A 5 month audit and outcomes at Mt Hagen Provincial Hospital Pediatric Department

By Dr Clyde Kamo

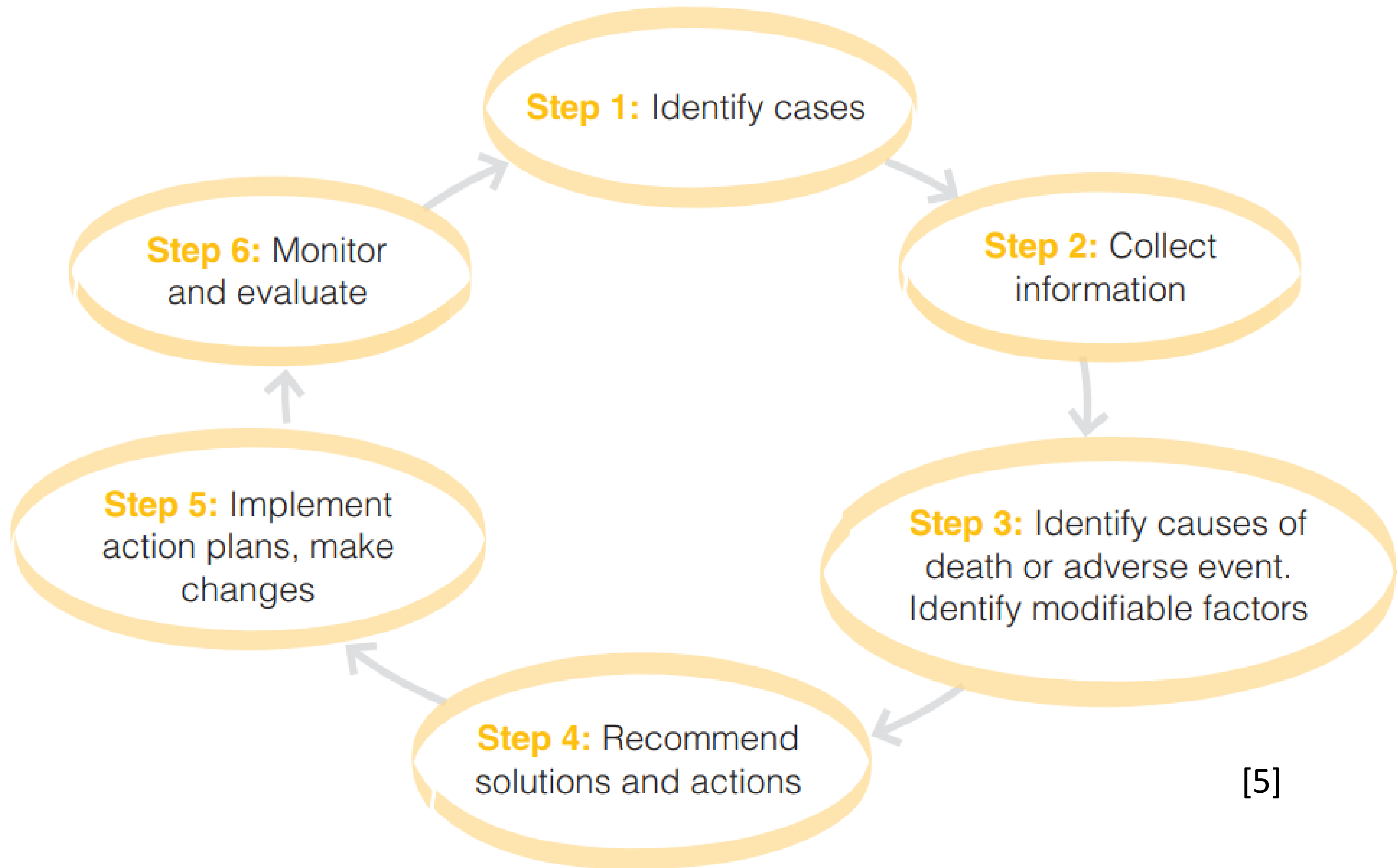
AIMS

- This study aims to look at the outcomes following the implementation of regular systematic death reviews at Hagen Hospital pediatric unit over a 5 month period.

