

# CHILD HEALTHCARE PROBLEM IDENTIFICATION PROGRAMME

VERSION 3.1



## **TRAINING AND REFERENCE MANUAL**



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## INTRODUCTION

In the mid-1990s, the transformation of the South African health system using the primary health care approach led many children's health workers to feel optimistic about the impending changes. However, in moving from academic and metropolitan facilities into regional and district hospitals, it quickly became evident that despite good intent the quality of care received by children was suboptimal. The challenge was how to change this.

In 1996 the Perinatal Problem Identification Programme (PPIP)<sup>1</sup>, and in 1997 the Confidential Enquiry into Maternal Deaths (CEMD)<sup>2</sup> were launched, with similar concerns about the quality of care received by babies (unborn and newborn) and pregnant women. Both PPIP and the CEMD pioneered the use of the mortality review process in South Africa for assessing and improving quality of care received by these health populations.

Drawing on the philosophy and experience of these two programmes, Dr Angelika Krug piloted an Under 5 Healthcare Problem Identification Programme in the early 2000s in four sites in the Mafikeng region of North West province.<sup>3</sup> The programme was then field tested in eight sites in 2004<sup>4</sup> giving rise to the first Saving Children report.<sup>5</sup> After field testing, the programme was extended to be able to include all children (0 - 18 years) admitted to children's wards, the software platform was substantially updated and improved, and the package was renamed the Child Healthcare Problem Identification Programme or Child PIP.

The Child PIP software programme has undergone an extensive upgrade to version 3 and now includes a number of new capabilities, such as the ability to identify specific modifiable factors related to individual priority conditions, e.g. acute respiratory infections or diarrhoeal disease. In this way interventions to improve the quality of care for these important conditions will be better able to be identified.

Further development and refinement the software programme during 2011 has resulted in the upgrade to version 3.1 and the Training and Reference Manual has been updated accordingly.

Effective interventions for improving child survival are known, yet the gap between what can be done to reduce child mortality and what is actually being done is growing. One strategy for attempting to reduce this gap is the careful process of mortality audit, which can identify where healthcare for children is deficient, and where improvement is necessary and possible.

It is hoped that by implementing Child PIP in as many healthcare institutions as possible, healthworkers will be enabled to put knowledge into action and thus reduce preventable child deaths.

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October 2011

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<sup>1</sup> <http://www.ppip.co.za>

<sup>2</sup> [www.doh.gov.za/docs/reports/2004/savings.pdf](http://www.doh.gov.za/docs/reports/2004/savings.pdf)

<sup>3</sup> Krug A, Pattinson RC, Power DJ. Saving children - an audit system to assess under-5 health care. S Afr Med J 2004 Mar; 94(3):198-202.

<sup>4</sup> Krug A, Patrick M, Pattinson RC, Stephen C. Childhood death auditing to improve paediatric care. Acta Paediatr. 2006 Nov;95(11):1467-73.

<sup>5</sup> Krug A, Pattinson RC. Saving Children 2004: a survey of child healthcare in South Africa. Pretoria: MRC Unit for Maternal and Infant Healthcare Strategies, 2005.



## THE CHILD PIP TRAINING PACKAGE

The Child PIP Training Package consists of:

- A Training and Reference Manual (one per participant), which serves as a guide for facilitators and participants attending Child PIP training workshops. The manual also contains course materials and is the reference guide for Child PIP users
- A Child PIP blue folder (one per site)
- A Child PIP CD (one per site), which contains the Child PIP software, training programme slide presentation and manual, Child PIP reference tools and the Saving Children reports

## COURSE OVERVIEW

The course is presented by facilitators using a slide presentation (approximately 160 slides with speaker notes). It consists of a background section and five modules.

Each of the modules takes approximately 1½ hours (½ hour for slide presentation/discussion and 1 hour for the practical work).

