 98%), equaling the national average.

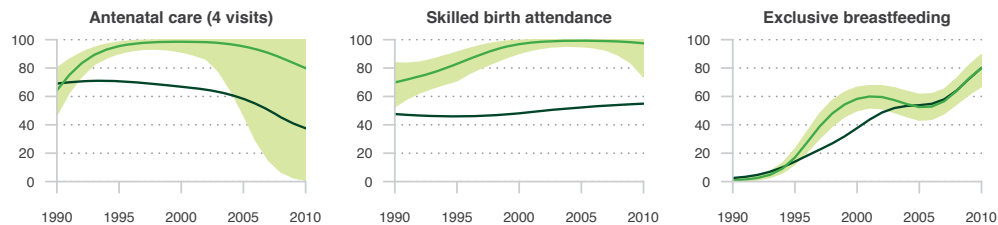
Measles immunization climbed from 92% in 1990 (95% CI: 85%, 97%) to 99% in 1995 (95% CI: 98%, 99%), after which coverage was maintained at 99% through 2010, slightly exceeding the national average of 98%.

Coverage of polio immunization steadily increased from 93% in 1990 (95% CI: 85%, 97%) to 97% in the late 1990s.

Polio coverage remained at 97% until 2003, dropping to 77% in 2010 (95% CI: 54%, 92%) and falling slightly below the national average of 81%. This decline in polio immunization is cause for concern given that the district sustained high levels of coverage through the early 2000s.

After the pentavalent vaccine was formally introduced in Kalulushi in 2005, coverage increased to 39% in 2007 (95% CI: 31%, 48%) and then jumped to 88% in 2010 (95% CI: 79%, 94%), far exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS

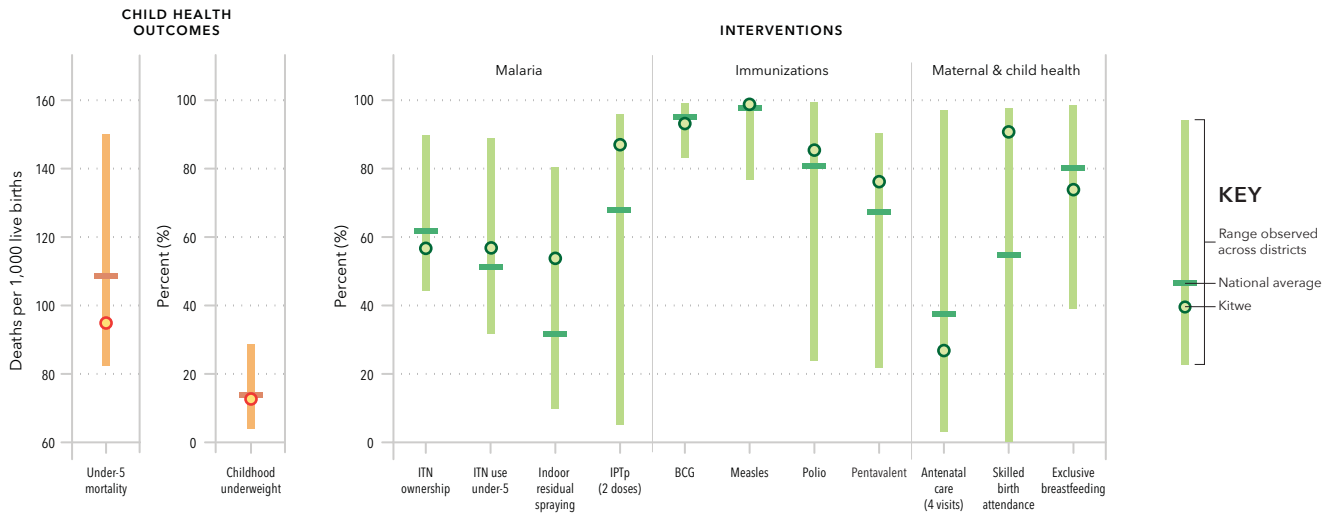


ANC4 coverage climbed from 64% in 1990 (95% CI: 47%, 80%) to a high of 99% in 2000 (95% CI: 92%, 100%). Coverage remained at 98% in the early 2000s, but decreased thereafter, dropping to 80% in 2010 (95% CI: 1%, 100%). Despite this decline, Kalulushi's level of ANC4 exceeded the national average of 37% in 2010 and was among the highest in Zambia.

Skilled birth attendance steadily increased from 70% in 1990 (95% CI: 53%, 84%) to 99% in 2002 (95% CI: 94%, 100%). SBA coverage remained at 99% until 2009, slipping to 97%

in 2010 (95% CI: 74%, 100%). This level of coverage far exceeded the national average of 55% in 2010 and was among the highest in Zambia.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage rapidly rose to 60% in 2001 (95% CI: 52%, 67%). Gains in coverage stalled for several years, with exclusive breastfeeding coverage falling to 53% before rebounding to 80% in 2010 (95% CI: 67%, 89%), which equaled the national average.



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

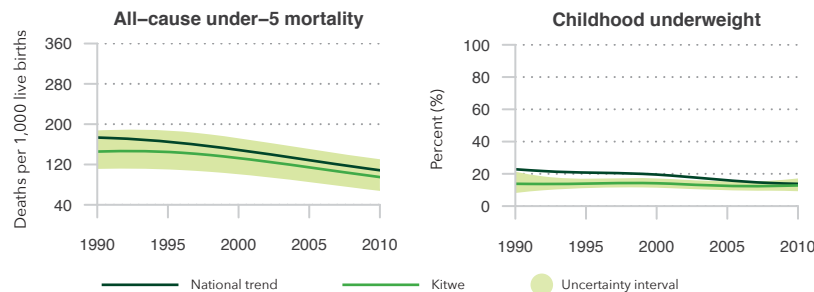
Kitwe reduced its all-cause under-5 mortality between 1990 and 2010, bringing its mortality levels below the national average in 2010. Less progress was made for childhood underweight, as prevalence generally stagnated in Kitwe over time. Prioritizing efforts to accelerate gains for child health outcomes should be considered.

High levels of IRS and IPTp2 coverage were achieved in 2010, and ITN use was consistently higher than the national average. Kitwe rapidly scaled up coverage of the pentavalent vaccine, and levels of routine immunizations generally met or exceeded the national average in 2010. Skilled birth attendance was consistently well above the national trend, and Kitwe's levels of SBA coverage were among the highest in Zambia for 2010.

However, amidst these successes, some troubling trends were identified and warrant further attention. Despite gains in coverage during the late 2000s, exclusive breastfeeding remained below the national average in 2010. ANC4 coverage dropped sharply in recent years, which is particularly alarming given that Kitwe's levels of ANC4 were quite high prior to the mid-2000s.

In 2010, Kitwe generally met or exceeded the national average for malaria interventions and immunizations, but fell below for maternal and child health interventions; the district's high level of skilled birth attendance was the stark exception. In comparison with the national average, Kitwe showed lower levels of mortality and similar levels of underweight.

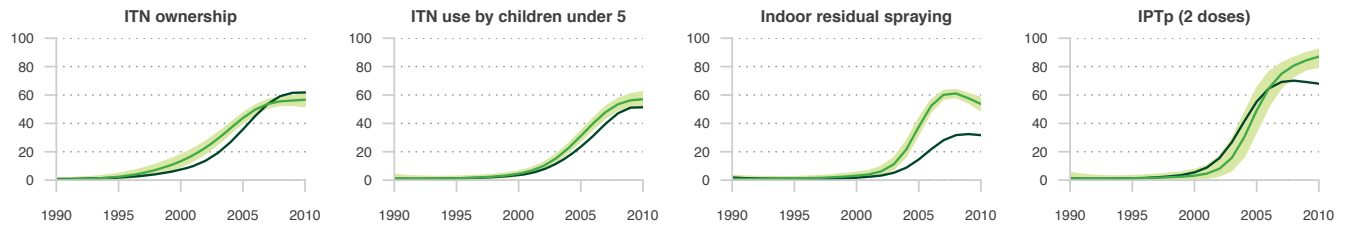
CHILD HEALTH OUTCOMES



From 1990 to 2010, Kitwe recorded a significant reduction in all-cause under-5 mortality, dropping 35% from 146 deaths per 1,000 live births in 1990 (95% CI: 113, 186) to 95 in 2010 (95% CI: 70, 128). 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).

The proportion of children who were underweight remained at 14% from 1990 to 2002, after which underweight decreased to 12% during the mid-2000s before rising to 13% in 2009 (95% CI: 10%, 16%) and remaining at 13% through 2010. This level of underweight was comparable to the national average of 14% for 2010, but Kitwe's minimal progress in reducing childhood underweight is cause for concern.

MALARIA INTERVENTIONS



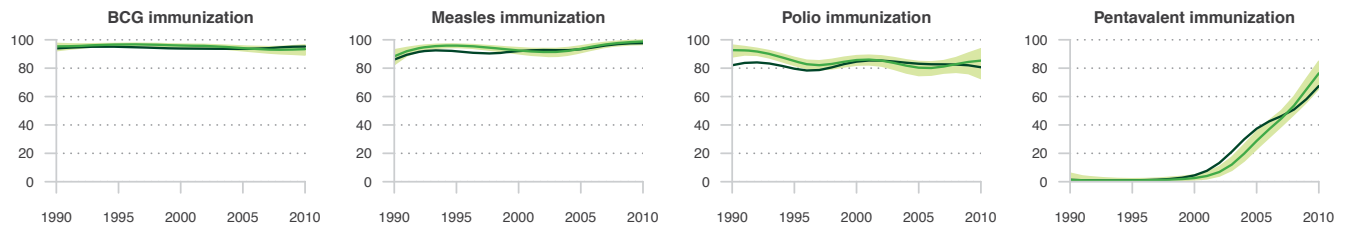
ITN ownership remained below 10% until 1999, after which coverage rapidly increased to 57% in 2010 (95% CI: 52%, 61%), falling slightly below the national average of 62%.