Auditing

- The systematic and critical analysis of the quality of medical care including the procedures used for diagnosis and treatment, the use of resources and the resulting outcome[1]
- Something that has been lacking
- Effective tool to improve quality

The Audit Cycle



[5]

Mt Hagen Hospital

- More than 3000 admissions last year
- Clinical governance meetings started in 2016
- Audits formally carried out monthly in 2018.
- Audit carried out patients in COPD, SCN and main Pediatric ward

Methods

- Weekly death reviews-3 registrars and SMO
- All deaths required to have been signed and WHO death reporting form filled.
- All avoidable deaths and special points of mention compiled to be discussed
- Selected perinatal deaths discussed with the O&G team.

- Modifiable factors categorised Public Health Factors, Home factors, Hospital Factors
- All points made during meets summarised into action summary form.

ID Number (office use only)______________

PNG DEPARTMENT OF HEALTH
CHILD DEATH REVIEW FORM

Please complete both sides of this form whenever a child or newborn dies in the community, a health centre or hospital. Also complete an official death certificate.

Name of child who died: ______________

Date of birth: / /

Age: __ __yrs __ __mths __ __days

☐1 **Male**
☐2 **Female**

Weight: __ __.__Kg

Date of death: / /

Time of death: __ __.__ __ am/pm

Province: ______________

District: ______________

Village / town: ______________

Name of health facility reporting the death: ______________

1. Place of death:
☐1 Hospital
☐2 Health center
☐3 Home / village
☐4 In-transit to health facility

2. Days child was sick before presentation: __ __ days

3. Date of Hospital Admission: / /

4. Describe the story of what happened to the child

5. Distance and time traveled to reach the health facility: __ __ km __ __ hrs

6. Mode of transport______________

7. Was child referred from another health facility
☐0 No
☐1 Yes (which one)______________

8. Delay in transport or referral
☐0 No
☐1 Yes (why)______________

9. Had the child recently been an inpatient?
☐0 No
☐1 Yes (how many days ago was the child discharged)______________

10. Neonatal death
☐0 No *(go to Question 17)*
☐1 Yes

11. Mother attended antenatal care: __ __ times

12. Premature onset of labour
☐0 No
☐1 Yes
☐9 Unknown

13. How long were the membranes ruptured before the baby was born: __ __ hrs

14. Duration of labour: __ __ hrs

Thank you for completing both sides of this form. The information you provide will be used to improve the health services for children.

ID Number (office use only)______________

15. Place of birth:
☐1 Hospital
☐2 Health centre
☐3 Home / village
☐9 Unknown

16. Apgar score
at 1 minute __ __
at 5 minutes __ __

17. Vaccine Status
☐ Vaccines up to date for age
☐ Some vaccines received but not complete for age
☐ No vaccines ever received

18. Nutritional status
☐ Normal nutrition (>-2 Z-scores weight for age or weight for length)
☐ Moderate malnutrition (-2 to -3 Z-scores)
☐ Severe malnutrition (<-3 Z-scores or Kwashiorkor)

19. Investigations done

20. List the DIAGNOSES that were made (use the standardized diagnoses on the PHR, or add another diagnosis if not included):

Primary diagnosis leading to death______________

Underlying diagnosis (e.g. a chronic illness)______________

Other diagnoses______________

Other diagnoses______________

21. What environmental or social factors were involved?

22. What TREATMENTS did the child receive? (list all the treatments that were given)

23. Were there any complications of treatment? (specify)

24. Were any treatments you wanted to give *not* available at the time the child presented?
☐0 No
☐1 Yes (please specify)______________

25. WAS THIS CHILD'S DEATH POSSIBLY AVOIDABLE?
☐0 No
☐1 Yes

(If yes, **please write full details** of *where* improvements should occur, and what should be done)

Home or community:

Primary care or referral system:

Hospital:

Name and address of person reporting death (for purposes of providing feedback)

Name:

Position (e.g. Doctor / Nurse etc):

Address:

Date of child mortality review meeting in which this case discussed:

Thank you for completing both sides of this form. The information you provide will be used to improve the health services for children.