It is most beneficial if computers are available for participants to work with (preferably one computer per three participants). Ensure that each participant has the opportunity to develop computer skills. Facilitators will need to provide a copy of the national database to load onto the computers for the practical work.

All instructions for facilitators, materials and worksheets for the practical work are contained in the manual, apart from patient folders that the facilitators will need to provide for the practical mortality review task. Additional copies of the materials and worksheets can be printed from the Child PIP CD as required.

AIM	OUTCOMES (actions for participants)	OBJECTIVES (content for facilitators)	TASKS / PRACTICAL
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### Background to Child PIP

Reflect on quality of healthcare for children	At the end of this session participants should have an understanding of why and how the Child Healthcare Problem Identification Programme was developed	Use the "Background to Child PIP" slide presentation to reflect on the role of Child PIP in improving quality of care for children in South Africa	
Discuss death auditing and introduce the Child PIP mortality audit system			

### Module 1: The Mortality Review Process

Introduce concept of the Mortality Review Process	At the end of this session participants should understand the Mortality Review Process and be able to run/participate in a MRM	Use Module 1 slide presentation to describe the Mortality Review Process	<ul style="list-style-type: none"> <li>▪ Role play a MRM in small groups</li> </ul>
Learn to conduct constructive and educational Mortality Review Meetings		Discuss essential elements of the MRM and organise role play	

### Module 2: Data Collection: Paper

Identify Child PIP data sources and understand efficient data collection	Participants should be able to organise data sources and to collect accurate data using the Child PIP data collection tools	Use Module 2 slide presentation and demonstrate a "Child PIP blue folder"	<ul style="list-style-type: none"> <li>▪ Review a Child PIP blue folder to track data</li> <li>▪ Use an Admission Register to complete a Monthly Tally Sheet</li> <li>▪ Do a folder review and complete a Death DCS</li> </ul>
Develop Child PIP data collection skills		Facilitate and oversee practical session	



Module 3: Data Entry: Software			
Introduce Child PIP v3 software	Participants should understand the basic functioning of the Child PIP software programme and know how and where to access help	Use Module 3 slide presentation covering: Installation; Hospital setup; Data entry; Database maintenance; Data Export and Import  Demonstrate software on computer	
Develop skills in Child PIP v3 software installation	Participants should be able to install Child PIP v3 and setup their hospital	Assist with installation of Child PIP v3 programme onto facility computer	<ul style="list-style-type: none"> <li>Practice installing Child PIP v3 and Hospital setup</li> </ul>
Develop skills in data entry; database maintenance; and data export and import	Participants should be able to enter data, maintain the database and perform data export and import	Be able to assist with basic problems	<ul style="list-style-type: none"> <li>Practice entering Monthly Tally and Death DCS data</li> <li>Practice database maintenance and data export</li> </ul>

Module 4: Data Analysis and Presentation			
Describe the context of childhood mortality to contextualise Child PIP data	Participants should have an overview of childhood mortality and understand and interpret Child PIP data accurately	Use first section of Module 4 slide presentation to describe childhood mortality and measures of mortality	
<b>Child PIP data analysis</b> Demonstrate Child PIP data analysis reports on computer and develop skills in data analysis	Participants should be able to use the Child PIP data analysis functions (set analyses and Design Own Report)	Use Module 4 slide presentation to show Child PIP data analysis functions and demonstrate (real time)  Set data analysis tasks for participants	<ul style="list-style-type: none"> <li>Practice data analysis to complete data tables (choose a hospital from database on computer)</li> <li>Experiment with the Design Own Report facility</li> </ul>
<b>Data presentation</b> Describe the types of Child PIP data presentation, then practice reflecting on data and compiling a Child PIP Report	Participants should understand the different methods of data presentation and be able to write a Child PIP Report	Use third section of Module 4 slide presentation and discuss slide presentations, posters and the Child PIP Report	<ul style="list-style-type: none"> <li>Set task to write a Child PIP Report using data from hospital chosen in previous task</li> </ul>