ITN use by children under 5 years old quickly rose to 57% in 2010 (95% CI: 51%, 62%), exceeding the national average of 51%. In 2010, ITN use equaled ownership in Kitwe, which suggests that net use by children under 5 may be high among households that have ITNs.

Kitwe formally implemented IRS activities in 2003 and was one of the first 15 districts in Zambia to roll out IRS. IRS coverage reached its peak of 61% in 2008 (95% CI: 58%, 64%), slipping to 54% in 2010 (95% CI: 49%, 58%).

The proportion of pregnant women who received IPTp2 remained below 10% until 2003, but rapidly rose to 87% in 2010 (95% CI: 80%, 92%), far exceeding the national average of 68%.

IMMUNIZATIONS



BCG coverage increased from 95% in the early 1990s to 97% in the mid-1990s, but fell to 93% in 2007 (95% CI: 91%, 95%) and remained at 93% through 2010. This level of BCG coverage was lower than the national average of 95% for 2010.

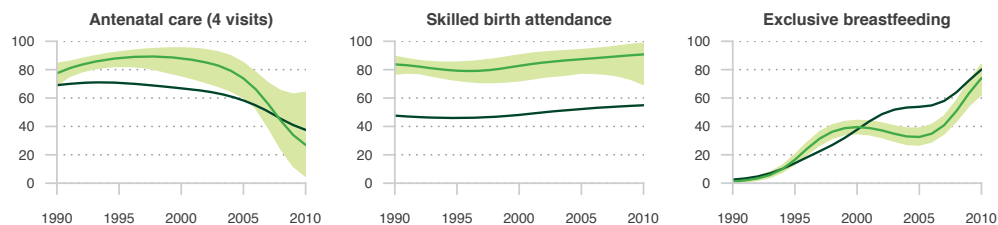
Measles immunization rose from 88% in 1990 (95% CI: 83%, 93%) to 96% in the mid-1990s before declining to 91% in the early 2000s. Measles coverage rebounded, reaching 99% in 2010 (95% CI: 97%, 100%) and slightly exceeding the national average of 98%.

Coverage of polio immunization in the district fell from

93% in the early 1990s to 82% in 1997 (95% CI: 79%, 85%), but then increased to 86% in the early 2000s. Polio coverage briefly slipped to 80% during the mid-2000s before rising to 85% in 2010 (95% CI: 73%, 94%), which was slightly higher than the national average of 81%.

After the pentavalent vaccine was formally introduced in Kitwe in 2005, coverage increased to 37% in 2006 (95% CI: 31%, 43%) and 76% in 2010 (95% CI: 66%, 85%), which was higher than the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 77% in 1990 (95% CI: 69%, 84%) to 89% in the mid- and late 1990s, but then steadily dropped to 27% in 2010 (95% CI: 5%, 64%), falling below the national average of 37%. The finding that Kitwe's levels of coverage fell more than 60 percentage points since 1999 is particularly worrisome.

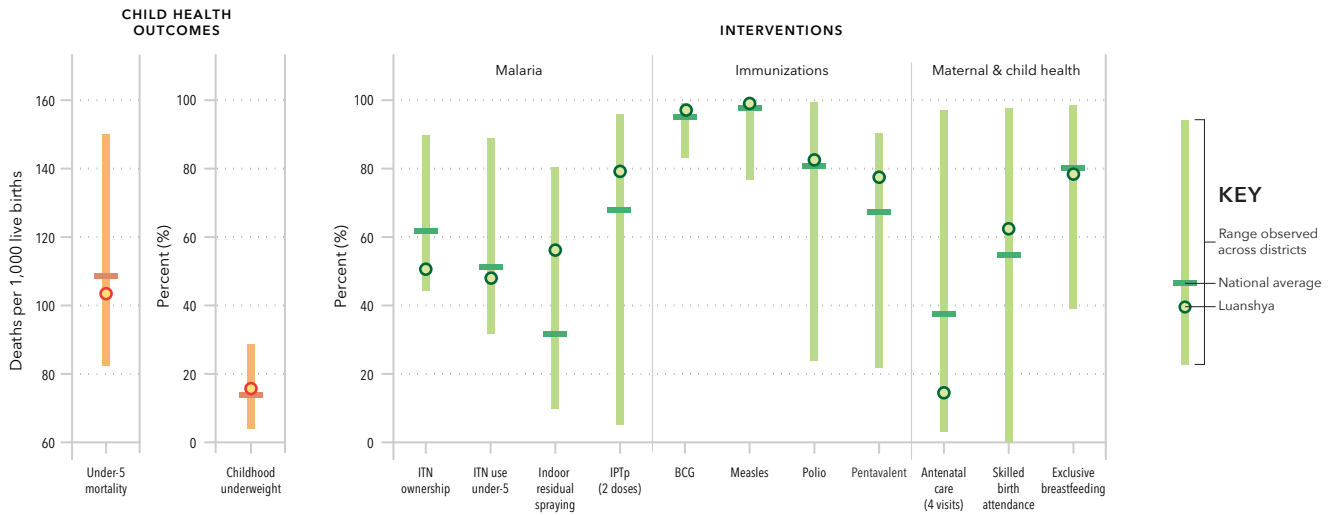
Skilled birth attendance declined from 84% in 1990 (95% CI: 77%, 89%) to 79% in the mid-1990s, after which coverage steadily rose to 91% in 2010 (95% CI: 70%, 99%), far

exceeding the national average of 55%. This level of SBA coverage was among the highest in Zambia for 2010.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage increased to 40% in 2000 (95% CI: 35%, 44%). Gains in coverage stalled, with exclusive breastfeeding dropping to 33% in the mid-2000s before rebounding to 74% in 2010 (95% CI: 63%, 84%). This level of coverage remained below the national average of 80% for 2010.



Luanshya



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

Luanshya slightly reduced its all-cause under-5 mortality from 1990 to 2010, and worryingly, childhood underweight generally increased during this time. Prioritizing efforts to accelerate gains for child health outcomes should be considered.

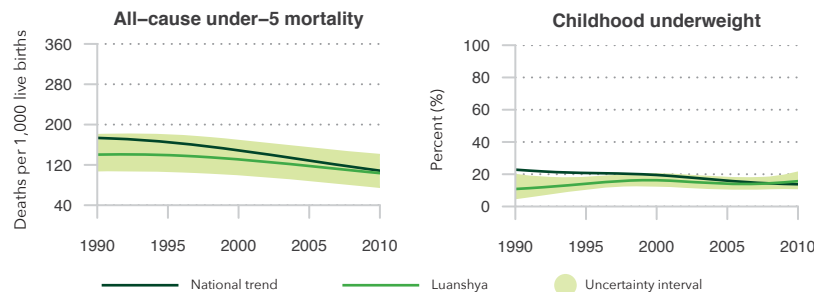
The district rapidly increased coverage of the pentavalent vaccine, and sustained high levels of BCG and measles immunization. Coverage of IRS was among the highest in Zambia for 2010, and levels of IPTp2 exceeded the national average in 2010. After a period of stalled progress, exclusive breastfeeding nearly reached the national average in 2010.

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

quite low, and skilled birth attendance steadily decreased over time. Alarming, after maintaining high levels of ANC4 coverage during the 1990s and early 2000s, ANC4 declined steeply to among the lowest levels in Zambia.

In 2010, Luanshya generally met or exceeded the national average across immunizations, but fell below for maternal and child health interventions (with the exception of skilled birth attendance). The district's performance for malaria interventions was more mixed. In comparison with the national average, Luanshya showed slightly lower levels of mortality and higher levels of underweight.

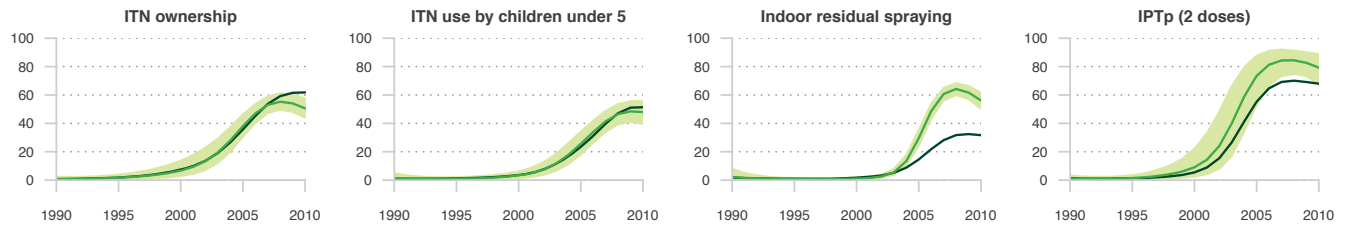
CHILD HEALTH OUTCOMES



From 1990 to 2010, Luanshya recorded a reduction in all-cause under-5 mortality, dropping 26% from 140 deaths per 1,000 live births in 1990 (95% CI: 109, 179) to 104 in 2010 (95% CI: 76, 140); 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 increased from 11% in the early 1990s to 16% in 1997 (95% CI: 13%, 19%), and remained at 16% through 2001. Underweight declined to 14% during the mid-2000s, but climbed to 16% in 2010 (95% CI: 11%, 21%), exceeding the national average of 14%. This overall trend of rising levels of underweight is cause for concern.

