

# Understanding differentials in district performance in reproductive health service coverage and quality in Rwanda

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Republic of Rwanda



Ministry of Health



Radboudumc



## Drones begin delivering blood in Rwanda

Country launches world's first national drone delivery service with help from a Silicon Valley startup

Oct 13, 2016

Rwanda has launched the world's first national drone delivery system, which will be used to deliver blood to patients in remote areas of the country. The drones, manufactured by California robotics company Zipline, will begin delivering blood to 21 transfusing facilities in the western part of Rwanda, where poor roads and healthcare infrastructure have often made it difficult to reach patients in need. Rwandan President Paul Kagame will formally announce the program at a ceremony in Kigali on Friday.

...

The hope is that the drone system can help reach people in desperate need of transfusions, including mothers suffering from postpartum haemorrhage, which is the leading cause of maternal mortality worldwide.

Postpartum haemorrhage

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# Rwanda

- 12.1 million inhabitants (2015)
- 30 districts, each with a district hospital that provides basic surgery, including emergency obstetric care
- referral hospitals in capital Kigali
- 1994 genocide



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## Health in Rwanda

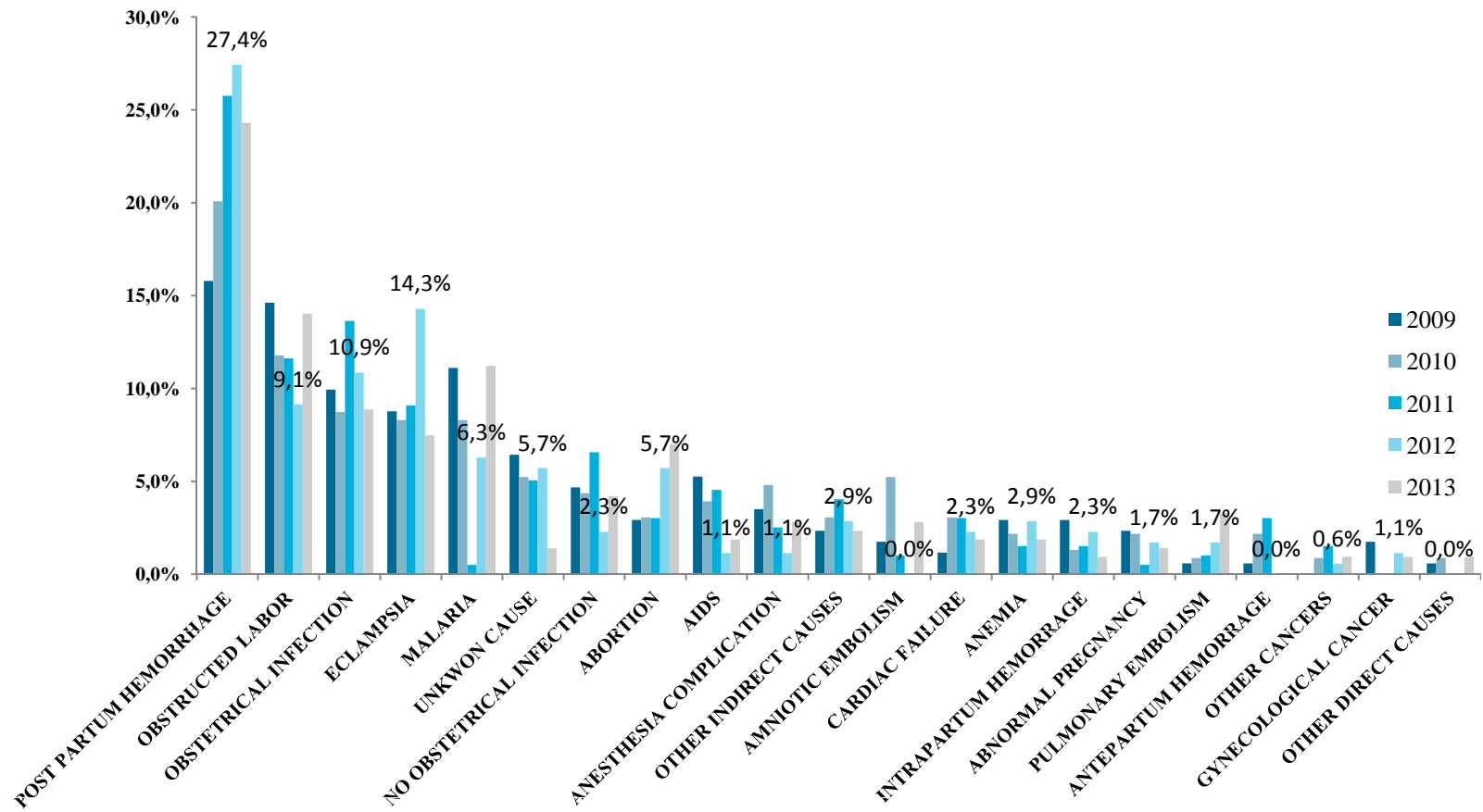
- One of only 4 countries\* that achieved MDG4 and 5
- Community health insurance (*mutuelles de santé*): coverage >90%
- Community health workers: 3 per ±800 inhabitants
- Performance based financing
- Leadership in health, government leadership in general.

