

# District-level medical and traditional circumcision coverage and unmet need among men aged 10-29 years in sub-Saharan Africa (Abstract #111272)

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## Introduction

### Background

- UNAIDS targets **90% male circumcision** (MC) coverage for 10-29 year olds by 2021 in 14 sub-Saharan Africa (SSA) priority countries [1]
- Substantial variation** across SSA in:
  - Traditional Male Circumcision (TMC) practises and
  - Voluntary Male Medical Circumcision (VMMC) implementation

### Aims

- Produce detailed **district-level circumcision coverage estimates** to:
  - Assess progress towards targets
  - Identify **remaining gaps** towards VMMC HIV prevention targets
- Understand variation in traditional and medical male circumcision (MMC) across SSA to support future VMMC planning

## Methods

### Data

- 120 household surveys conducted in 33 SSA countries, conducted between 2002-2019 (F1)
- Individual-level, self-reported circumcision:
  - Status (MC vs uncircumcised)
  - Type (MMC vs TMC)
  - Age at circumcision
- District-level populations from WorldPop [2]

#### Household surveys in each country

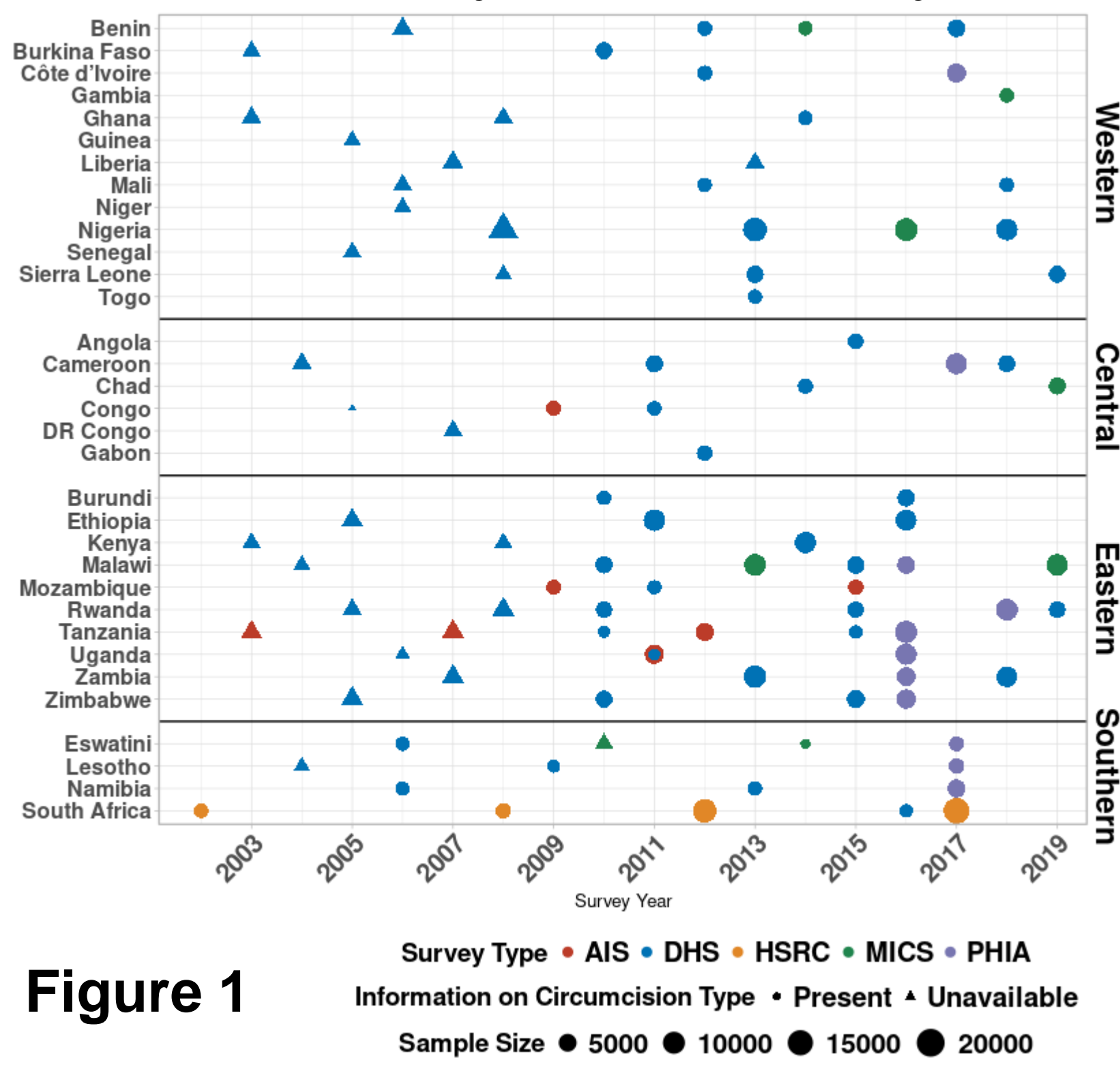


Figure 1

### Model

- Bayesian spatio-temporal, competing-risks, time-to-event model [3]
- Stratified by age, location & time
- Estimates MC, TMC and MMC Rates
- Projected assuming continuation of age-specific rates with probabilistic uncertainty
- Assume rate of TMC constant over time; time-varying rate of MMC estimated from survey data [3]

## References

[1] World Health Organization. A framework for voluntary medical male circumcision: Effective HIV prevention and a gateway to improved adolescent boys' and men's health in Eastern and Southern Africa by 2021, 2016. URL <https://apps.who.int/iris/bitstream/handle/10665/246234/WHO-HIV-2016.17-eng.pdf?sequence=1>.

[2] Linard, C., Gilbert, M., Snow, R.W., Noor, A.M. and Tatem, A.J., 2012, Population distribution, settlement patterns and accessibility across Africa in 2010, PLoS ONE, 7(2): e31743.

[3] Thomas, M. L. k.á. (2021) 'A multi-level model for estimating region-age-time-type specific male circumcision coverage from household survey and health system data in South Africa'. arXiv. doi: 10.48550/ARXIV.2108.09142.

