Perinatal Mortality Review:

An activity for quality improvement

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Northdale Hospital

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Scope of Presentation

- Introduction
- Quality improvement cycle
- Rationale of perinatal mortality Review (PMR)
- Processes of PMR
  - The team
  - Data & Material
  - Handling meetings
  - The after meetings
- Challenges
- The Northdale experience
- Final thoughts

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Introduction

- Quality of care should be everyone preoccupation:
- Our vision and mission speak about Quality of care
- Competitive world (Private vs. Public)
- Value for money (Batho pele)
- Self fulfilment
- There is always room for improvement

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Purpose of PMR

- The purpose is not
  - about statistics

- The purpose is about
  - Improving quality of care
  - Saving more lives
  - Learning from mistake and success

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Concepts of PMR

- Systematic collection and analysis of mortality and morbidity data for mothers and fetuses/infants
- Not a witch hunt
- Emphasis should be on quality of care improvement
- Could the death have been avoided?
- Was this patient mismanaged?
- What have we learned from this case?

Benefits of PMR

- Study and document the current situation
- Identify & quantify the problem
- Develop causality and solution theories
- Plan for improvement
- Team building for QIP
- Develop ownership for QIP
- Forum for QA and QC
  - Improve performance indicators

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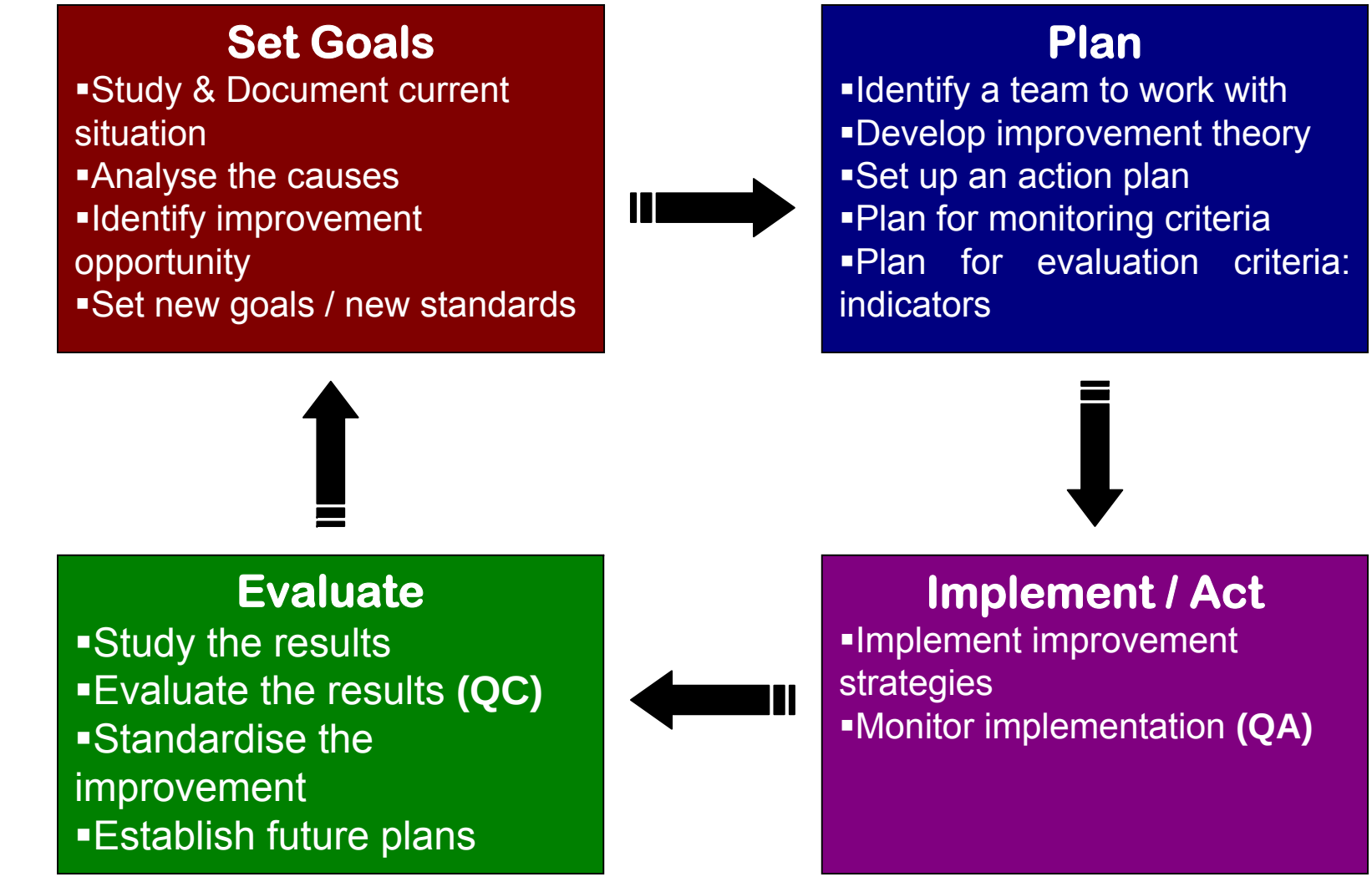
Quality improvement cycle