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## Maternal health in Rwanda

- Maternal Mortality Ratio (MMR): decreased from 1071 per 100 000 live-births in 2000, to 210 in 2015 (DHS).
- Hospital deliveries: increased from 27% to 91% over same period.
- One third of all pregnant women attending antenatal consultation at least 4 times.
- ART for pregnant and breastfeeding women who are HIV+
- Prevention of cervical cancer.
- Yet: large variation among districts; little known about adolescents.

# Causes of maternal death in Rwanda



# Related studies



WOTRO Science for Global Development

## BMJ Open Maternal death audit in Rwanda 2009–2013: a nationwide facility-based retrospective cohort study

Sayinzoga and Bijlmakers *BMC Health Services Research* (2016) 16:123  
DOI 10.1186/s12913-016-1351-4

BMC Health Services Research

RESEARCH ARTICLE

Open Access

Felix Sayinzoga,<sup>1</sup> Leon Bijlmal  
Fidèle Ngabo,<sup>1</sup> Koos van der

### Drivers of improved health sector performance in Rwanda: a qualitative view from within



Felix Sayinzoga<sup>1</sup> and Leon Bijlmakers<sup>2\*</sup>

**To cite:** Sayinzoga F, Bijlmakers L, van Dillen J, et al. Maternal death audit in Rwanda 2009–2013: a nationwide facility-based retrospective cohort study. *BMJ Open* 2016;6:e009734. doi:10.1136/bmjopen-2015-009734

#### ABSTRACT

**Objective:** Presenting the results of 5 ye implementing health facility-based matern audits in Rwanda, showing maternal deat classification, identification of substandar factors that have contributed to death, an recommendations for quality improvemen and obstetric care

#### Abstract

**Background:** Rwanda has achieved great improvements in several key health indicators, including maternal mortality and other health outcomes. This raises the question: what has made this possible, and what makes Rwanda so unique?

**Methods:** We describe the results of a web-based survey among district health managers in Rwanda who gave their personal opinions on the factors that drive performance in the health sector, in particular those that determine maternal health service coverage and outcomes. The questionnaire covered the six health systems building blocks that make up the WHO framework for health

Chersich et al. *Globalization and Health* (2016) 12:52  
DOI 10.1186/s12992-016-0189-1

Globalization and Health

Chersich et al. *Globalization and Health* (2016) 12:35  
DOI 10.1186/s12992-016-0172-x

Globalization and Health

RESEARCH

Open Access

### Mapping of research on maternal health interventions in low- and middle-income countries: a review of 2292 publications between 2000 and 2012