## Results

### MC Coverage, 2010-2020

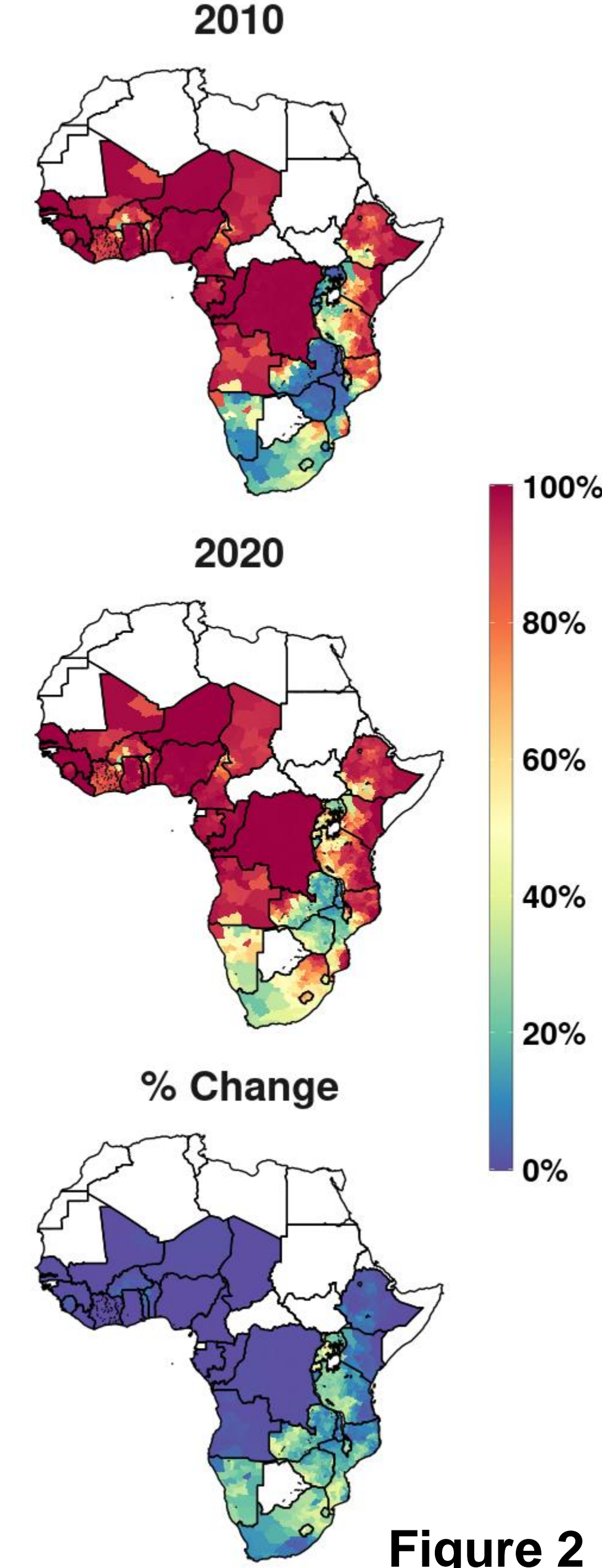


Figure 2

## 27.5m additional men require medical circumcision to reach 90% coverage in all 33 SSA countries

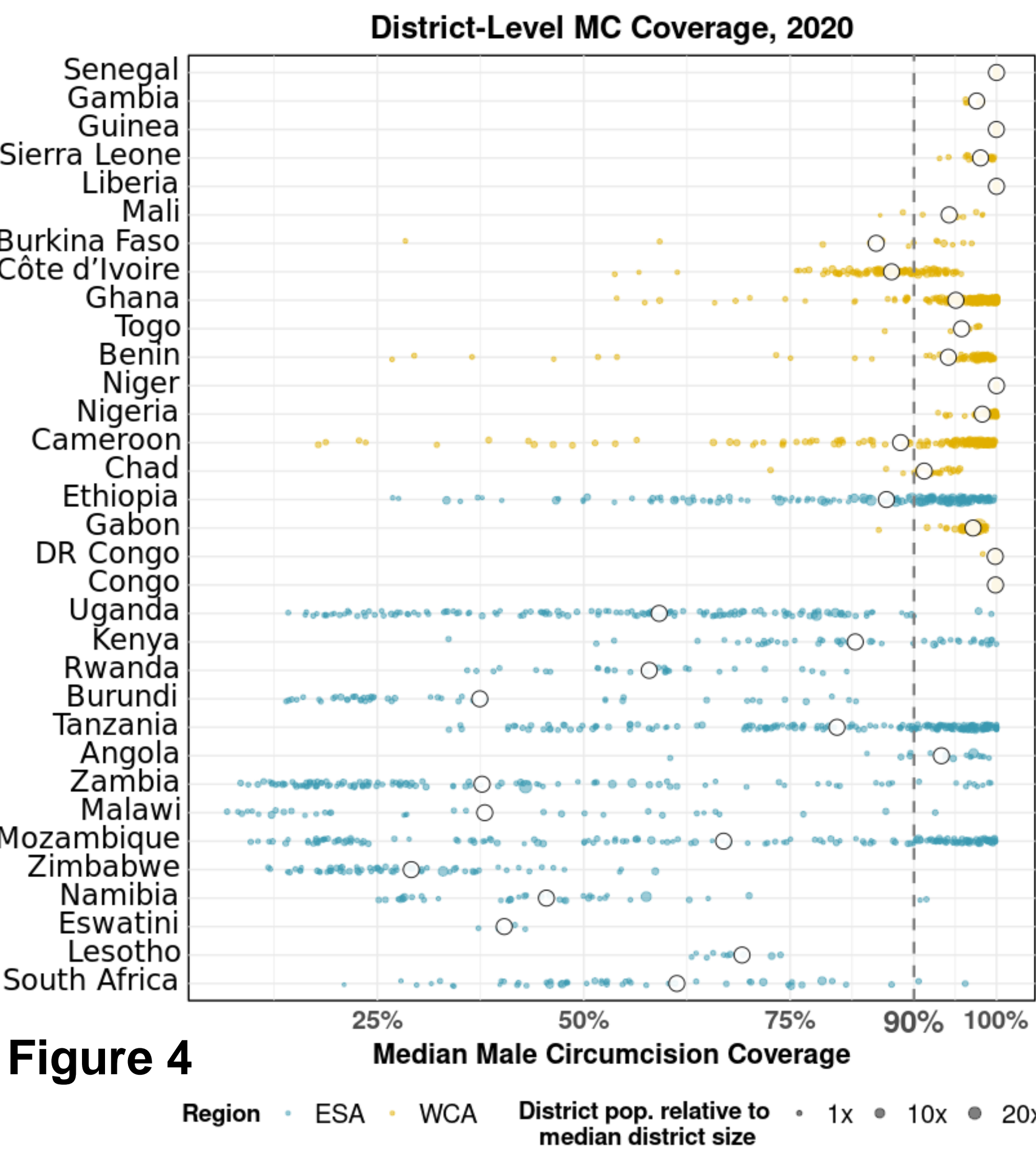


Figure 4

### UNAIDS VMMC Priority countries

- In 2020, **no countries** had reached the 90% MC coverage target set for 2021 (F5)
  - 19m MCs performed 2010-2020
  - 20m additional MCs required
- This belies large subnational variation:** 23% (14-32%) of priority country districts have achieved 90% MC by 2020 (F4)

