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Botswana National Maternal Mortality Reduction Initiative

Improving Measurement and Quality: Maternal Death Surveillance and Response in Botswana

Background

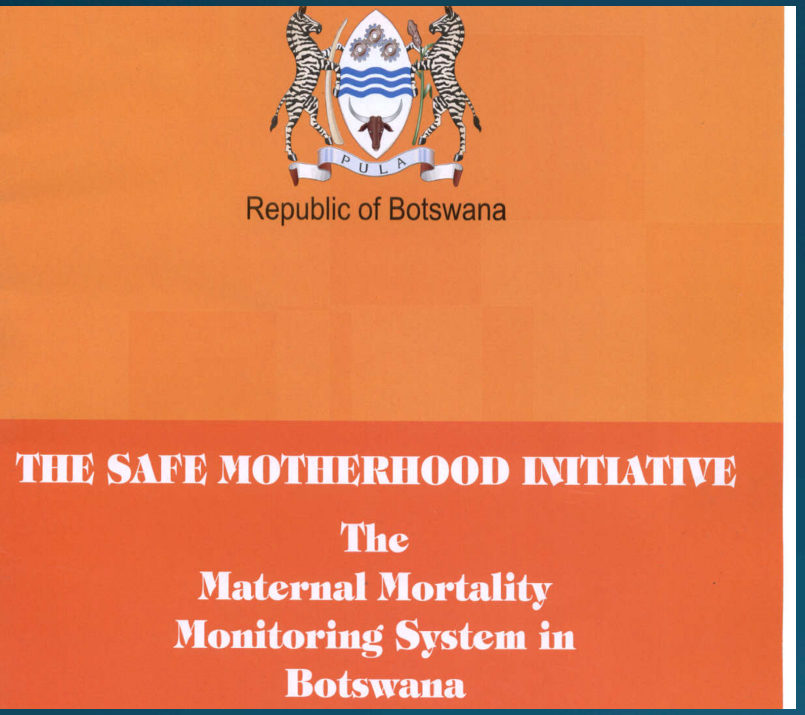
Systematic Maternal Mortality Audits since 1990

- Botswana initiated The Safe Motherhood Initiative
- Maternal audits are conducted internally by facility-based personnel and by an external auditors by the National Maternal Mortality Audit Committee (NMMAC)

Quality Improvement Approach since 2013

- Botswana implemented the Maternal Mortality Reduction Initiative in 90% of facilities providing maternity services in the country

Maternal Mortality Monitoring System in Botswana



Internal Audits (Institutional)

Reporting:

- Institutional Committees send a summary report of death to Clinical Services MOH within 24 hours
- They send Confidential Form and patient's records to the SRH Department-MOH within 7 days

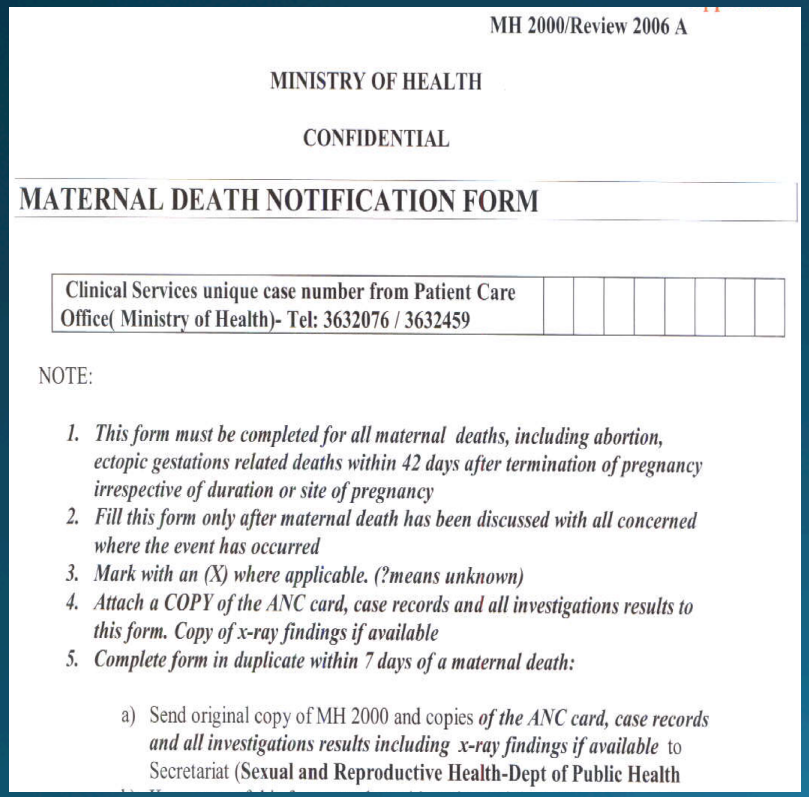
External Audits (National maternal Mortality Audit Committee)

- Compile and review confidential forms , analyze data and elaborate annual reports.
- The NMMAC audits each maternal death and provides targeted recommendations to improve health services, management of referral and to provide information to clinic/hospital staff and the community.