Matthew Chersich<sup>1,2\*</sup>, Duane Blaauw<sup>2</sup>, Mari Dumbaugh<sup>3,4</sup>, Loveday Penn-Kekana<sup>2,5</sup>, Siphwe Thwala<sup>2</sup>, Leon Bijlmakers<sup>6</sup>, Emily Vargas<sup>7,8</sup>, Elinor Kern<sup>9</sup>, Josephine Kavanagh<sup>2</sup>, Ashar Dhana<sup>2</sup>, Francisco Becerra-Posada<sup>9</sup>, Langelihle Mlotshwa<sup>2,4</sup>, Victor Becerril-Montekio<sup>8</sup>, Priya Mannava<sup>10</sup>, Stanley Luchters<sup>10,11</sup>, Minh Duc Pham<sup>10</sup>, Anayda Gerarda Portela<sup>1,2</sup> and Helen Rees<sup>1,3</sup>

Pagina 7

#### Abstract

**Background:** Progress in achieving maternal health goals and the rates of reductions in deaths from individual conditions have varied over time and across countries. Assessing whether research priorities in maternal health align with the main causes of mortality, and those factors responsible for avoidable health systems, such as

Footman et al. *Globalization and Health* 2014, 10:72  
http://www.globalizationandhealth.com/content/10/1/72



RESEARCH

Open Access

### A systematic mapping of funders of maternal health intervention research 2000–2012

Katharine Footman<sup>1\*</sup>, Matthew Chersich<sup>2,3,4</sup>, Duane Blaauw<sup>2</sup>, Oona MR Campbell<sup>1</sup>, Ashar Dhana<sup>2</sup>, Josephine Kavanagh<sup>5</sup>, Mari Dumbaugh<sup>6</sup>, Siphwe Thwala<sup>2</sup>, Leon Bijlmakers<sup>7</sup>, Emily Vargas<sup>8</sup>, Elinor Kern<sup>9</sup>, Francisco Becerra<sup>9</sup> and Loveday Penn-Kekana<sup>1,2</sup>

#### Abstract

**Background:** The priorities of research funding bodies govern the research agenda, which has important implications for the provision of evidence to inform policy. This study examines the research funding landscape for maternal health interventions in low- and middle-income countries (LMICs).

**Methods:** This review draws on a database of 2340 academic papers collected through a large-scale systematic mapping of research on maternal health interventions in LMICs published from 2000–2012. The names of funders acknowledged on each paper were extracted and categorised into groups. It was noted whether support took a specific form, such as staff fellowships or grants. Variations between funder types across regions and topics of

RESEARCH

Open Access

### Local and foreign authorship of maternal health interventional research in low- and middle-income countries: systematic mapping of publications 2000–2012



Matthew F. Chersich<sup>1,2,3\*</sup>, Duane Blaauw<sup>2</sup>, Mari Dumbaugh<sup>4,5</sup>, Loveday Penn-Kekana<sup>6</sup>, Ashar Dhana<sup>2</sup>, Siphwe Thwala<sup>2</sup>, Leon Bijlmakers<sup>7</sup>, Emily Vargas<sup>8,9</sup>, Elinor Kern<sup>9</sup>, Francisco Becerra-Posada<sup>10</sup>, Josephine Kavanagh<sup>2</sup>, Priya Mannava<sup>11</sup>, Langelihle Mlotshwa<sup>2,5</sup>, Victor Becerril-Montekio<sup>9</sup>, Katharine Footman<sup>9</sup> and Helen Rees<sup>1,12</sup>

#### Abstract

**Background:** Researchers in low- and middle-income countries (LMICs) are under-represented in scientific literature. Mapping of authorship of articles can provide an assessment of data ownership and research capacity in LMICs over time and identify variations between different settings.