MALARIA INTERVENTIONS



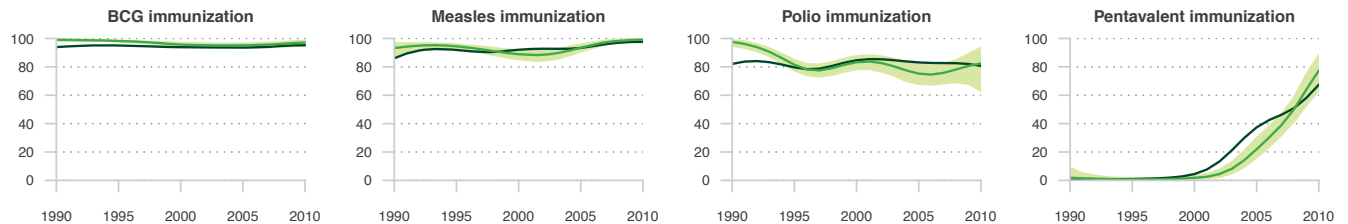
ITN ownership remained below 10% until 2002, after which coverage quickly increased to 55% in 2008 (95% CI: 50%, 61%). Ownership slipped to 51% in 2010 (95% CI: 44%, 57%), which was among the lowest in Zambia for that year.

ITN use by children under 5 years old climbed to 48% in 2009 (95% CI: 41%, 56%) and remained at this level through 2010, which was slightly lower than the national average of 51%. In 2010, the difference between ITN ownership and ITN use was quite low in Luanshya, which suggests that net use by children under 5 may be high among households that have ITNs.

Luanshya formally implemented IRS activities in 2006, and was one of the first 15 districts in Zambia to roll out IRS. Spraying coverage peaked at 64% in 2008 (95% CI: 60%, 68%), slipping to 56% in 2010 (95% CI: 50%, 62%). Nonetheless, IRS coverage remained among the highest in Zambia for 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, after which coverage rapidly rose to 84% in 2007 (95% CI: 73%, 92%). IPTp2 coverage dropped to 79% in 2010 (95% CI: 67%, 89%), but remained higher than the national average of 68%.

IMMUNIZATIONS



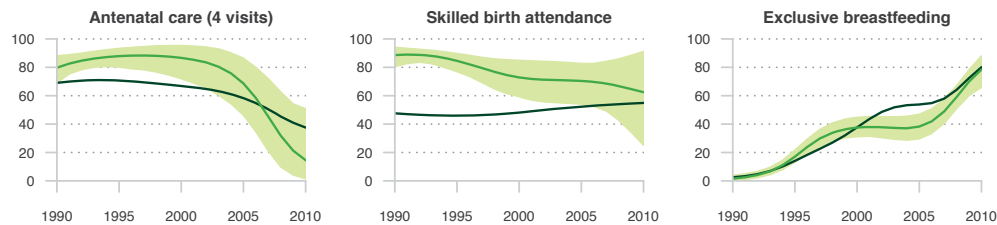
BCG coverage declined from 99% in the early 1990s to 95% in the early and mid-2000s, but rose to 97% in 2009 (95% CI: 94%, 98%) and remained at 97% through 2010. This level of coverage was higher than the national average of 95% for 2010.

Measles immunization decreased from 95% in the early 1990s to 88% in 2001 (95% CI: 84%, 92%), but then steadily climbed to 99% in 2009 (95% CI: 98%, 100%). Measles coverage stayed at 99% through 2010, slightly exceeding the national average of 98%.

Coverage of polio immunization fell from 98% in 1990 (95% CI: 95%, 99%) to 77% in 1997 (95% CI: 73%, 82%) before rising above 80% in the early 2000s. Coverage dropped to 75% in the mid-2000s but rose to 82% in 2010 (95% CI: 63%, 93%), which was comparable to the national average of 81%.

After the pentavalent vaccine was formally introduced in Luanshya in 2005, coverage increased to 39% in 2007 (95% CI: 32%, 47%) and then escalated to 77% in 2010 (95% CI: 63%, 89%), exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased from 80% in 1990 (95% CI: 69%, 88%) to 88% in the mid- and late 1990s, but then steeply declined to 15% in 2010 (95% CI: 2%, 51%), falling to among the lowest levels in Zambia. Since 1999, Luanshya's levels of ANC4 coverage fell more than 70 percentage points, which is quite worrisome.

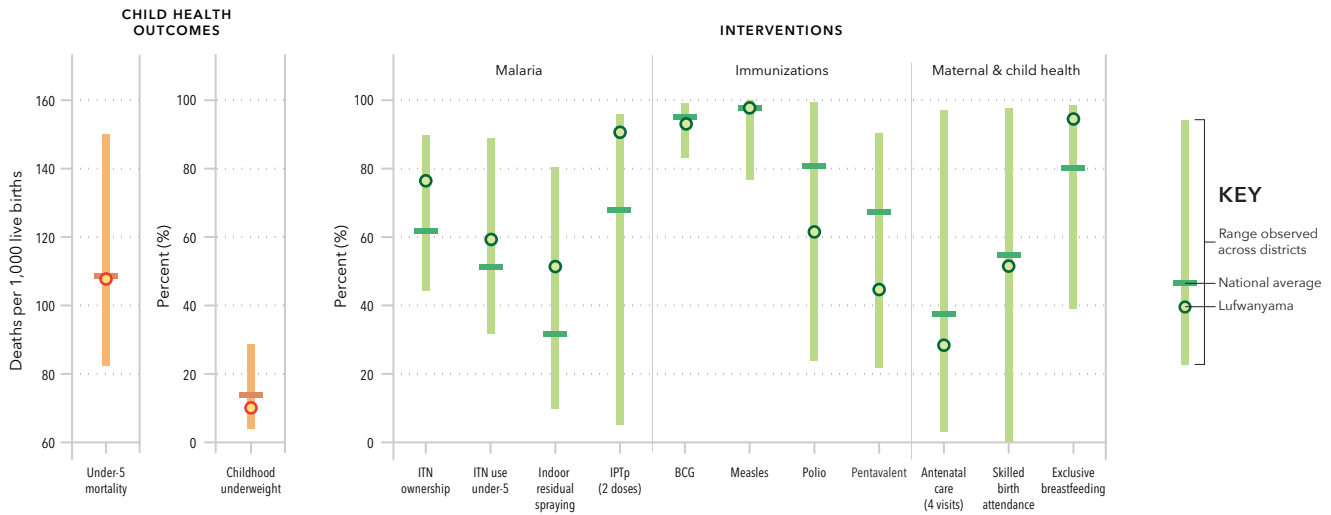
Skilled birth attendance slowly decreased from 89% in 1990 (95% CI: 81%, 94%) to 62% in 2010 (95% CI: 25%, 91%), which was slightly higher than the national average of 55%.

Nonetheless, Luanshya's declines in SBA coverage over time warrant further attention.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage increased to 38% in the early 2000s. Gains in coverage slowed until 2006, with exclusive breastfeeding coverage rising to 78% in 2010 (95% CI: 66%, 88%) and falling slightly lower than the national average of 80%.



Lufwanyama



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

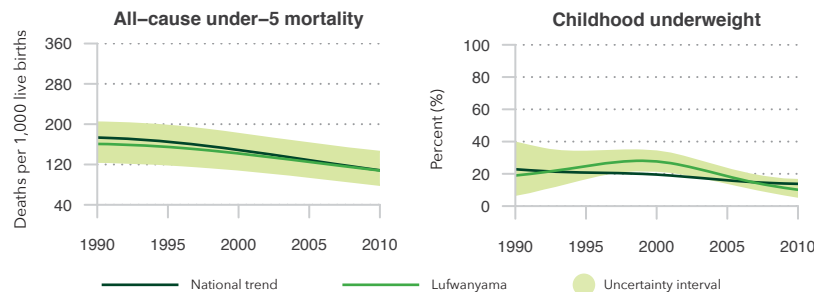
Lufwanyama substantially reduced all-cause under-5 mortality from 1990 to 2010. After a period of rising levels of childhood underweight, prevalence dramatically decreased during the 2000s. Prioritizing ways to maintain these rates of progress in child health outcomes should be considered.

IPTp2 coverage increased to some of the highest levels in Zambia, and ITN ownership and IRS were well above the national averages in 2010. The district maintained high levels of BCG and measles immunization. After many years of exceedingly low coverage, skilled birth attendance steadily increased. Exclusive breastfeeding rose to among the highest levels in Zambia for 2010.

However, amidst these gains, some troubling trends were identified and warrant further attention. The district had a minimal scale-up of the pentavalent vaccine, and polio immunization dropped after consistently exceeding the national average for 15 years. ANC4 coverage abruptly fell in the late 2000s, which is particularly concerning given its very high levels of coverage during the 1990s and early 2000s.

In 2010, Lufwanyama generally met or exceeded the national average for malaria interventions and key maternal and child health interventions (with the exception of ANC4), but was much less consistent for immunizations. In comparison with the national average, Lufwanyama showed similar levels of mortality and lower levels of underweight.