VJ [09WHP20811]

- Female, DOB 21/05/17. Died 08/05/19
- Residing; Anglimp, Originally from Enga
- Admitted; 02/5/19
- Weight; 8.5Kg WFA; <-2
- Cause of death; Hypoglycemia, Hypothermia. SAM
- PC; >1/12 recurrent watery stools, appetite loss

- Presented multiple times to COPD and local health centre for diarrhea, symptoms persisted.
- Dehydrated on exam, absent tears, slow capillary refill. Puffy, bipedal oedema and swollen face.
- Inx; FBE; WCC increased, Hb 7.3 g/dl (microcytic, hypochromic), low platelets.
- Rx; Initial; Amoxyl, Gentamycin, then Ceftriaxone. TB FDC started after CXR showed patchy infiltrates.F75 milk feeds started on the 4/05 after diarrhea settled.

- **Population Health Factors**
- Mum not on any family planning.
- Boiling water education with Hygiene and sanitation measures.
- **Home Factors;**
- Neglected child (mother 4/12 pregnant, left child with grandmother). Early weaning at 5/12 and started on solids 3/12.
- Parents separated.
- Exposed to PTB at home. Grandmother’s sister diagnosed with PTB. Overcrowding.

- **Hospital Factors;**
- Early admission may have prevented death
- UECs unavailable at the time, No BSL regular.
- No heaters available in ward 6.