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Mechanisms of Improvement

- The Pygmalion effect *
- The Hawthorne effect **
- The learning process ***

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Processes of PMR

- The team
- Meeting attendance
- Data source
- Material
- Immediate review
- Preparatory phase
- The meeting itself
- Case presentation
- The “after-meeting” period

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Team

- Team comprised
  - Medical manager and/or Head of O&G
  - Head of paediatrics
  - Nursing manager and/or ADN for O&G
  - Unit managers for ANC, LW, ANW,PNW, Nursery,
  - Other stakeholders interested in perinatal care
- Team leader: Med. manager/ O&G HOD
- Members of the team should
  - Committed
  - Enthusiastic
  - Self motivated
- Clear allocation of task is essential

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Meeting attendance

- PMR should be everyone business
- All available medical staff
- All available nursing staff
- Representative from EMRS
- Representative from support services
  - Transport, laboratory, X-Ray, etc.
- Representative from referring and referral facilities

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Data source

- Maternity register
- Nursery register
- Electronic files (PIPP)

} Statistics

Numbers & rates

- Patients records
  - Doctors progress notes
  - Nursing progress notes
  - Lab investigations
  - X-Ray, U/S, other investigations
  - Postmortem report
  - Etc.

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Quality of data

- Quality of data depends on what you put in (Cabbage in – cabbage out)
- About registers
  - Completeness
  - Accuracy
  - Clarity
- PPIP is a useful tool to this effect
- Medical/nursing progress notes:
  - Write legibly
  - Avoid non popular abbreviations
  - Record as many details as you can
  - Date and time essential

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Review processes

- Immediate review
- Preparatory phase
- PMR meeting
- Reporting

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Immediate review

- What
  - Summarize the case for every stillbirth and neonatal death
- When
  - Within 24 hours
- Who
  - Birth attendant (SB), on duty MO (NND)
- Why
  - Avoid recall bias and memory fading

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Preparatory phase

- Why
  - Improve preparedness for the PMR meeting
- What
  - Check if everyone did the task allocated
  - Detailed analysis of all deaths
  - Case selection
  - Monthly stats, Data entry/export in computer
- When
  - A week before PMR Meeting
- Who
  - Team members
  - Doctor and nurse in charge of LW and Nursery

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Handling of PMR meetings

- At least monthly
- Chair & Minutes taker
- Avoid confrontation
- Focus on issues and not on people
- Occlude patients/staff identification makers
- Allocate tasks to specific people
- Send summary report to stakeholders

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Format of PMR meetings

- Welcome remarks
- Report on progress of allocated tasks
- Monthly statistics (numbers & rates)
- Trend (quarterly, six-monthly, annually)
- Case presentations - Discussion
- Summary of lessons learnt
- Summary of interventions agreed upon
- Tasks allocation
- closure

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Case presentation

- Presentation of
  - Full history
  - Physical examination
  - Investigation results
  - Diagnosis
  - Initial management
  - Progress of care
- Discussion on
  - Primary cause of death
  - Final cause of death
  - Avoidable factors

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Common primary causes of death

- Spontaneous preterm labor
- Intrapartum hypoxia
- Antepartum hemorrhage
- Hypertensive disorders
- Infections
- Fetal abnormalities
- Intrauterine growth restriction
- Trauma
- Maternal diseases
- Unexplained intra-uterine death

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Common final causes of death

- Prematurity related causes
- Birth asphyxia
- Infections
- Congenital abnormalities
- Trauma
- Other causes
- Unknown causes

Avoidable factors

- Patient related (most common)
- Health worker related (common)
  - Antepartum factors
  - Intrapartum factors
  - Neonatal care factors
- Administration related (least common)

Patient related factors

- No/late/irregular attendance of ANC
- Inadequate response to decrease fetal movements
- Inadequate response to ROM
- Inadequate response to APH
- Delay in seeking medical attention in labour