Maternal Audit reporting system

Internal audit: Confidential notification form

External audit: Maternal audit review form



MH 2000/Review 2006 A

MINISTRY OF HEALTH

CONFIDENTIAL

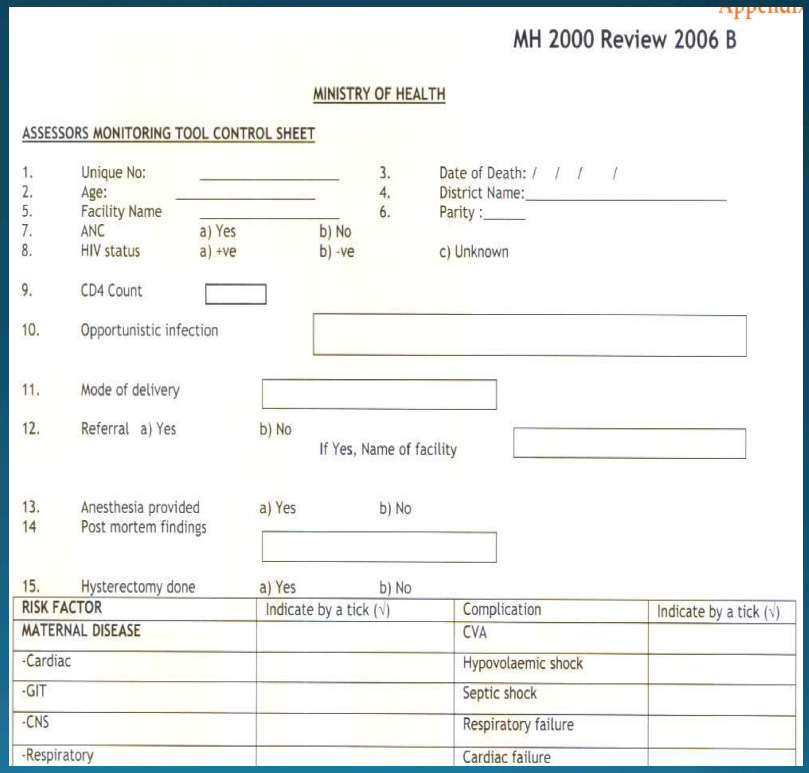
MATERNAL DEATH NOTIFICATION FORM

Clinical Services unique case number from Patient Care Office(Ministry of Health)- Tel: 3632076 / 3632459									

NOTE:

1. *This form must be completed for all maternal deaths, including abortion, ectopic gestations related deaths within 42 days after termination of pregnancy irrespective of duration or site of pregnancy*
2. *Fill this form only after maternal death has been discussed with all concerned where the event has occurred*
3. *Mark with an (X) where applicable. (?means unknown)*
4. *Attach a COPY of the ANC card, case records and all investigations results to this form. Copy of x-ray findings if available*
5. *Complete form in duplicate within 7 days of a maternal death:*

   a) Send original copy of MH 2000 and copies *of the ANC card, case records and all investigations results including x-ray findings if available* to Secretariat (**Sexual and Reproductive Health-Dept of Public Health**



MH 2000 Review 2006 B

MINISTRY OF HEALTH

ASSESSORS MONITORING TOOL CONTROL SHEET

1. Unique No: _____
2. Age: _____
3. Date of Death: / / / /
4. District Name: _____
5. Facility Name _____
6. Parity : _____
7. ANC a) Yes b) No
8. HIV status a) +ve b) -ve c) Unknown
9. CD4 Count
10. Opportunistic infection
11. Mode of delivery
12. Referral a) Yes b) No
    If Yes, Name of facility
13. Anesthesia provided a) Yes b) No
14. Post mortem findings
15. Hysterectomy done a) Yes b) No

RISK FACTOR	Indicate by a tick (√)	Complication	Indicate by a tick (√)
MATERNAL DISEASE		CVA	
-Cardiac		Hypovolaemic shock	
-GIT		Septic shock	
-CNS		Respiratory failure	
-Respiratory		Cardiac failure	

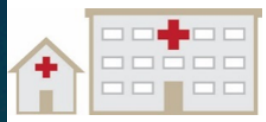
Maternal Mortality Reduction Initiative (MMRI)

- MOH implemented in 2013 the MMRI with technical support from USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project
- Aim: reduce maternal deaths by identifying gaps in the health system and implementing improvements in a timely and efficient way.
- Topic areas for improvement were informed by the MOH's 2007-2011 Maternal Mortality Audit Report

- Comprises of a National Coordinator and 12 Regional Coordinators
- Regional Coordinators surpervise 2-3 Health Districts
- Functional Units in each Health District are QI committees
- QI committes work in Health facilities and ensure compliance to Health standards, work with facilities to identify problems and fabricate local solutions to these problems, data collection including process and outcome issues
- Continuous Quality Improvement

Scale of MMRI Work in Botswana

All Health districts



122 facilities

88 QI teams

~41,600 births out of ~ 52,000 (80%) births (2014)

Quality Improvement Aims:

- Aim 1: Decrease Post Partum Haemorrhage (PPH) incidence and case fatality rate through improved PPH prevention (AMTSL), detection, and case-management
- Aim 2: Decrease eclampsia incidence and case fatality through improved intra- and post-partum early detection and case management of severe pre-eclampsia and eclampsia.
- Aim 3: Decrease mortality and morbidity due to post-abortion complications through improved prevention, early detection, and management of abortion complications.