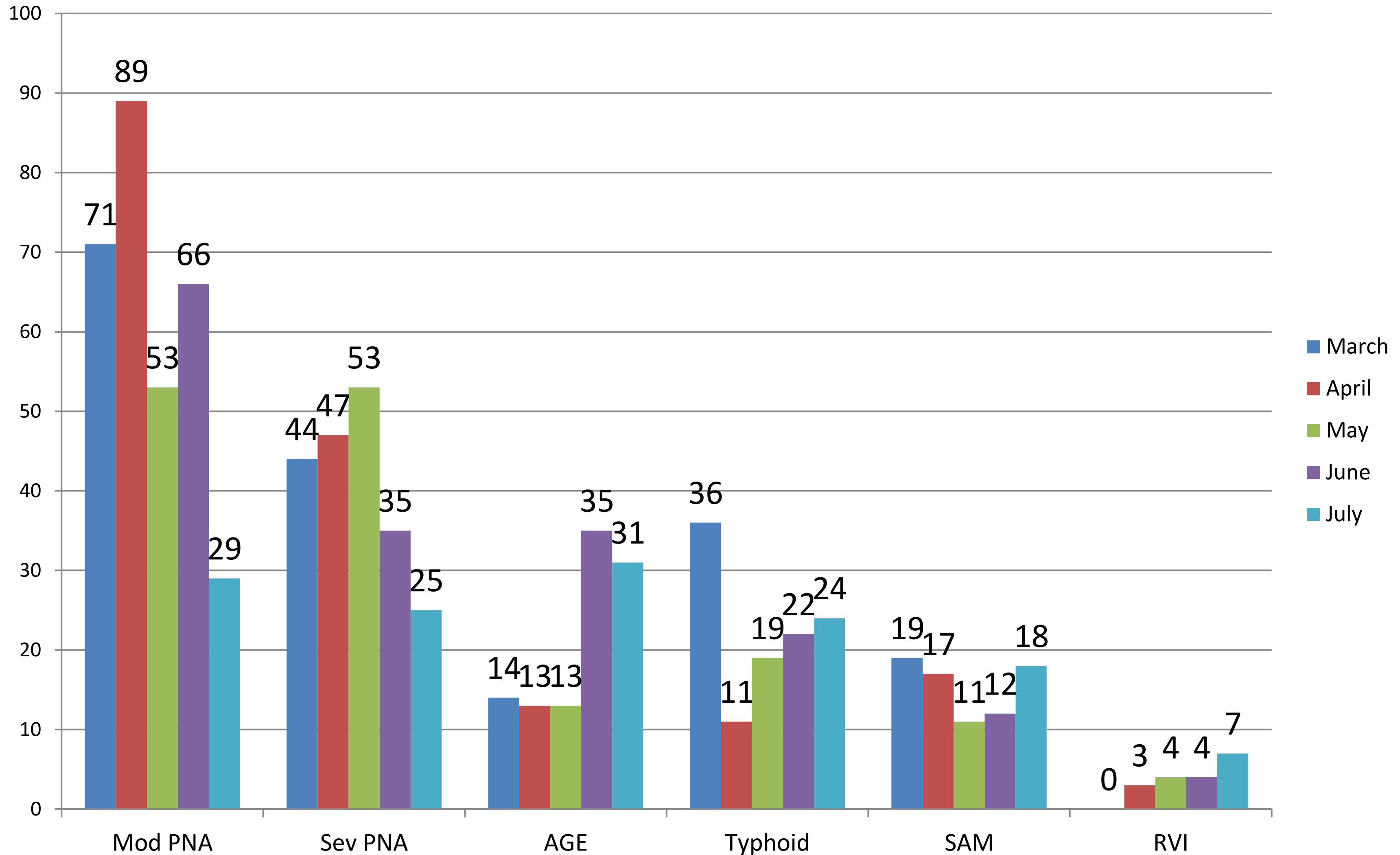
Results

- Had 5 month unit audits, 12 weekly death reviews, 1 peri-natal death audit
- Total of 1856 admissions. (658 SCN)
- Total of 84 deaths (50 SCN)
- 59 deemed Unavoidable (37 SCN)
- Overall mortality rate 4.52%
  - Ward 6-2.83%
  - SCN- 7.59%