Health worker related factors

- These factors may be divided in three subcategories:
  - Antepartum factors
  - Intrapartum factors
  - Neonatal care factors

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Antepartum factors (Health worker related)

- No response to a poor obstetric history
- Over or underestimating fetal size
- No response to poor uterine growth
- No response to poor fetal movement
- No response to hypertension
- Multiple pregnancy not diagnosed
- No response to syphilis serology
- No response to glucosuria
- No response to post term pregnancy

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Intrapartum factors (Health worker related)

- Partogram not used
- Fetus not adequately monitored
- Signs of F/distress not interpreted correctly or ignored
- No response to poor progress of labour
- Prolonged 2nd stage not managed correctly
- Delay in calling the doctor or referring the patient

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Neonatal factors (Health worker related)

- Inadequate resuscitation
- Inadequate monitoring & Mx plan
- Delay in calling for assistance
- Delay in referring the infant to a high level of care

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Administration related factors

- Transport delays
- Lack of adequate screening for
  - Syphilis
  - HIV
  - Diabetes
  - others
- Inadequate staffing level (quantity/quality)
- Inadequate facility
  - Theatre
  - Nursery
  - Equipment

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The “after-meetings” period

- PMR meetings findings are data for action
- Recommendations derived from and supported by your findings
- Allocate tasks to specific people
- Follow-up implementations progress
- Examples of interventions
  - Policy
  - Equipment acquisition
  - Clinical practice
  - Education
  - New workload distribution

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Challenges

- Meetings may become witch-hunt exercise
- Confrontation create apathy for meetings
- Some staff may feel threatened if they were involved in the case.
- Problems of confidentiality may occur.
- Patients who die at home after discharge are not included.
- Patient notes cannot be found or are incomplete.
- The cases and data are not prepared properly.
- Lessons learned are not used to improve care.

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The Northdale experience

- Monthly meetings
- Referral hospital invited to attend but……
- Referring clinics to be invited from next year
- PPIP in use
- Poor quality of data Jan-Aug. Improving Sep-Oct
- Staff has been trained to collect data
- Some findings
  - Inadequate use of labour graphs at the clinics
  - Delay in referring patient by clinic staff
  - Delay in getting transport to refer to regional
  - Inadequate staffing in LW
  - Inadequate staffing in OT
  - Delay in taking patient to OT due staff shortage

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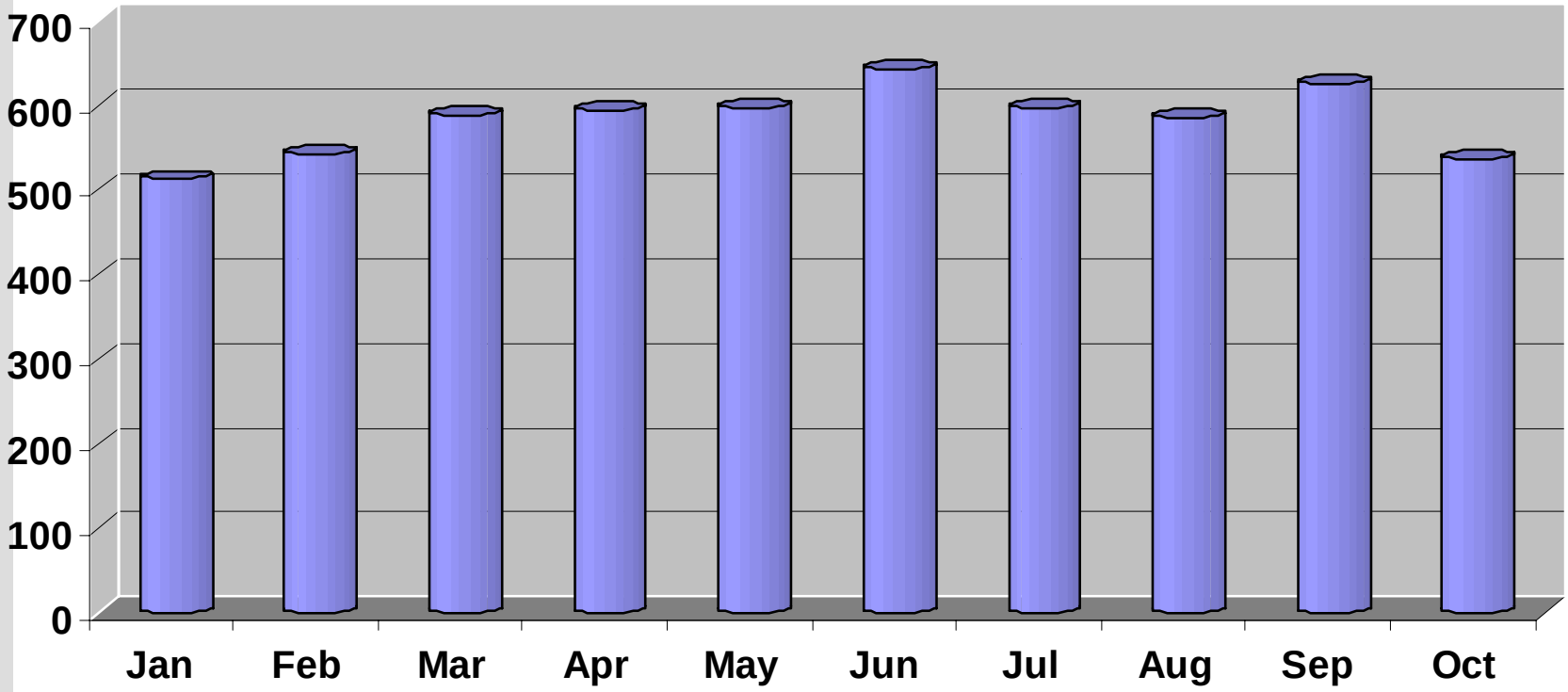
Monthly deliveries Jan-Oct 2006