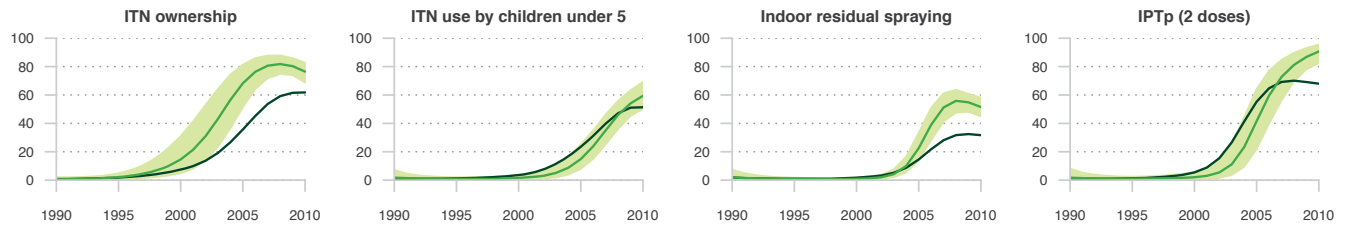
CHILD HEALTH OUTCOMES



From 1990 to 2010, Lufwanyama recorded a significant reduction in all-cause under-5 mortality, dropping 33% from 161 deaths per 1,000 live births in 1990 (95% CI: 125, 204) to 108 in 2010 (95% CI: 79, 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 increased from 19% in 1990 (95% CI: 7%, 39%) to 28% in the late 1990s, but then substantially decreased to 10% in 2010 (95% CI: 6%, 16%), falling below the national average of 14%. The district's recent progress in reducing underweight is quite laudable.

MALARIA INTERVENTIONS



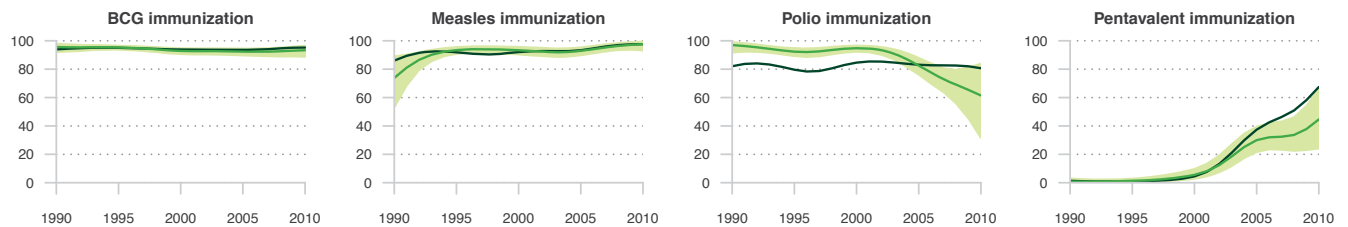
ITN ownership remained below 10% until 1999, after which coverage rapidly increased to 82% in 2008 (95% CI: 75%, 88%). Ownership slipped to 76% in 2010 (95% CI: 69%, 83%), but remained much higher than the national average of 62%.

ITN use by children under 5 quickly rose to 59% in 2010 (95% CI: 50%, 69%), which was above the national average of 51%. The difference between ITN ownership and use (17 percentage points) was higher in Lufwanyama than what was observed at the national level (11 percentage points) for 2010.

Lufwanyama formally implemented IRS activities in 2008 and reached 56% of households that year (95% CI: 48%, 64%). IRS coverage fell slightly to 52% in 2010 (95% CI: 45%, 58%), but this level of IRS remained on the higher end 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 rose to 91% in 2010 (95% CI: 83%, 96%). This level of IPTp2 coverage was among the highest in Zambia for 2010.

IMMUNIZATIONS



BCG coverage gradually declined from 96% in 1990 (95% CI: 92%, 98%) to 92% in the mid-2000s, after which coverage slightly increased to 93% in 2008 (95% CI: 89%, 95%). This level of BCG coverage was maintained through 2010, falling slightly lower than the national average of 95%.

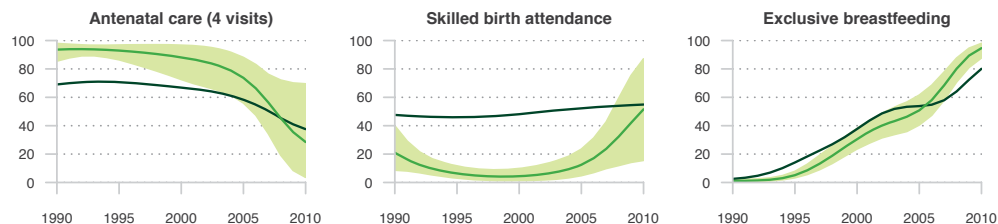
Measles immunization increased from 74% in 1990 (95% CI: 53%, 89%) to 94% in the mid- and late 1990s, but slipped to 92% in the mid-2000s. Measles coverage then steadily climbed to 98% in 2010 (95% CI: 93%, 100%), equaling the national average.

Coverage of polio immunization gradually decreased from 97% in 1990 (95% CI: 92%, 99%) to 91% in 2003 (95% CI:

87%, 94%), after which the rate of decline accelerated. Polio coverage dropped to 61% in 2010 (95% CI: 31%, 84%), falling well below the national average of 81%. This recent decline in polio coverage is worrisome given that the district recorded immunization rates exceeding 90% until 2004.

After the pentavalent vaccine was formally introduced in Lufwanyama in 2005, coverage increased to 32% in 2006 (95% CI: 23%, 42%) and 45% in 2010 (95% CI: 24%, 66%), which was well below the national average of 67%. The district documented a fairly minimal scale-up of the vaccine, with its coverage falling to among the lowest in Zambia for 2010.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage decreased from 94% in the early 1990s to 28% in 2010 (95% CI: 4%, 69%), falling below the national average of 37%. ANC4 coverage in Lufwanyama had consistently remained higher than the national average from 1990 to 2005, which makes its abrupt drop during the late 2000s even more troubling.

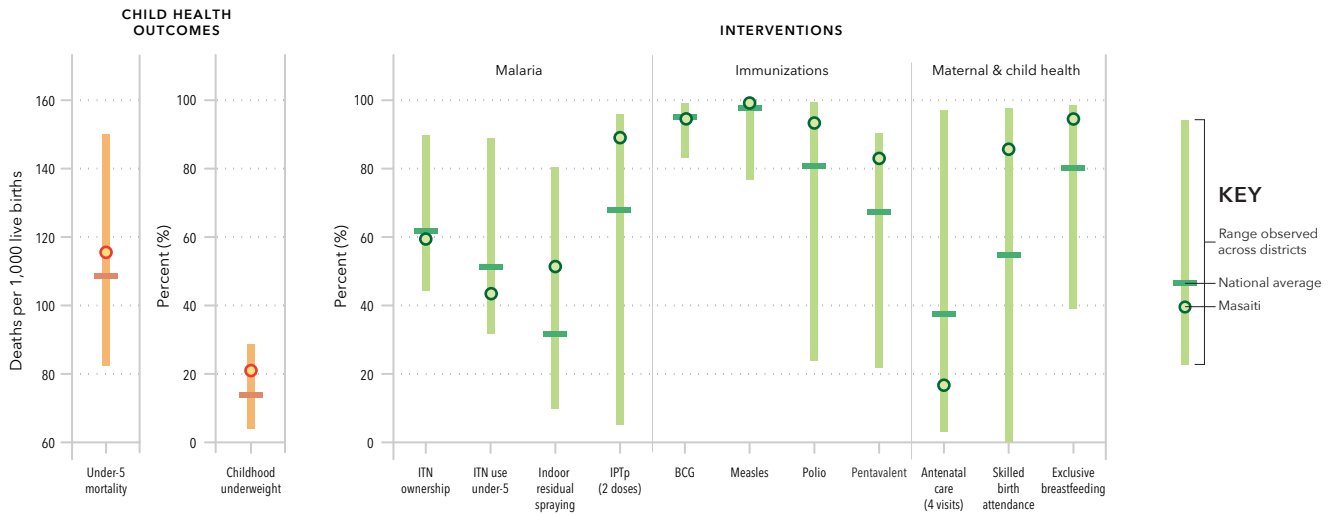
Skilled birth attendance fell below 10% from 1994 to 2004, after which coverage steadily increased to 52% in 2010 (95%

CI: 16%, 87%). This level of SBA coverage was slightly lower than the national average of 55% for 2010, which is notable given that coverage had been extremely low for more than a decade.

The proportion of children who were exclusively breastfed remained below 20% until 1999, after which coverage rapidly climbed to 95% in 2010 (95% CI: 88%, 98%). This level of exclusive breastfeeding was among the highest in Zambia for 2010.



Masaiti



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

Masaiti reduced its all-cause under-5 mortality between 1990 and 2010, but its levels of mortality remained higher than the national average in 2010. After recording steady declines in childhood underweight from 1990 to 2002, the district's levels of underweight increased through 2010 and were among the highest in Zambia for that year. Prioritizing efforts to accelerate gains for child health outcomes, especially childhood underweight, should be considered.

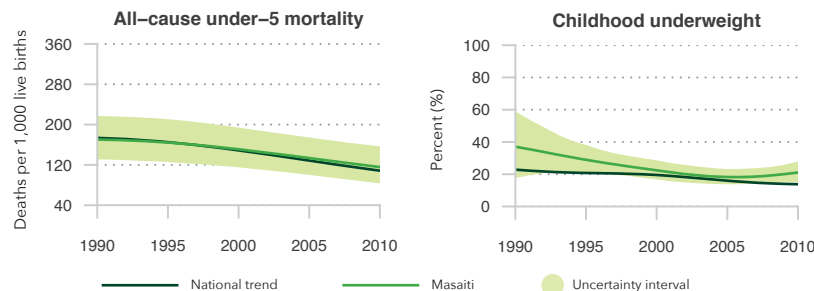
Masaiti scaled up and maintained coverage of malaria interventions through 2010, especially for IPTp2. The district recorded rapid gains in pentavalent coverage, and polio immunization coverage exceeded the national average in 2010. Exclusive breastfeeding reached some of the highest levels in Zambia in 2010, and skilled birth attendance rebounded

from very low coverage during the early 2000s to among the highest in the country in 2010. Much could be learned from the district's success in improving its levels of skilled birth attendance.

However, amidst these gains, ANC4 coverage dropped sharply in Masaiti. This finding is particularly worrisome given that the district recorded high levels of coverage during the 1990s. Masaiti would likely benefit from targeting ANC4 for improvement.