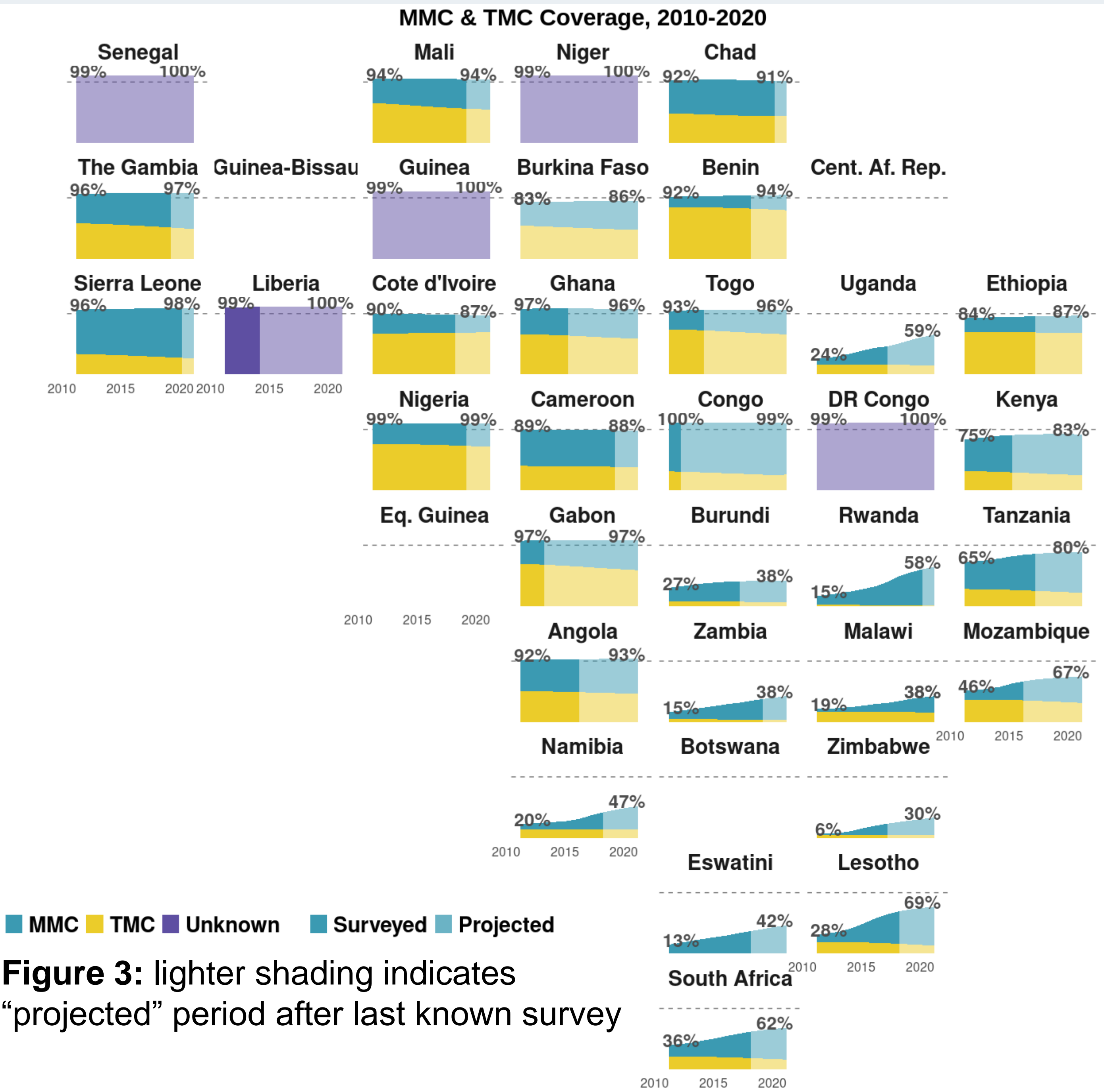


Figure 3: lighter shading indicates “projected” period after last known survey

### Progress, 2010-2020:

- 53.0 million (95% CI 49.5-58.6m) men circumcised
  - 31.7m (25.2-43.5m) MMCs
  - 11.3m (5.0-13.4m) TMCs
- Rwanda had the **largest total MC increase** of 43.3% (37.0-51.2%) from 14.8% to 58.1% (F2)
- Lesotho had the **largest MMC increase** of 47.0% (35.9-57.1%) from 10.5% to 57.5%. (F3)
- In 2020:**
  - Total MC coverage ranged from 29.8% (Zimbabwe) to 100% (Niger) (F2)
  - Within countries, median district MC range was 39.4%, largest variation in Zambia (8.7% to 98.9%) (F4)
  - The Congo had **highest MMC coverage:** 76.1%
  - Benin had **lowest MMC coverage:** 22.5%
  - Benin **highest TMC coverage:** 71.7%
  - Eswatini had the **lowest TMC coverage:** 0.9% (F3)

### UNAIDS VMMC Priority Countries Circumcision Coverage, 2020

Country	Male Circumcision Coverage	Medical Male Circumcision Coverage	Traditional Male Circumcision Coverage
Kenya	83.0% (77.4-90.0%)	60.6% (54.0-69.6%)	22.4% (20.4-23.6%)