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Total deliveries by weight

Jan-Oct 2006

	Number	%
500 - 999g	46	0.8
1000 - 1499g	62	1.1
1500 - 1999g	106	1.8
2000 - 2499g	370	6.4
≥2500g	5230	90.0
Total	5814	100.1

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Perinatal Mortality Survival analysis

Jan-Oct 2006

	Number	%
Born alive	**5722**	**98.4**
Survived	5692	99.5*
Early NND	29	0.5*
Late NND	1	0.0*
Stillbirths	**92**	**1.6**
Total	5814	100.0

* Denominator used: 5722

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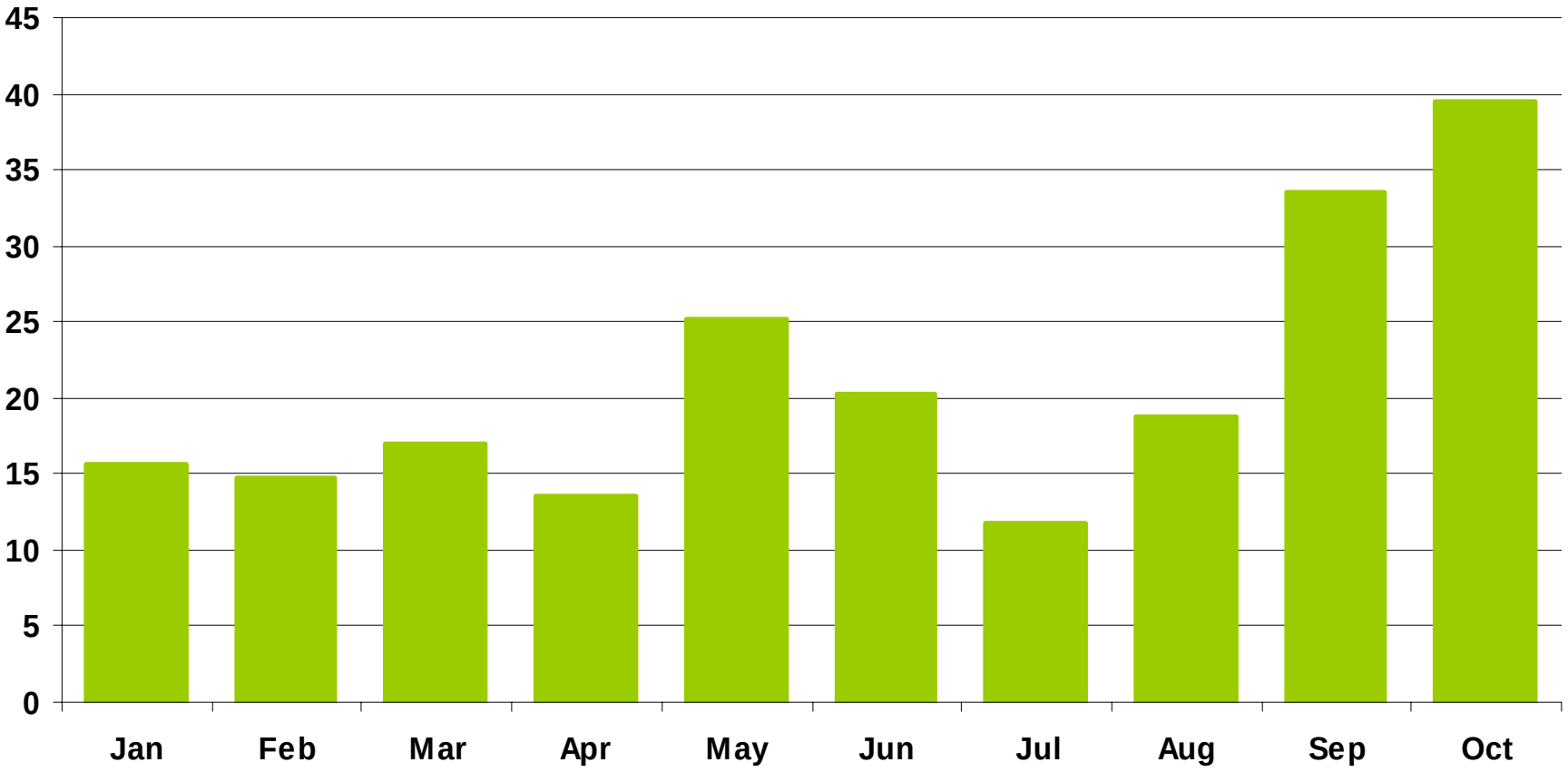
Monthly PNMR Jan-Oct 2006