In 2010, Masaiti generally met or exceeded the national average across all interventions, with the clear exception of ANC4 coverage. In comparison with the national average, Masaiti showed higher levels of mortality and underweight.

CHILD HEALTH OUTCOMES

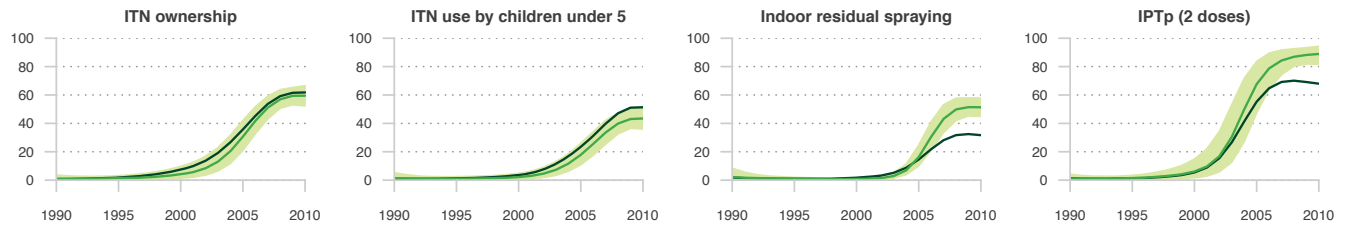


From 1990 to 2010, Masaiti recorded a significant reduction in all-cause under-5 mortality, dropping 32% from 170 deaths per 1,000 live births in 1990 (95% CI: 133, 215) to 116 in 2010 (95% CI: 85, 155). In 2010, the district's under-5 mortality still remained higher than the national average of 109 deaths per 1,000 live births (95% CI: 104 to 116).

The proportion of children who were underweight steadily decreased from 37% in 1990 (95% CI: 18%, 58%) to 18% in

the mid-2000s, after which underweight increased to 21% in 2010 (95% CI: 16%, 27%). This level of childhood underweight was much higher than the national average of 14% and was among the highest in Zambia for 2010. Although Masaiti's overall progress is notable, the district's recent rise in prevalence and continued high levels of underweight are cause for concern.

MALARIA INTERVENTIONS



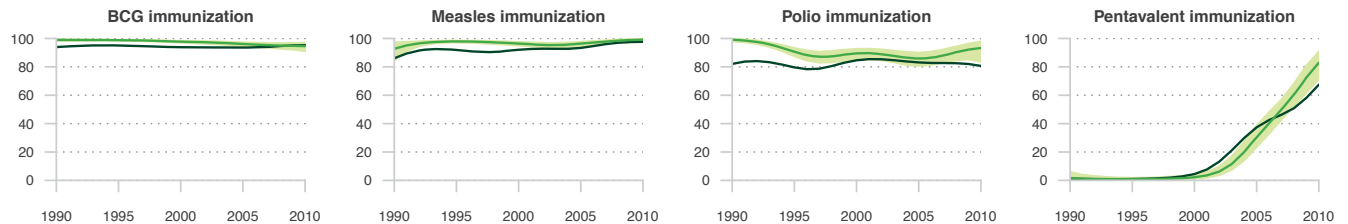
ITN ownership remained below 10% until 2003, after which coverage rapidly increased to 60% in 2010 (95% CI: 52%, 66%). This level of ITN ownership was slightly lower than the national average of 62% for 2010.

ITN use by children under 5 climbed to 43% in 2009 (95% CI: 37%, 50%) and remained at 43% through 2010, which was much lower than the national average of 51%. The difference between ITN ownership and use (17 percentage points) was higher in Masaiti than what was observed at the national level (11 percentage points) for 2010.

Masaiti formally implemented IRS activities in 2008 and reached 51% of households in 2010 (95% CI: 45%, 58%). Masaiti's scale-up of IRS by 2010 was on the higher end 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 89% in 2010 (95% CI: 82%, 94%), far exceeding the national average of 68% and rising to among the highest levels in Zambia.

IMMUNIZATIONS



BCG coverage gradually declined from 99% in the 1990s to 95% in 2007 (95% CI: 93%, 97%) and remained at this level through 2010, equalling the national average.

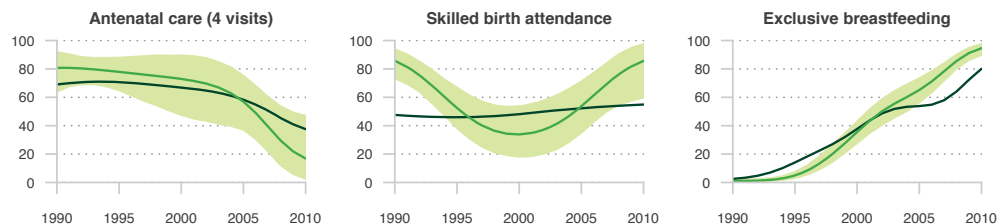
Measles immunization increased from 93% in 1990 (95% CI: 84%, 97%) to 98% in the mid-1990s, but then declined to 95% in 2003 (95% CI: 93%, 97%). Measles coverage rebounded, rising to 99% in 2009 (95% CI: 97%, 100%), which was maintained through 2010. This level of measles coverage was slightly higher than the national average of 98% in 2010.

Coverage of polio immunization fell from 99% in the early

1990s to 87% in 1997 (95% CI: 83%, 91%), after which coverage hovered around 90% through 2008. Polio coverage climbed to 93% in 2010 (95% CI: 84%, 98%), which was much higher than the national average of 81% and among the highest in Zambia for that year.

After the pentavalent vaccine was formally introduced in Masaiti in 2005, coverage increased to 50% in 2007 (95% CI: 43%, 57%) and 83% in 2010 (95% CI: 71%, 91%), far exceeding the national average of 67% and rising to among the highest levels in Zambia.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage dropped from 81% in the early 1990s to 17% in 2010 (95% CI: 3%, 47%), falling below the national average of 37%. ANC4 decreased throughout Zambia from 1990 to 2010, and the finding that Masaiti's levels of coverage fell more than 60 percentage points during this time is troubling.

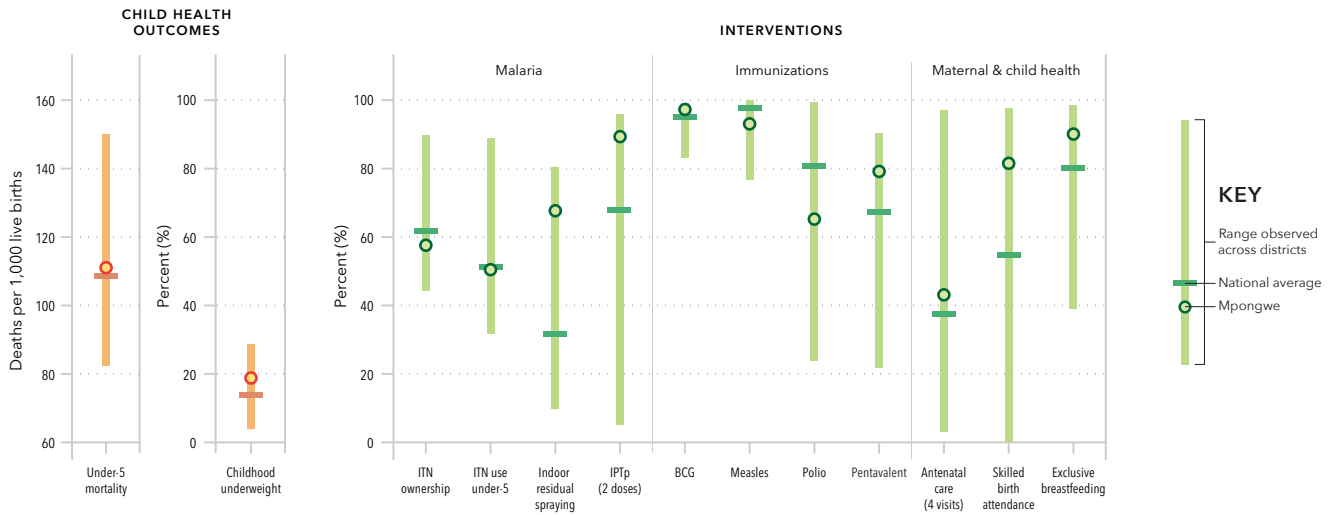
Skilled birth attendance declined sharply from 86% in 1990 (95% CI: 73%, 94%) to 34% in 1999 (95% CI: 19%, 53%), but rebounded to 86% in 2010 (95% CI: 60%, 98%). This level

of SBA coverage was well above the national average of 55% for 2010 and was among the highest in Zambia.

The proportion of children who were exclusively breastfed remained below 20% until 1998, after which coverage steadily climbed to 95% in 2010 (95% CI: 90%, 98%). This level of exclusive breastfeeding far exceeded the national average of 80% and was among the highest in the country for 2010.



Mpongwe



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

Mpongwe reduced its all-cause under-5 mortality, but the relative magnitude of the district's progress was fairly low. The proportion of children who were underweight in Mpongwe decreased between 1990 and 1995, but then stagnated at levels above the national average. Prioritizing ways to accelerate gains for child health outcomes should be considered.