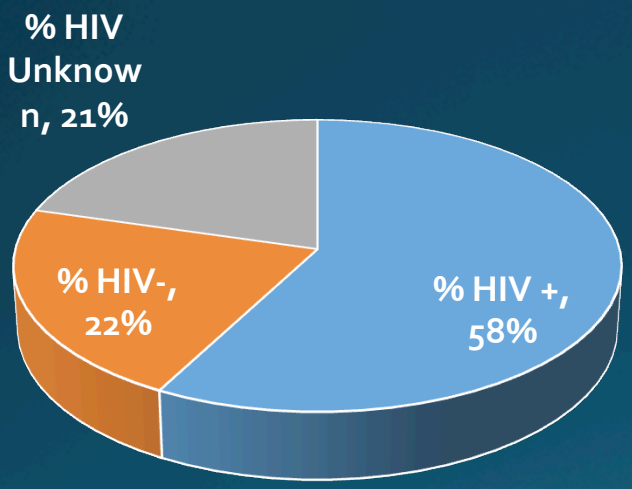
MMRI Data collection, reporting and analysis tools (e-MMRI)

MMRI Data Collection and Reporting Tools

TOOLS	Individual Paper form		Consolidated paper form		Electronic tools	
	MMRI 1	MMRI 3	MMRI 2	MMRI 4	ANC e-MMRI	E-MMRI
Type of data	ANC	Labour	ANC	Labour	ANC	(ANC) Labour
Source	Obstetric record ANC register	Obstetric record Maternity register Abortion care register and patient's files	Individual paper form ANC register	Individual paper form Maternity register Abortion care register	Consolidated paper forms	Consolidated paper forms
Location	Health clinics Maternities Hospitals	Maternities Hospitals	Health clinics Maternities Hospitals	Maternities Hospitals	Health clinics Maternities Hospitals	Health clinics Maternities Hospitals
Responsible	Nurse	Nurse/ Midwife	Nurse	Nurse/ Midwife	Midwife Coordinator	Midwife Coordinator
Periodicity	Daily	Daily/weekly	Monthly	Monthly	Monthly	Monthly

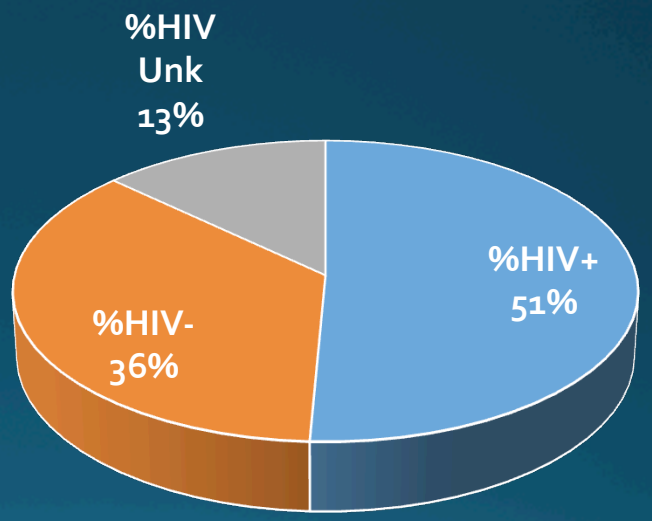
Results. HIV status

HIV status in maternal deaths 2007-2011. N=346 deaths



HIV +: 47% receiving HAART, 39% no HAART and 28% Unknown

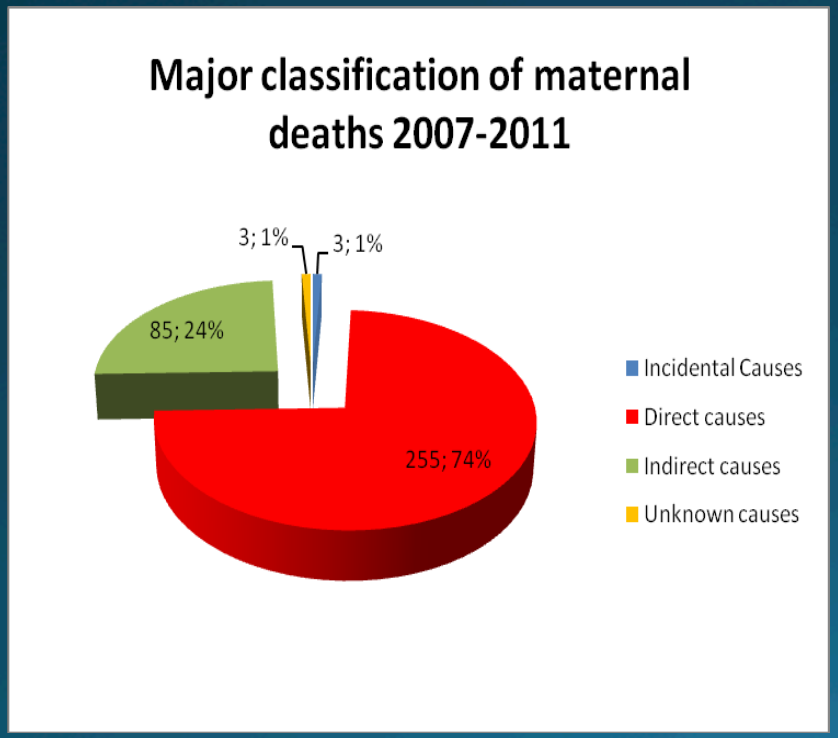
HIV status in maternal deaths 2014. N=69 deaths