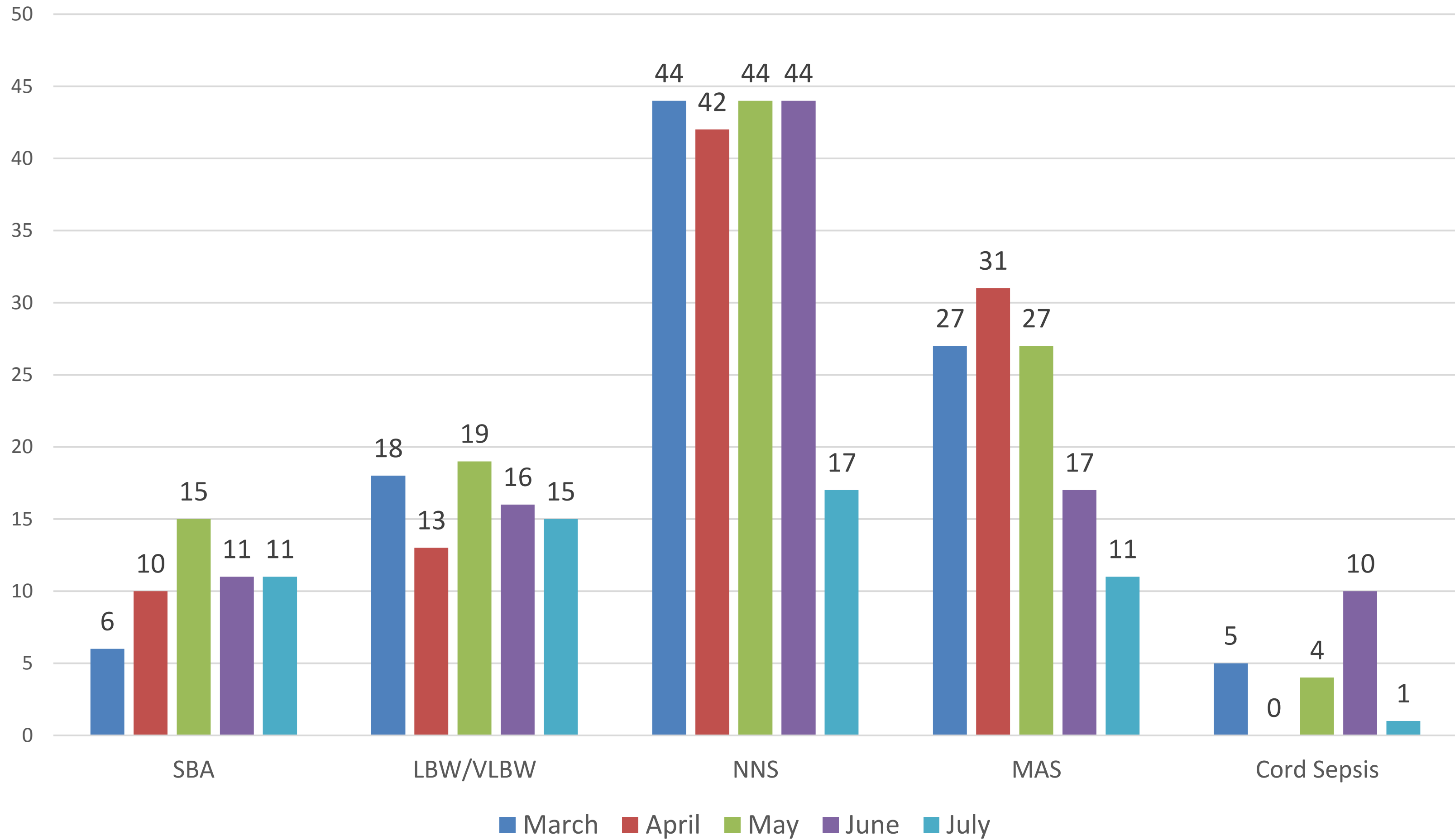
5 Month MR by months

Month	6A	Deaths	MR	SCN	Deaths	MR	Total	Deaths	Overall MR
March	277	8	2.88	139	9	6.47	416	17	4.08
April	238	4	1.68	137	11	8.02	375	15	4
May	216	10	4.62	144	13	9.02	360	23	6.38
June	246	6	2.43	128	8	6.25	374	14	3.74
July	221	6	2.71	110	9	8.18	331	15	4.53
TOTAL	**1198**	**34**	**2.83**	**658**	**50**	**7.59**	**1856**	**84**	**4.52**

Common Admissions 6A



COMMON ADMISSIONS SCN



CASE FATALITY RATES

	Total Deaths	Total Admissions	MR
RVI	9	18	50.00
SBA	13	53	24.53
LBW	13	81	16.05
Cord Sepsis	3	20	15.00
ABM	6	41	14.63
SAM	7	77	9.09
Congenital Defects	6	73	8.22
Sev PNA	8	204	3.92
Typhoid	2	112	1.79

Modifiable factors identified

- Delayed presentation 19
- Insufficient diagnostic and therapeutic 18
- Home delivery 14
- Insufficient investigations 8
- Water supply 7
- Unbooked 6
- Readmissions 5

Action plans-Ward Level

- Improved antibiotic stewardship
- More relevant information at admissions, recording
- Investigations only where appropriate
- Acquire heaters, improved monitoring
- Avoid overnight discharges
- Cord care in Newborns

Action Plans

- RVI exposed children-Working to have Virology done locally, less time waiting
- Running HIV clinics with Hilary Clinic
- Extension of Burnett institute chlorhexidine research to include -Cord care

Discussion

- Sometimes meetings not carried out weekly
- Staff shortage
- Peri-natal audits
- Include other members; pharmacists, lab scientists, records
- Assessment and follow up outcomes of action plans

Conclusion

- Auditing a vital tool to improve quality of patient care
- Needs commitment, good available data.
- Provides credible grounds for which action can be taken

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