Tanzania	80.4% (74.5-86.5%)	60.8% (54.5-67.5%)	19.7% (18.9-20.5%)
Lesotho	69.2% (58.0-79.9%)	57.5% (45.5-68.5%)	11.7% (10.9-12.5%)
Mozambique	67.3% (60.8-74.5%)	39.2% (32.0-48.0%)	28.1% (26.3-30.3%)
South Africa	61.5% (55.9-68.3%)	47.0% (41.0-54.0%)	14.5% (14.0-15.1%)
Uganda	59.1% (56.2-62.6%)	45.6% (42.6-49.3%)	13.5% (13.0-13.8%)
Rwanda	58.1% (51.4-66.4%)	56.9% (50.1-65.2%)	1.2% (1.1-1.3%)
Gambella Province (Ethiopia)	53.9% (47.7-60.7%)	26.5% (19.8-34.7%)	27.3% (22.7-31.7%)
Namibia	46.7% (37.5-62.1%)	34.7% (25.4-50.0%)	12.0% (11.4-12.6%)
Eswatini	41.6% (29.3-60.0%)	40.8% (28.4-59.3%)	0.9% (0.7-1.1%)
Zambia	38.3% (32.2-47.2%)	34.9% (28.6-43.9%)	3.4% (3.1-3.6%)
Malawi	38.1% (36.4-40.2%)	24.1% (22.3-26.2%)	14.0% (13.7-14.3%)
Zimbabwe	29.8% (19.5-49.1%)	26.2% (15.9-45.7%)	3.6% (3.3-3.8%)
Botswana			

Figure 5

## Conclusions

- Traditional and medical circumcision practices vary substantially between and within countries**
- VMMC programmes have made substantial, but uneven, progress towards MC targets**
- Granular district level data provide information for focusing further VMMC implementation**