**Methods:** Systematic mapping of maternal health interventional research in LMICs from 2000 to 2012, comparing country of study and of affiliation of first authors. Studies on health systems or promotion; community-based

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## Research questions

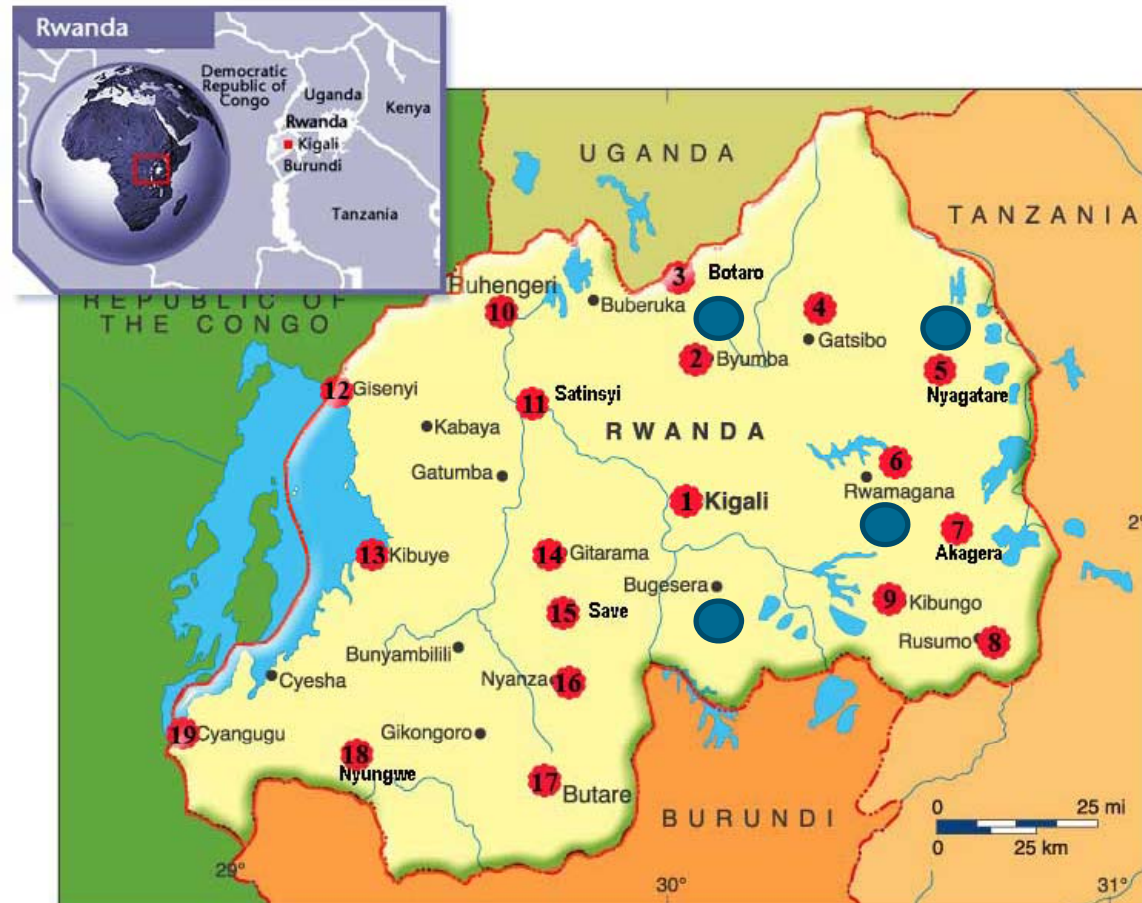
- To what extent can adolescent pregnancies and the RH services available for adolescents explain the observed differences in district performance in Rwanda?
- What determines the effective use of sexual and reproductive health services by adolescents?