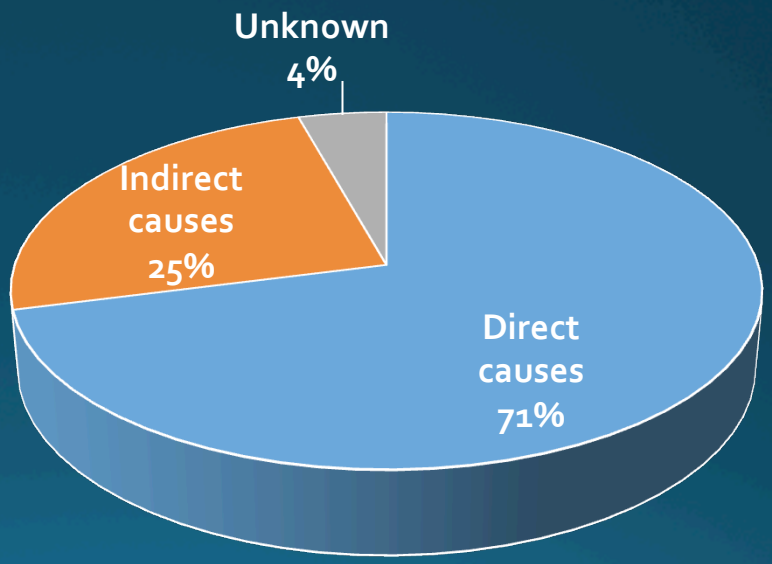
HIV +: 51% receiving HAART, 31% no HAART and 17% Unknown

Results. Major classification of maternal deaths

Classification of maternal deaths 2007-2011 (N= 346 deaths)

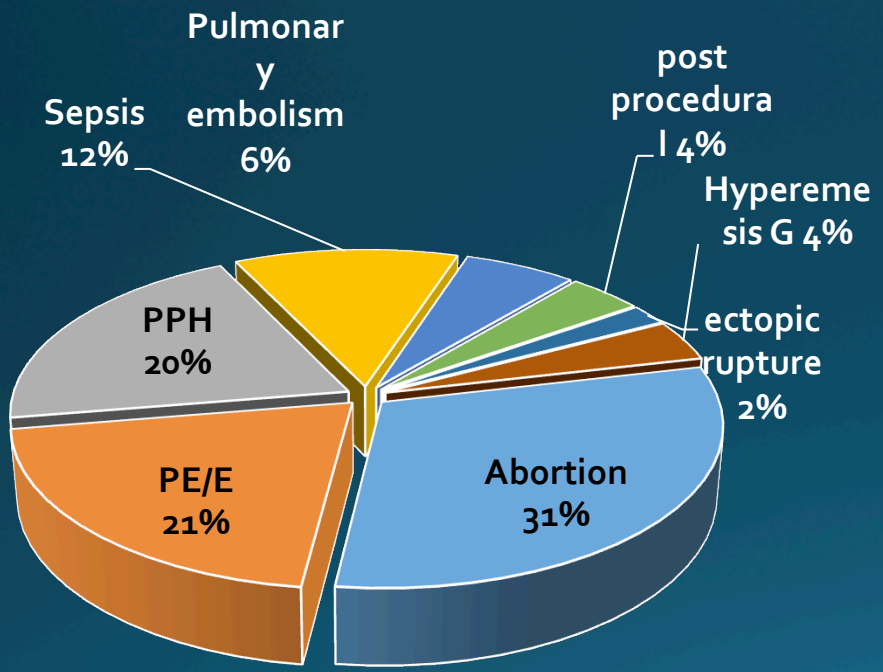


Classification of maternal deaths 2014 (N=69 deaths)

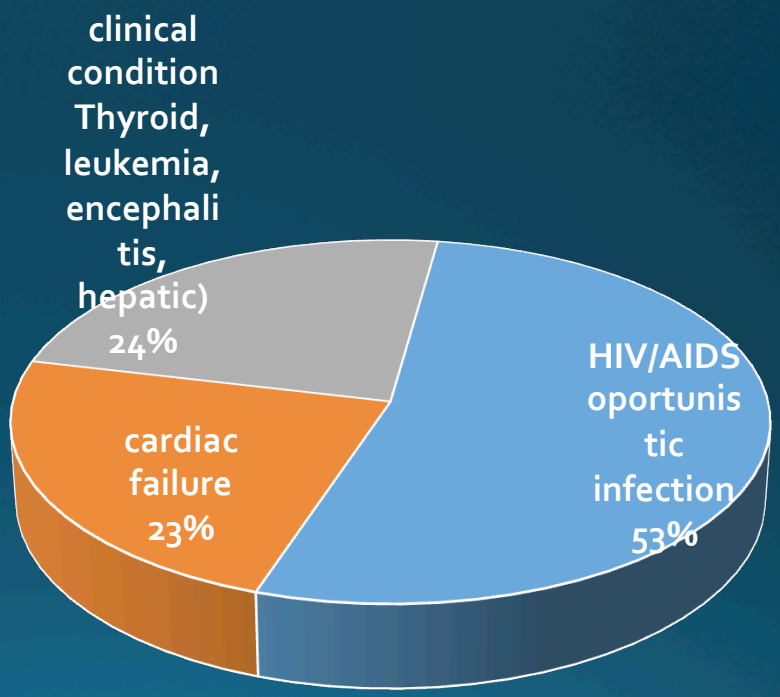


Results. Causes of maternal death, 2014 (N= 69 deaths)