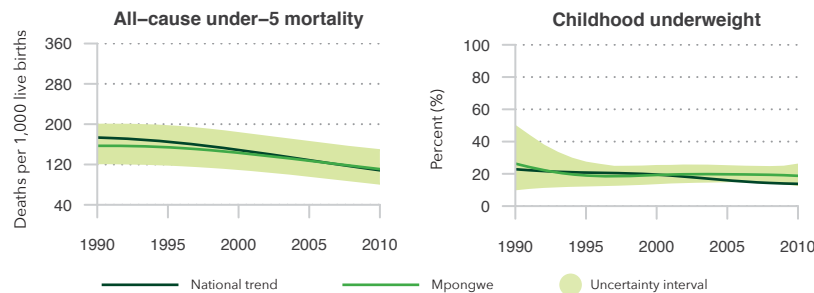
Mpongwe recorded some of the highest levels of IRS and IPTp2 in Zambia for 2010, and the district quickly expanded coverage of the pentavalent vaccine. High levels of BCG coverage were maintained over time, and exclusive breastfeeding exceeded the national average in 2010. Skilled birth attendance rebounded from substantial declines in coverage

during the 1990s, rising to among the highest levels in Zambia.

However, amidst these gains, some troubling trends were identified and warrant further attention. Measles coverage fell well below the national average in 2010, and the district experienced steep declines in ANC4 coverage in recent years.

In 2010, Mpongwe generally met or exceeded the national average across malaria interventions and maternal and child health interventions, but recorded less consistent results for immunizations. In comparison with the national average, Mpongwe showed slightly higher levels of mortality and much higher levels of underweight.

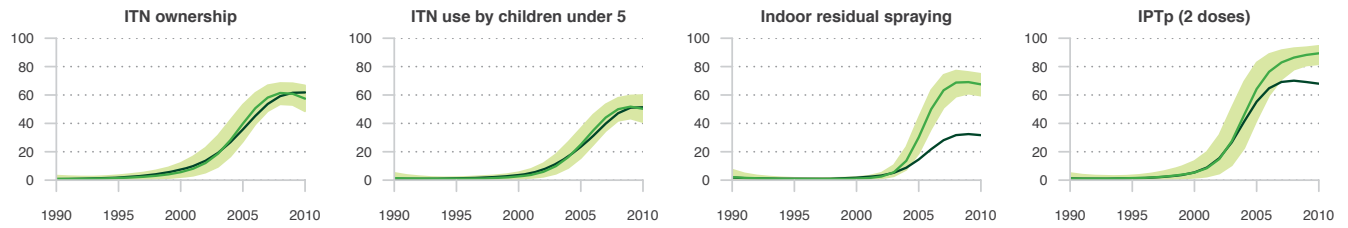
CHILD HEALTH OUTCOMES



From 1990 to 2010, Mpongwe recorded a reduction in all-cause under-5 mortality, dropping 29% from 157 deaths per 1,000 live births in 1990 (95% CI: 123, 199) to 111 in 2010 (95% CI: 82, 148); 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 decreased from 26% in 1990 (95% CI: 10%, 50%) to 19% in the mid-1990s. Underweight hovered around 20% for several years before declining to 19% again in 2008 (95% CI: 15%, 24%), and remaining at 19% through 2010. This level of childhood underweight was much higher than the national average of 14% in 2010, and the district's minimal progress during the 2000s is cause for concern.

MALARIA INTERVENTIONS



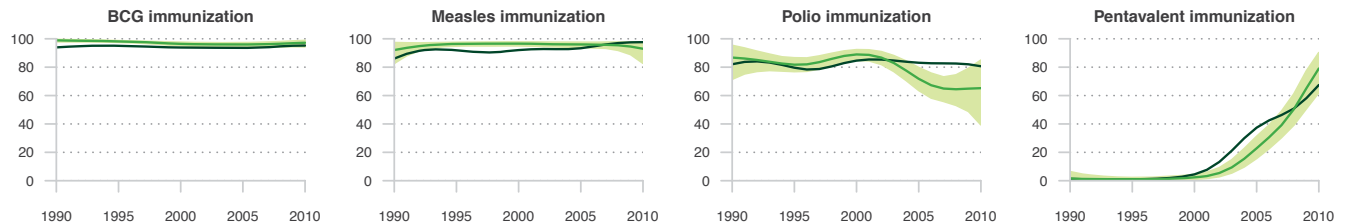
ITN ownership remained below 10% until 2002, after which coverage rapidly increased to 61% in 2008 (95% CI: 53%, 68%). Ownership slipped to 57% in 2010 (95% CI: 48%, 67%), which was lower than the national average of 62%.

ITN use by children under 5 years old rose to 52% in 2009 (95% CI: 43%, 60%), but slipped to 50% in 2010 (95% CI: 41%, 60%). This level of ITN use was comparable to the national average of 51% for 2010. The difference between ITN ownership and use (7 percentage points) was lower than what was observed nationally (11 percentage points) for 2010.

Mpongwe formally implemented IRS activities in 2008 and reached 69% of households that year (95% CI: 59%, 77%). Coverage dipped to 67% in 2010 (95% CI: 60%, 75%), but remained among the highest levels in Zambia for 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rapidly rose to 89% in 2010 (95% CI: 82%, 95%). This level of IPTp2 coverage far exceeded the national average of 68% for 2010 and was among the highest in Zambia.

IMMUNIZATIONS



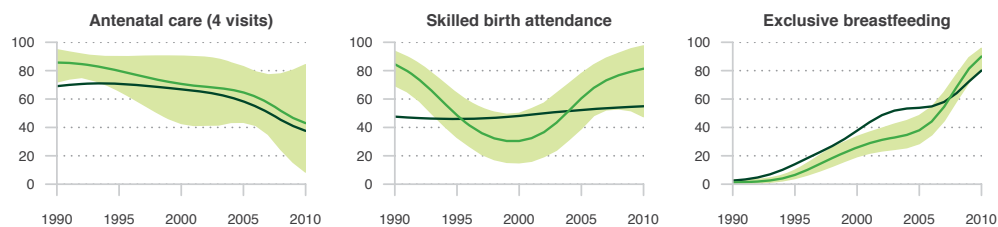
BCG coverage declined from 99% in the early 1990s to 96% in 2000 (95% CI: 95%, 97%) and remained at 96% through 2007. BCG immunization increased to 97% in 2008 (95% CI: 94%, 98%) and stayed at 97% through 2010, exceeding the national average of 95%.

Measles immunization climbed from 92% in 1990 (95% CI: 83%, 97%) to 97% in the mid-1990s. Coverage remained at 97% through 2001, but fell to 93% in 2010 (95% CI: 83%, 98%). This level of measles coverage was below the national average of 98% for 2010.

Coverage of polio immunization decreased from 87% in 1990 (95% CI: 71%, 95%) to 82% in the mid-1990s, after which coverage increased to 89% in early 2000s. Polio coverage then dropped to 65% in 2009 (95% CI: 49%, 79%) and remained at 65% through 2010. This level of polio coverage was much lower than the national average of 81% for 2010.

After the pentavalent vaccine was formally introduced in Mpongwe in 2005, coverage increased to 39% in 2007 (95% CI: 30%, 49%) and 79% in 2010 (95% CI: 62%, 90%), exceeding the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage continuously decreased from 86% in 1990 (95% CI: 72%, 95%) to 43% in 2010 (95% CI: 9%, 84%). While coverage in Mpongwe was higher than the national average of 37% in 2010, its levels remained quite low.

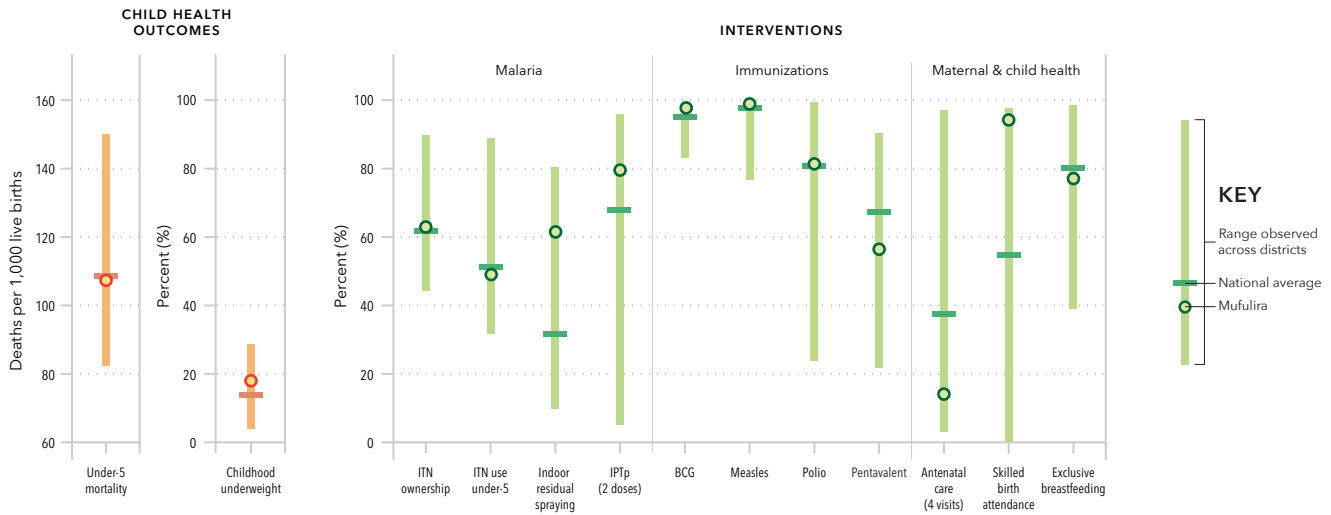
Skilled birth attendance decreased sharply from 85% in 1990 (95% CI: 70%, 93%) to a low of 30% in 1999 (95% CI: 16%, 49%), but rebounded to 81% in 2010 (95% CI: 48%, 97%),

rising to among the highest levels in Zambia. Mpongwe's recent gains are particularly notable given the district's low levels of coverage during the 2000s.