# Study sites

## Districts

- Bugesera
- Gicumbi
- Nyagatare
- Rwamagana



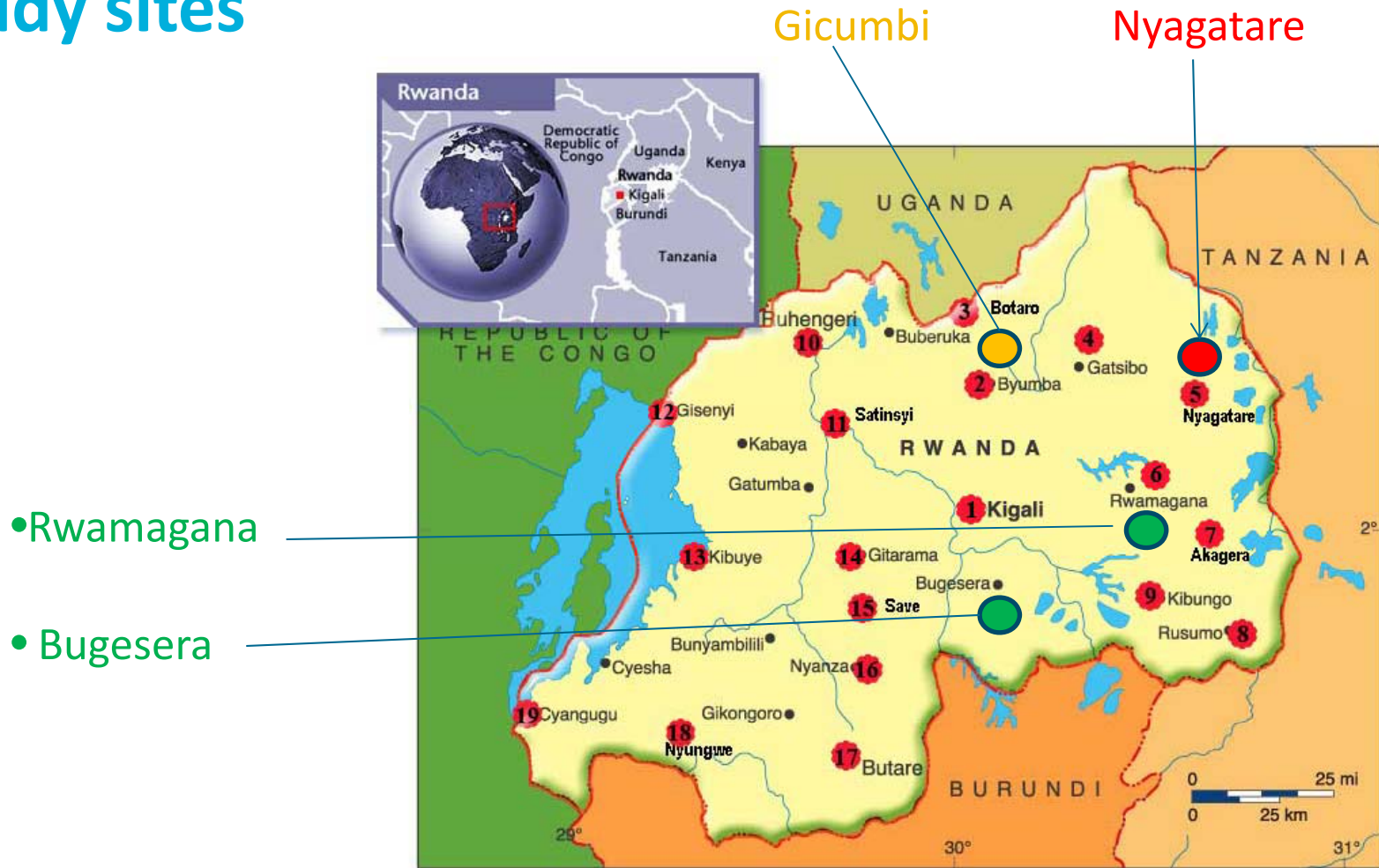
# Ranking of districts

**Table 1: District scores and rankings on selected maternal health indicators in 2013 and 2014**

|  |                   | Bugesera district | Gicumbi district | Nyagatare district | Rwamagana district | National average |
|--|-------------------|-------------------|------------------|--------------------|--------------------|------------------|
| <i>Selected coverage indicators</i>                |                   |                   |                  |                    |                    |                  |
| ANC 4 standard visits                              | 2013 Score (rank) | 42% (9)           | 27% (20)         | 22% (24)           | 62% (3)            | <b>35%</b>       |
|  | 2014 Score (rank) | 45% (10)          | 23% (27)         | 28% (21)           | 55% (4)            | <b>38%</b>       |
| Deliveries at home                                 | 2013 Score (rank) | 4.5% (17)         | 3.1% (11)        | 9.1% (28)          | 4.4% (15)          | <b>4.5%</b>      |
|  | 2014 Score (rank) | 4.0% (17)         | 3.7% (14)        | 8.2% (29)          | 3.5% (13)          | <b>3.9%</b>      |
| PNC new registrations                              | 2013 Score (rank) | 65% (11)          | 60% (18)         | 63% (13)           | 63% (14)           | <b>58%</b>       |
|  | 2014 Score (rank) | 65% (16)          | 72% (8)          | 64% (17)           | 55% (24)           | <b>61%</b>       |
| <b>Overall rank 2013 for 5 coverage indicators</b> |                   | <b>4</b>          | <b>12</b>        | <b>27</b>          | <b>7</b>           |                  |
| <b>Overall rank 2014 for 5 coverage indicators</b> |                   | <b>5</b>          | <b>12</b>        | <b>24</b>          | <b>13</b>          |                  |
| <i>Selected process indicators</i>                 |                   |                   |                  |                    |                    |                  |
| ANC registrations screened for anaemia             | 2013 Score (rank) | 22% (26)          | 50% (3)          | 24% (25)           | 42% (9)            | <b>34%</b>       |
|  | 2014 Score (rank) | 22% (26)          | 63% (6)          | 38% (20)           | 92% (1)            | <b>44%</b>       |
| ANC TT2 to 5                                       | 2013 Score        | 66%               | 67%              | 50%                | 70%                | <b>74%</b>       |



# Study sites



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# Qualitative methods