Direct causes of death :71%



Indirect causes of death :25%



Transition in maternal death causes

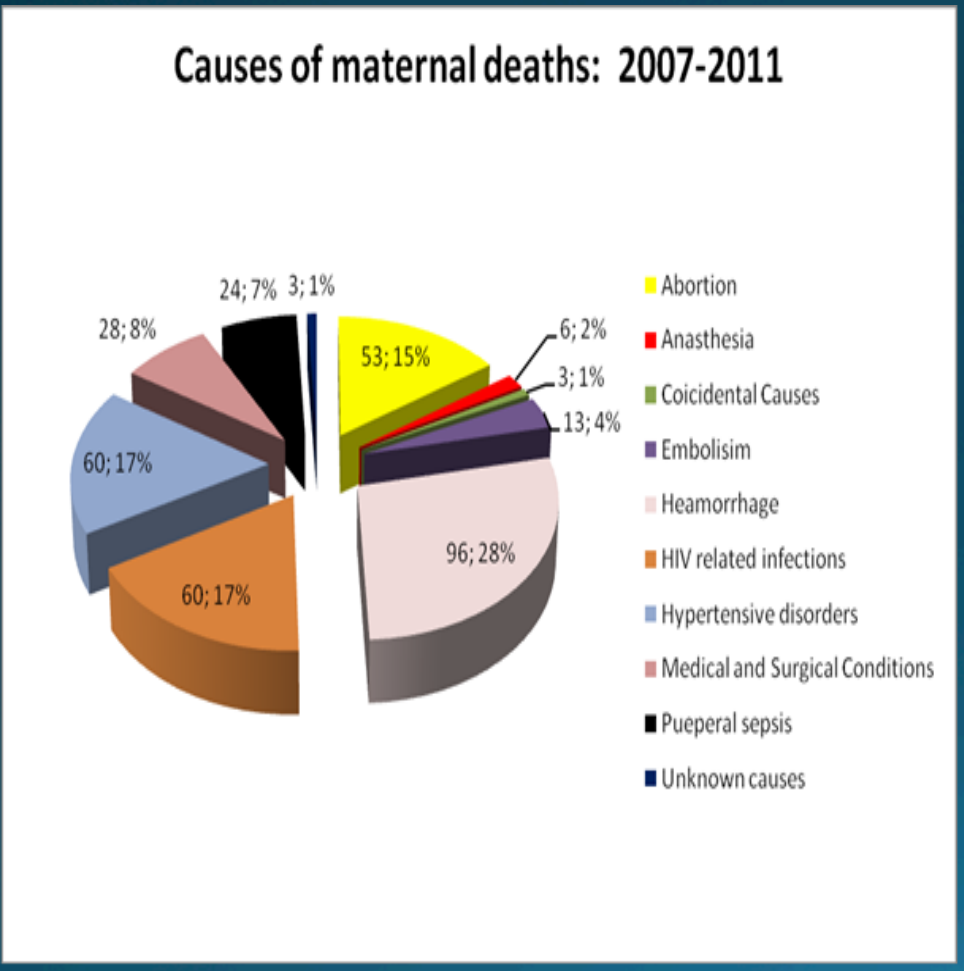
Main causes of maternal deaths 2007-2011

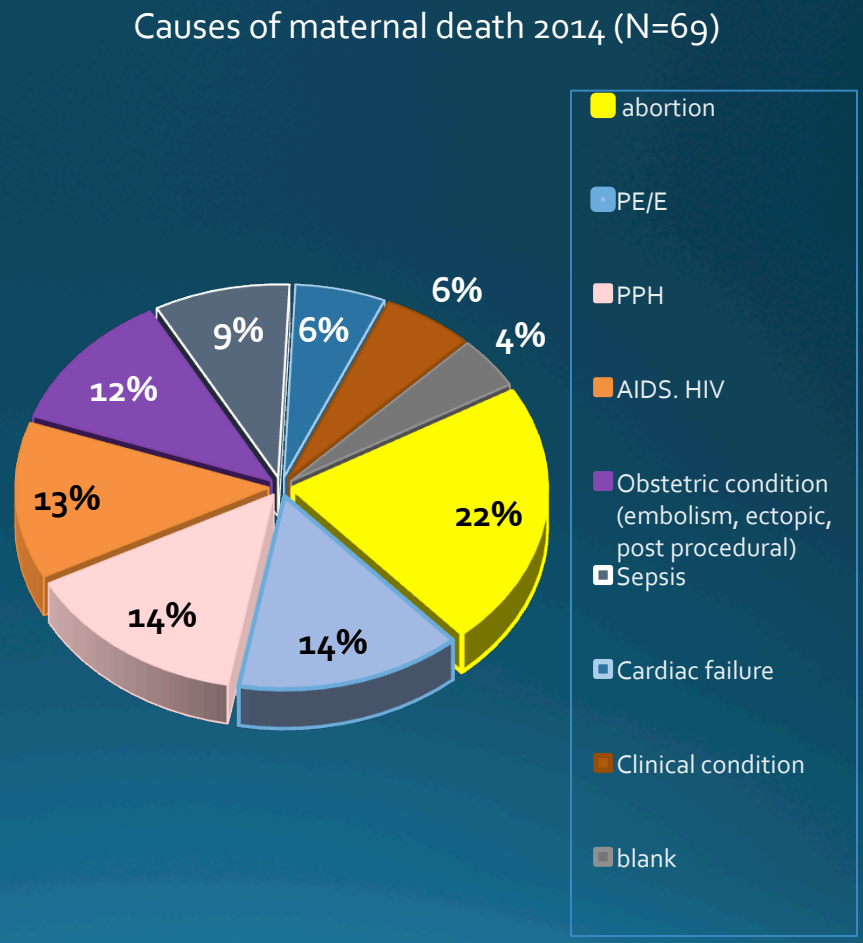
- 1.Haemorrhage 28%
- 2. HIV related infections 17%
- 3. Hypertensive disorders 17%
- 4. Abortion 15%