Increase in Sep and Oct is attributed to better reporting

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Primary cause of Perinatal deaths

Jan-Oct 2006

Description	Number	%
Intrapartum asphyxia	12	36.4
Spontaneous preterm labour	9	27.3
Intrauterine death	4	12.1
Antepartum haemorrhage	3	9.1
No obstetric cause / Not applicable	3	9.1
Maternal disease	2	6.1
Total	**33**	**100.1**

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Final cause of Perinatal deaths

Jan-Oct 2006

Description	Number	%
Hypoxia	9	39.13
Hypoxic ischaemic encephalopathy	5	21.74
Meconium aspiration	1	4.35
Immaturity related	8	34.78
Infection	2	8.70
Septicaemia	2	8.70
Other	2	8.70
Aspiration pneumonia	1	4.35
Hypothermia	1	4.35
Unknown cause of death	2	8.70
Total	**23**	**100.00**

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Avoidable factors for perinatal deaths

	N	%
Patient associated	20	40
Medical personnel associated	13	26
Administrative problems	11	22
Insufficient notes to comment	6	12

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Description	N	%
Patient associated	**20**	**40**
Delay in seeking medical attention during labour	4	8
Infrequent visits to antenatal clinic	4	8
Booked late in pregnancy	2	4
Inappropriate response to antepartum haemorrhage	2	4
Inappropriate response to poor fetal movements	2	4
Never initiated antenatal care	2	4
Assault	1	2
Failed to return on prescribed date	1	2
Medical personnel associated	**13**	**26**
Fetal distress not detected intrapartum; fetus monitored	3	6
Delay in medical personnel calling for expert assistance	2	4
F/distress not detected intrapartum; fetus not monitored	2	4
Inadequate / No advice given to mother	1	2
Incorrect management of antepartum haemorrhage	1	2
Management of 2nd stage: prolonged with no intervention	1	2
Multiple pregnancy not diagnosed intrapartum	1	2
Neonatal care: inadequate monitoring	1	2
Administrative problems	**11**	**22**
Insufficient nurses on duty to manage patient adequately	4	8
Personnel not sufficiently trained to manage the patient	2	4
Personnel too junior to manage the patient	2	4
Anaesthetic delay	1	2
No accessible neonatal ICU bed with ventilator	1	2
Staff rotation too rapid	1	2
Insufficient notes to comment	**6**	**12**

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Maternal deaths

Number of maternal deaths	13
Maternal Mortality Ratio (Live births)	206/100000
Maternal Mortality Ratio (All births)	209/100000

Primary causes of maternal deaths

	Number	%
No obstetrical cause	7	53.85
Septic abortion	2	15.38
Proteinuric hypertension	1	7.69
Pre-existing maternal disease (resp)	1	7.69
Pregnancy related infection	1	7.69
Anasthetic complications	1	7.69
Total	13	100.00

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Final thoughts

- PMR require resources
- PMR pay back
- PMR is everyone's business