The proportion of children who were exclusively breastfed remained below 20% until 1999, after which coverage steadily increased to 90% in 2010 (95% CI: 81%, 96%), exceeding the national average of 80%.



Mufulira



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

Mufulira recorded a moderate decline in all-cause under-5 mortality between 1990 and 2010. On the other hand, levels of childhood underweight remained high and relatively unchanged during this time. Prioritizing ways to accelerate gains for child health outcomes should be considered.

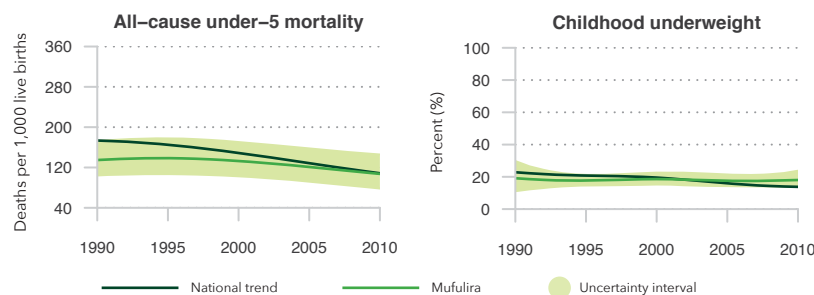
IPTp2 and IRS coverage increased substantially by 2010, with IRS rising to among the highest levels in Zambia. Skilled birth attendance increased to even higher levels, registering among the highest in Zambia for 2010. Exclusive breastfeeding neared the national average in 2010 after rebounding from a period of declines, and levels of BCG and measles immunization remained high over time.

However, amidst these gains, some troubling trends were

identified and warrant further attention. Polio coverage recently fell from very high levels of coverage. ANC4 coverage dropped to some of the lowest levels in Zambia, which is particularly worrisome given the district's high levels of ANC4 during the 1990s.

In 2010, Mufulira generally met or exceeded the national average across malaria and routine immunizations (with the exception of the pentavalent vaccine), but had widely variable results for maternal and child health interventions. In comparison with the national average, Mufulira showed similar levels of mortality and higher levels of underweight.

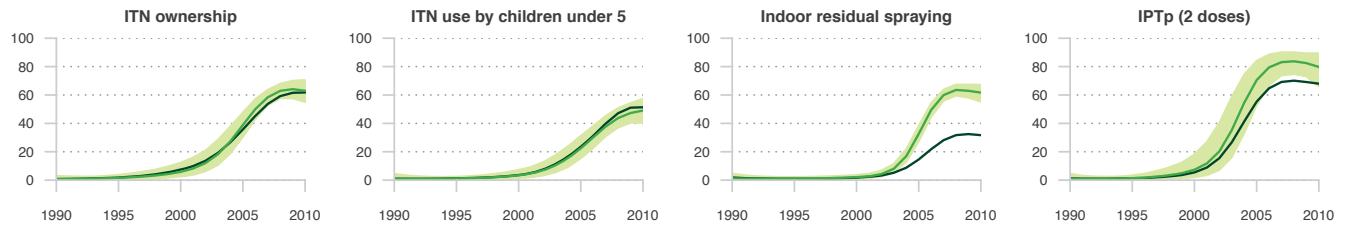
CHILD HEALTH OUTCOMES



From 1990 to 2010, Mufulira recorded a reduction in all-cause under-5 mortality, dropping 20% from 135 deaths per 1,000 live births in 1990 (95% CI: 104, 173) to 107 in 2010 (95% CI: 78, 146); 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).

The proportion of children who were underweight decreased from 19% in 1990 (95% CI: 11%, 30%) to 17% in the mid-2000s, but increased to 18% in 2008 (95% CI: 14%, 22%) and remained at 18% through 2010. This level of childhood underweight was higher than the national average of 14% in 2010, and the district's minimal progress during the 1990s is cause for concern.

MALARIA INTERVENTIONS



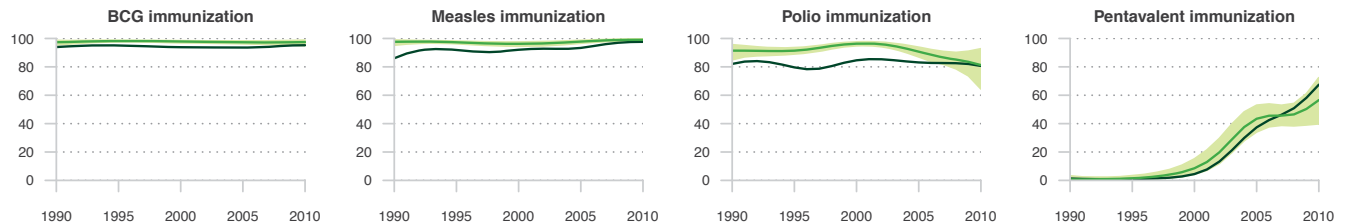
ITN ownership remained below 10% until 2002, after which coverage rapidly increased to 64% in 2009 (95% CI: 58%, 70%). Ownership slipped to 63% in 2010 (95% CI: 55%, 71%), which was comparable to the national average of 62%.

ITN use by children under 5 years old rose to 49% in 2010 (95% CI: 40%, 57%), falling slightly lower than the national average of 51%. The difference between ITN ownership and use (14 percentage points) was slightly higher than what was observed nationally (11 percentage points) for 2010.

Mufulira formally implemented IRS activities in 2004 and was one of the first 15 districts in Zambia to roll out IRS. IRS coverage peaked at 64% in 2008 (95% CI: 59%, 67%), slipping to 62% in 2010 (95% CI: 55%, 67%). Nonetheless, Mufulira had one of the highest levels of IRS in the country for 2010.

The proportion of pregnant women who received IPTp2 remained below 10% until 2001, after which coverage rapidly rose to 84% in 2008 (95% CI: 75%, 90%). IPTp2 coverage decreased to 80% in 2010 (95% CI: 66%, 90%), but still exceeded the national average of 68% for that year.

IMMUNIZATIONS



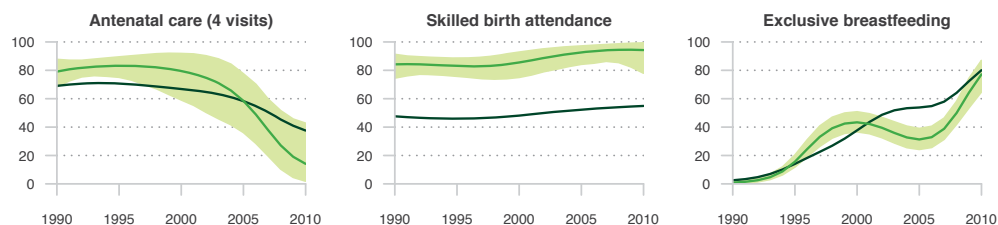
BCG coverage increased from 97% in 1990 (95% CI: 96%, 99%) to 98% one year later and remained at 98% through 2003. Coverage slipped to 97% in 2004 (95% CI: 96%, 98%) and stayed at 97% through 2010, far exceeding the national average of 95%.

Measles immunization remained at 98% through the mid-1990s, after which coverage declined to 96% during the late 1990s and early 2000s. Measles coverage climbed to 99% in 2007 (95% CI: 98%, 99%) and stayed at 99% through 2010, slightly exceeding the national average of 98%.

Coverage of polio immunization rose from 91% in the early and mid-1990s to 96% in the early 2000s, after which polio coverage dropped to 81% in 2010 (95% CI: 64%, 93%), equaling the national average.

After the pentavalent vaccine was formally introduced in Mufulira in 2005, coverage hovered around 46% through 2008 and then increased to 57% in 2010 (95% CI: 40%, 72%), falling below the national average of 67%. This level of pentavalent coverage was among the lowest in Zambia for 2010.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage increased to 83% in the mid-1990s and remained around 80% until 2001, after which coverage dropped sharply to 14% in 2010 (95% CI: 2%, 43%). This level of ANC4 was among the lowest in Zambia in 2010, and the finding that ANC4 fell nearly 70 percentage points since 1997 is quite troubling.

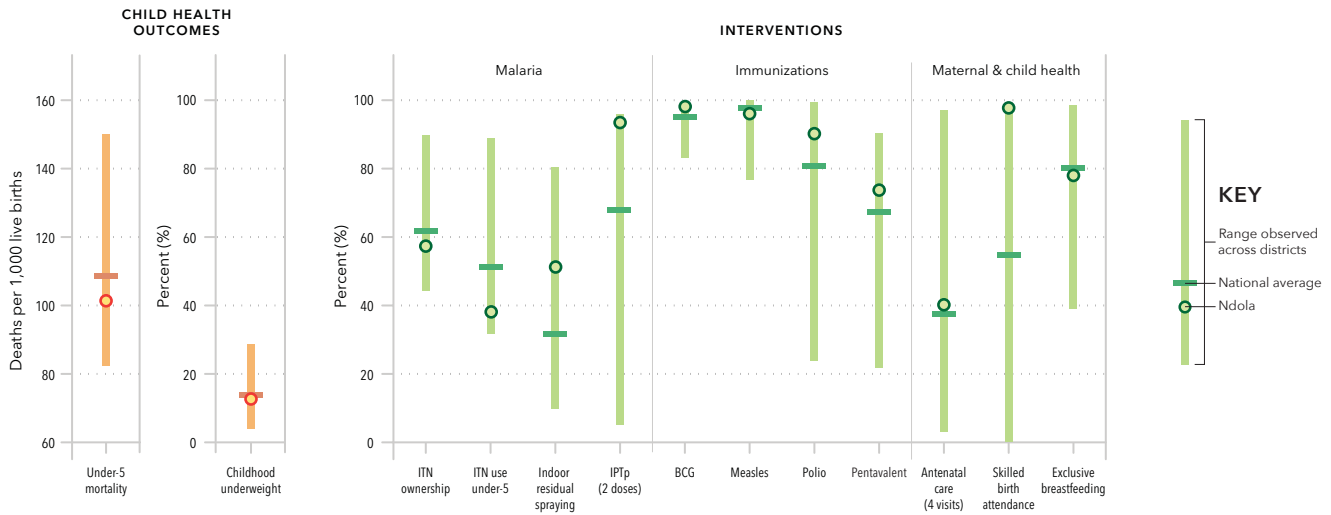
Skilled birth attendance gradually climbed from 84% in the early 1990s to 95% in 2009 (95% CI: 82%, 99%). SBA coverage fell slightly to 94% in 2010 (95% CI: 78%, 99%), but was

nonetheless among the highest levels in the country for that year.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage rose to 43% in 2000 (95% CI: 37%, 51%). Gains in coverage were reversed, with exclusive breastfeeding falling to 31% in 2005 (95% CI: 24%, 39%), but coverage rebounded to 77% in 2010 (95% CI: 65%, 87%). This level of exclusive breastfeeding was slightly lower than the national average of 80% for 2010.