Main causes of maternal deaths 2014. 74% audited (51 out of 69 maternal deaths)

- **1. Abortion 22%**
- **2. Hypertension: PE/ Eclampsia 14%**
- **3. Postpartum Haemorrhage 14%**
- **4. HIV related 13%**
- **5. Other obstetric causes 12%**

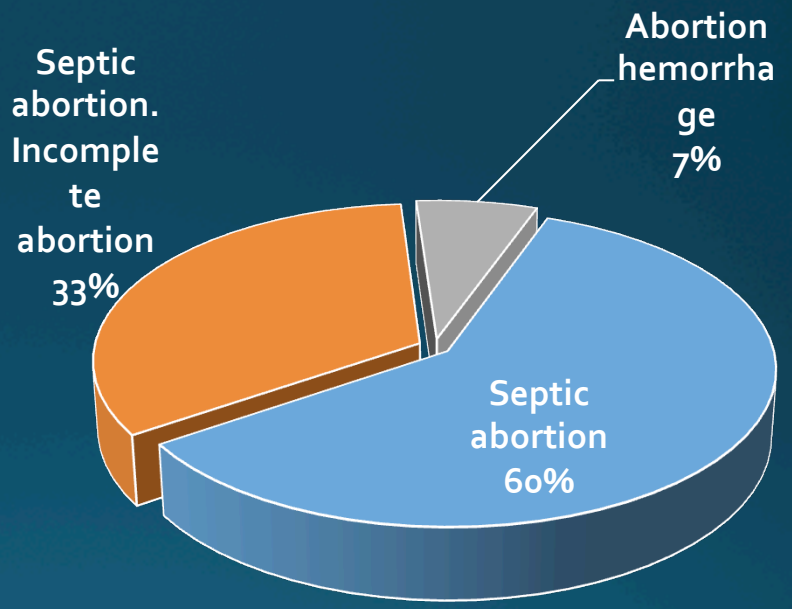
Results. Main causes of maternal deaths. Audit 2007-2011 vs Audit 2014