## Focus groups at district hospitals and health centres

- Health staff
- DHMT members
- CHW, volunteers

## Focus groups in community (2 districts):

- Adolescents



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# Results

1. Enablers
2. Barriers
3. Unique factors that explain variation in performance
4. Adolescents

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# 1. Enabling factors

- Measures to stimulate service demand and supply  
Community health workers
- Interconnectedness of actors within health system  
Vertical as well as horizontal
- Local innovations, appropriate use of technologies  
Rapid SMS, WhatsApp group 'Health team Rwamagana'
- Strive for excellence  
Pride, PBF

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## 2. Barriers

- Population density, overcrowding of facilities
- Geographic barriers
- Serving mobile / displaced populations
- Service quality compromised, by
  - inadequate skills mix
  - inadequate infrastructure (water supply, med.equipment)
  - essential supplies (blood)
  - low performance of health insurance scheme.

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### 3. Unique factors that explain variation in performance

- Presence of a nursing school (in Rwamagana and Gicumbi)
- Local innovators/leaders (Rwamagana)
- ‘Ingobyi’, community solidarity (in Bugesera).



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## What's special among adolescents?

- Geographical access, financial capacity to travel
- Parental consent / Acceptability of RH consultations for youngsters
- Privacy

Youth friendly centres preferred over a youth corner at health centres.

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## Discussion

### Service quality, quality and quality

- Study completed on maternal near-miss events
- Basis for routine auditing of maternal near-miss events nation-wide

Key ingredients: Skilled workforce & Accountability

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## Dissemination, valorisation

- Health districts themselves, incl district authorities
- Ministry of Health HQ, through the PI = Head of MCH
  - input for the MCH Technical Working Group
  - inclusion into routine support & supervision of districts
- Journal publications, PhD dissertation.

Global Health Policy  
and Health Systems  
Research programme



WOTRO Science for Global Development

**Antenatal and maternal health: leadership and dialogue are key**

Accelerate

Burundi & DR Congo

MHSAR

Socialab

**Health financing: the road towards universal health coverage**

CBHI

COHEISION

**Community empowerment: "Outsiders, step back!"**

CoHeRe

MEPR