Ndola



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

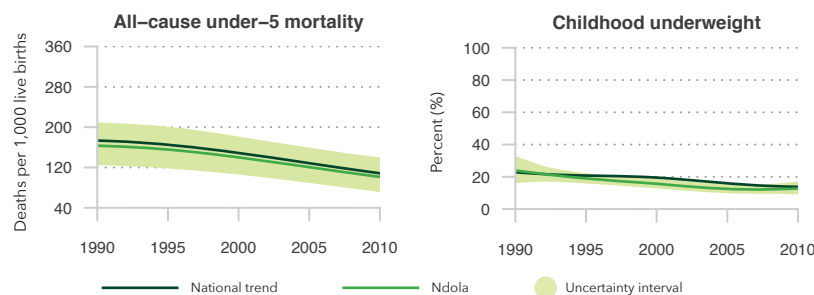
Ndola substantially reduced all-cause under-5 mortality and childhood underweight from 1990 to 2010; however, most progress in reducing underweight occurred in the 1990s. Prioritizing ways to further accelerate gains for child health outcomes should be considered.

IRS coverage far exceeded the national average in 2010, and Ndola's levels of IPTp2 were among the highest in Zambia for that year. The district increased levels of the pentavalent vaccine, with coverage exceeding the national average in 2010. Coverage of BCG immunization remained high over time, and Ndola steadily increased skilled birth attendance to among the highest levels in the country.

However, amidst these successes, some worrisome trends were identified and warrant further attention. ITN coverage remained consistently lower than national levels, and spraying coverage actually peaked in 2008. Measles coverage fell to among the lowest levels in Zambia for 2010. ANC4 dropped sharply during the late 2000s, which is troubling given the district's gains in coverage in the 1990s.

In 2010, Ndola generally met or exceeded the national average across routine immunizations and maternal and child health interventions, but performed less consistently for malaria interventions. In comparison with the national average, Ndola showed lower levels of mortality and similar levels of underweight.

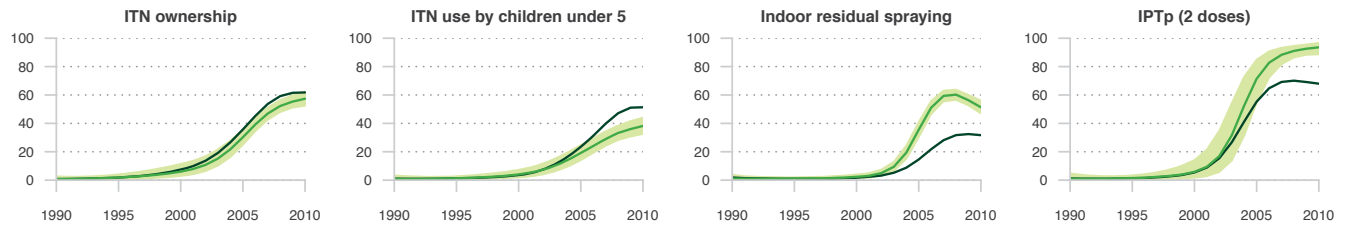
CHILD HEALTH OUTCOMES



From 1990 to 2010, Ndola recorded a significant reduction in all-cause under-5 mortality, dropping 38% from 163 deaths per 1,000 live births in 1990 (95% CI: 127, 207) to 101 in 2010 (95% CI: 73, 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 decreased from 24% in 1990 (95% CI: 17%, 32%) to 12% in 2005 (95% CI: 10%, 15%). Underweight remained at 12% through 2009, after which prevalence slightly increased to 13% in 2010 (95% CI: 10%, 17%), which was comparable to the national average of 14%.

MALARIA INTERVENTIONS



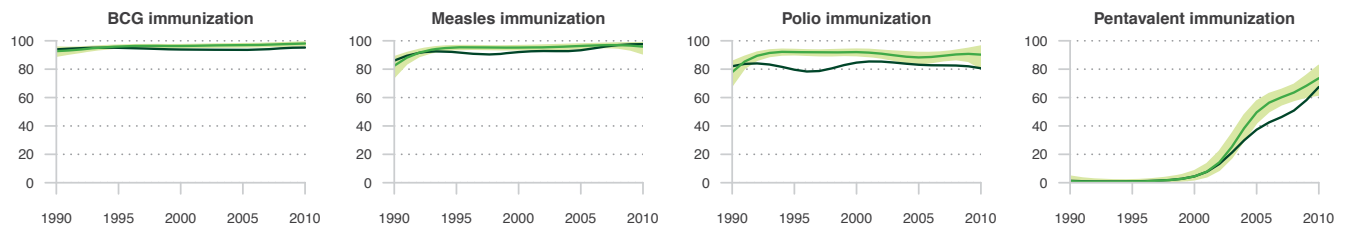
Levels of ITN ownership were below 10% until 2002, after which coverage rose to 57% in 2010 (95% CI: 52%, 62%), falling short of the national average of 62%.

ITN use by children under 5 gradually climbed to 38% in 2010 (95% CI: 33%, 44%), which was well below the national average of 51% and among the lowest in Zambia. The difference between ITN ownership and use (19 percentage points) was higher in Ndola than what was observed at the national level (11 percentage points) for 2010.

Ndola formally implemented IRS activities in 2003 and was one of the first 15 districts in Zambia to roll out IRS. Spraying peaked at 60% in 2008 (95% CI: 57%, 64%), after which coverage declined to 51% in 2010 (95% CI: 47%, 56%).

The proportion of pregnant women who received IPTp2 remained below 10% until 2002, after which coverage rose rapidly to 94% in 2010 (95% CI: 89%, 97%). This level of IPTp2 coverage far exceeded the national average of 68% for 2010 and was among the highest in the country.

IMMUNIZATIONS



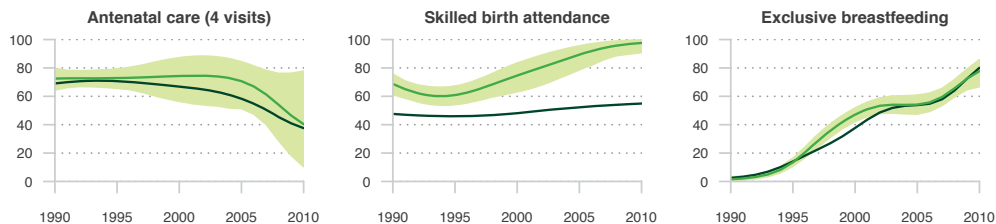
BCG coverage steadily increased from 93% in 1990 (95% CI: 89%, 95%) to 98% in 2008 (95% CI: 96%, 98%). BCG coverage remained at 98% through 2010, exceeding the national average of 95%.

Measles immunization climbed from 82% in 1990 (95% CI: 74%, 89%) to 97% in the mid-2000s, which was maintained until coverage dipped to 96% in 2010 (95% CI: 91%, 99%). This level of measles coverage was lower than the national average of 98% for 2010.

Coverage of polio immunization increased to 92% in 1994 (95% CI: 90%, 94%) and remained at 92% until 2001. Polio coverage wavered around 90% after 2001, and remained at 90% in 2010 (95% CI: 81%, 96%). This level of polio coverage exceeded the national average of 81% for 2010.

After the pentavalent vaccine was formally introduced in Ndola in 2005, coverage increased to 60% in 2007 (95% CI: 55%, 66%) and 74% in 2010 (95% CI: 62%, 83%), surpassing the national average of 67%.

MATERNAL AND CHILD HEALTH INTERVENTIONS



ANC4 coverage slightly increased from 72% in 1990 (95% CI: 64%, 80%) to 75% in 2002 (95% CI: 54%, 88%), but then fell to 40% in 2010 (95% CI: 10%, 78%). ANC4 dramatically decreased throughout Zambia from 1990 to 2010, and while coverage in Ndola was slightly higher than the national average of 37% in 2010, its levels remained quite low.

Skilled birth attendance steadily rose from 60% in 1994 (95% CI: 54%, 67%) to 98% in 2010 (95% CI: 91%, 100%), far exceeding the national average of 55%. This level of SBA cov-

erage was among the highest in Zambia for 2010, which is particularly laudable given that coverage remained at moderate levels during the 1990s.

The proportion of children who were exclusively breastfed remained below 20% until 1996, after which coverage climbed to 54% in 2003 (95% CI: 48%, 60%). Gains in coverage stalled for several years, but exclusive breastfeeding increased to 78% in 2010 (95% CI: 67%, 86%), falling slightly below the national average of 80%.