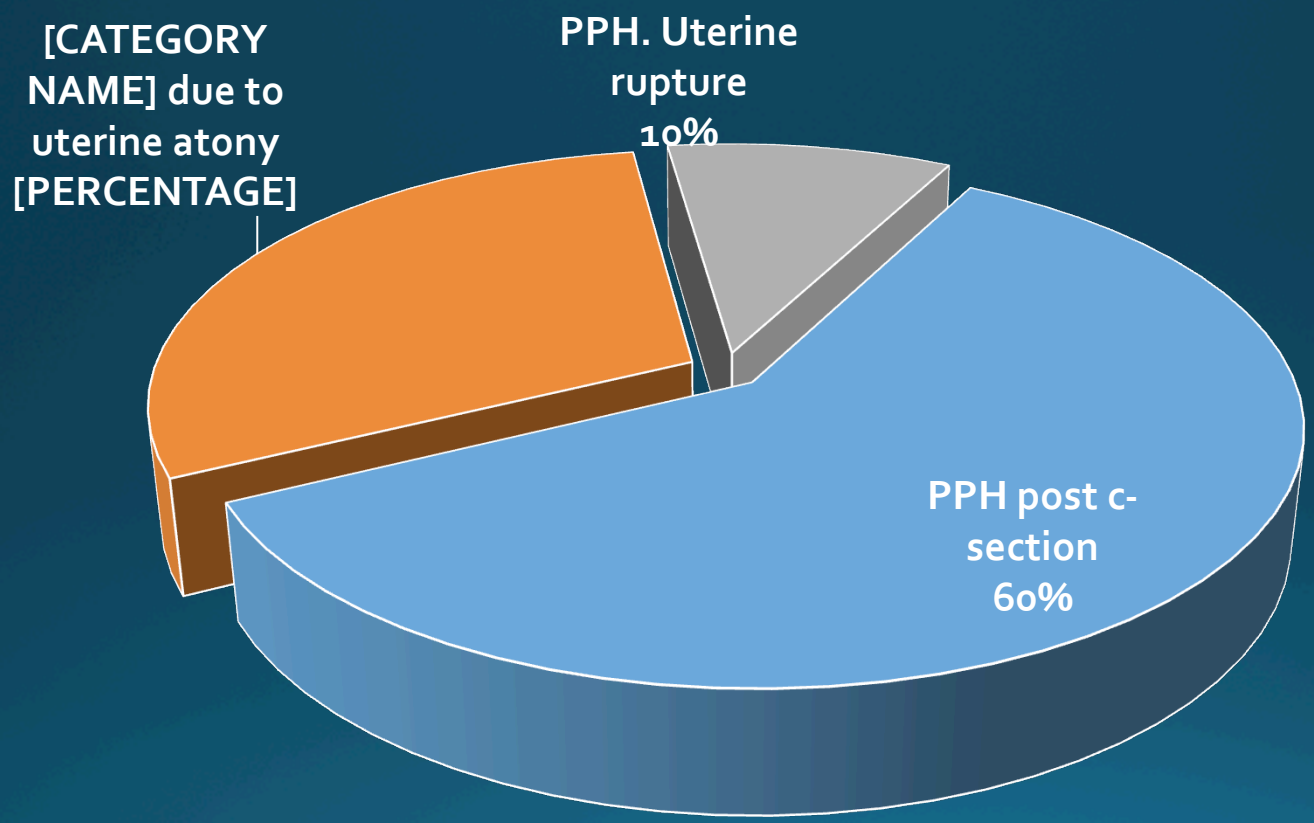


Results. Distribution abortion related deaths 2007-2014

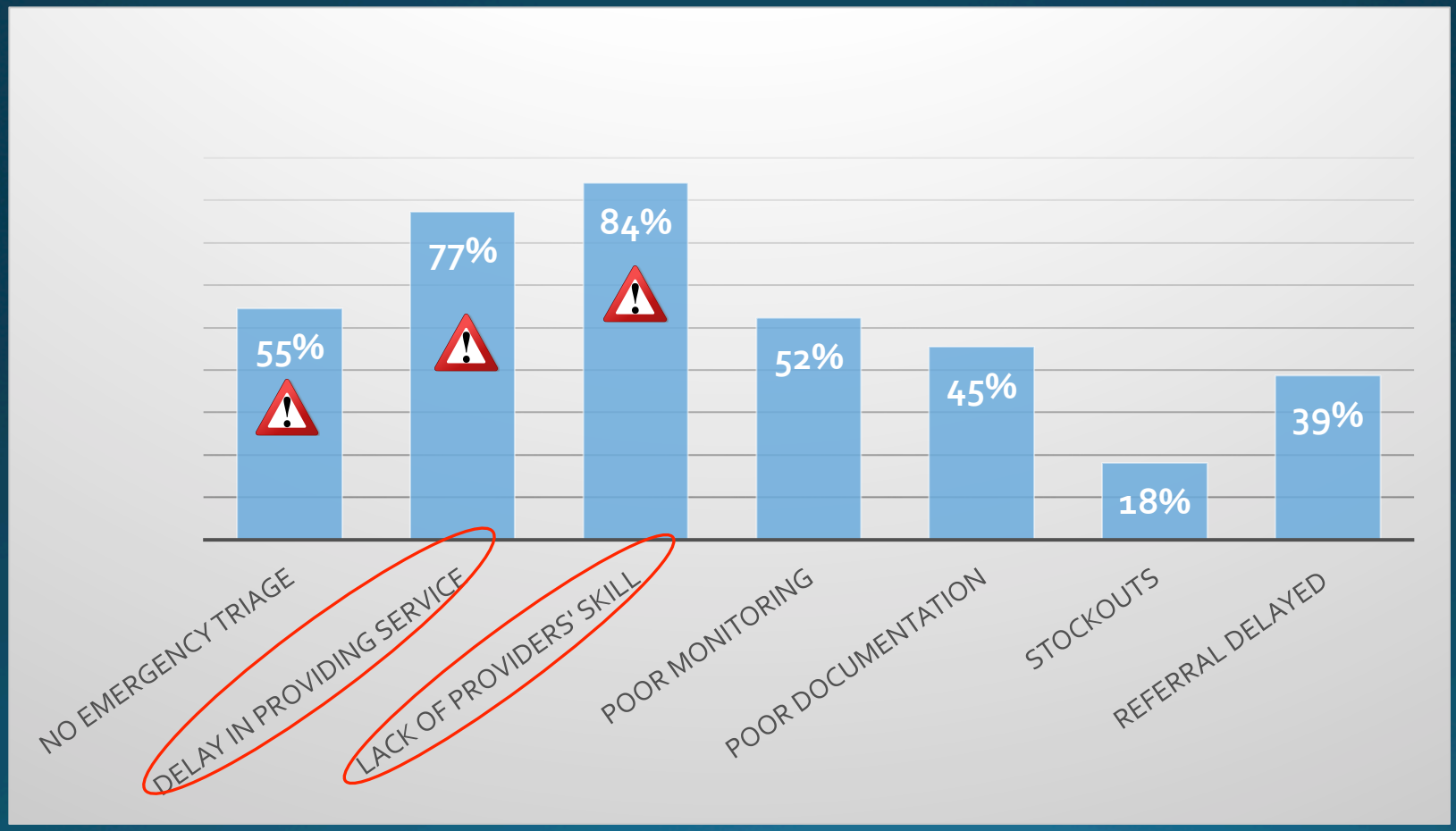
Death due to abortion complications 2014 : 15 (22%)



Maternal deaths due to post partum haemorrhage 2014. (N=10 Deaths, 14%)



Factors identified in 2014 audits as contributors to the maternal death (44 (65%)maternal deaths audited)



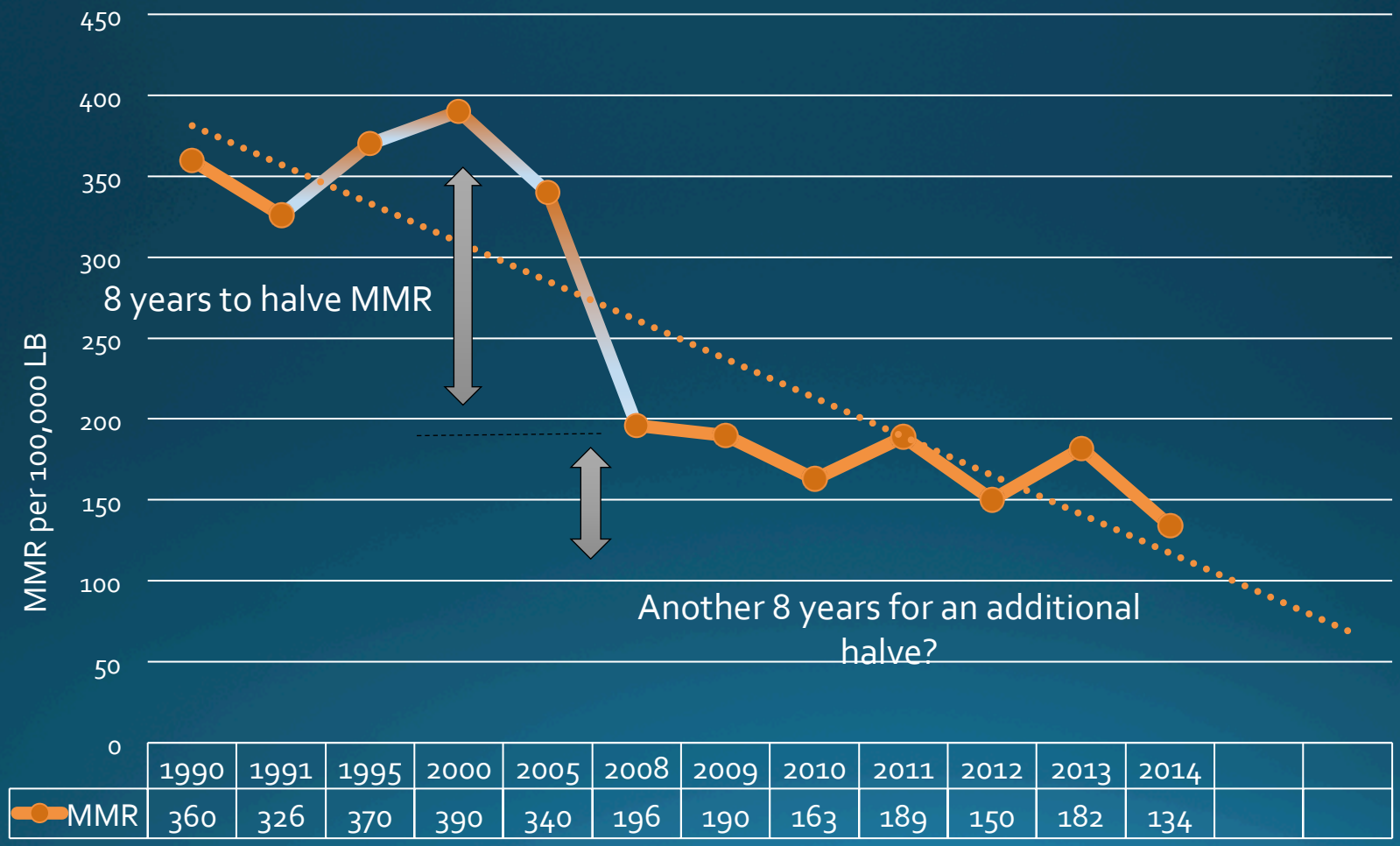
Results. Maternal death reduction 2014

-Maternal deaths were reduced from 90 in 2013 to 68 in 2014

-Shift in monthly deaths: Six consecutive points below the baseline median in 2013

-Median of monthly maternal deaths decreased from 8 deaths/ month in 2013 to 5.5 in 2014

Botswana: MMR Progress to reach MDG 5 (75% reduction 1990-2015)



Conclusions

- Botswana MMRI is seeking opportunities to integrate quality improvement performance data with outcome routine reporting and to strengthen the routine monitoring and reporting system through an electronic format.
- The Quality Improvement MMRI had provided the structure and methodology to use timely data at the facility level to support the improvement strategy
- The **Maternal Death Surveillance and Response in Botswana (**MDSR) informs the existence of knowledge gaps and will provide valuable information to improve the quality of care to reduce preventable maternal mortality.

Acknowledgements

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Thank you!