Module 5: Making Change Happen			
Describe local, provincial and national examples of what has been achieved using Child PIP	Participants should be inspired by the stories described	Use first section of Module 5 slide presentation to describe what has been achieved using Child PIP	
<b>Data to Action</b> Describe how to make good use of Child PP data in order to make change happen	Participants should have an understanding of how to use Child PIP data meaningfully to enable change	Use Module 5 slide presentation to explain ways of using Child PIP data  Facilitate group discussions	<ul style="list-style-type: none"> <li>Use pro forma to guide group discussions (remember to choose only one scenario)</li> </ul>
<b>Making Child PIP happen</b> Understand the principles and responsibilities involved in making Child PIP sustainable at a facility	Submit a completed Child PIP Checklist to provincial coordinator	Use Module 5 slide presentation to explain how to make Child PIP happen at a facility  Facilitate group discussions	<ul style="list-style-type: none"> <li>Use pro forma to complete Child PIP Checklist</li> </ul>



# BACKGROUND TO CHILD PIP

## Aims

- Reflect on quality of healthcare for children
- Discuss the concepts of death auditing and introduce the Child PIP mortality audit system

## Content

The Child PIP paediatric mortality review process seeks to improve the quality of care that children receive in the South African health system.

### IS THERE A CONCERN ABOUT QUALITY OF CARE?

From the experience of healthworkers and patients there emerges the impression that quality of care for children is not what it could or should be. There is a concern about the quality of care that children receive in the South African health system. This concern is made real by the following extracts from the clinical records of children who died in South African hospitals:

*'Not seen on ward at all after admission; sats recorded as 66%; no oxygen given; sats never rechecked'* (13-month-old Thando with ARI)

*'LP considered, but not done. Diagnosis of meningitis delayed by 15 hours; antibiotic never started'* (16-month-old Sanele with meningitis)

*'Lift got stuck when intern called to patient. Patient already dead when she got there'* (2-month-old Zweli, with no identifiable cause of death. Later in the day the intern slipped, running up the stairs, and broke her wrist)

*'After initially improving, child appeared to drown in her own vomit'* (8-year-old Samkelo with meningitis)

Health workers, who care, reflect on what they do. When faced with the deaths of children such as these, the challenging question is: 'Is this the best I can do?' or 'Can I do better?'

### CAN DEATH AUDITING ADDRESS QUALITY OF CARE?

To start understanding the importance of death auditing, it is worth considering the evolution of thought processes around the occurrence of death.

In the 1760's, Morgagni pioneered the clinical pathology conference, and this process enabled the attachment of symptoms and signs to post mortem findings and thereby enable "scientific" diagnosis, treatment and logical prognostication, for individual patients.

Then, in the 1880's, mortality rates were generated for the first time, by Florence Nightingale (who unfortunately was largely ignored) and Semmelweis, who was able to show by publishing mortality rates, that hand washing decreased maternal deaths.

In 1976, the concept of avoidable mortality was introduced by Rutstein, who generated mortality rates for populations and then compared each with a "gold standard", which would be the area in the world with the lowest mortality rate. The difference in mortality is then presumed to be avoidable mortality.

It is only as recently as 1980, that the first attempts were made to look at avoidable factors in deaths, developed later by, Angelika Krug, a South African paediatrician based in the North West Province, in the u5 PIP programme. Here the focus shifts by naming avoidable factors modifiable.

The modifiable factor concept represents a return to individual patient assessment, which enables an understanding and assessment of the process of care delivered to individual patients.

Death auditing is also premised on the understanding that mortality represents the tip of an iceberg, either for a particular disease, or for a population. This is based on the assumption that problems leading to the death of a child are the same as those found in other sick children, just more severe. So, for each child who dies of rheumatic heart disease, there are many who survive, but go on to have mitral valve replacements and lifetime warfarin. By preventing death, through improved care of children with rheumatic heart disease, there will be fewer complications in those that survive.

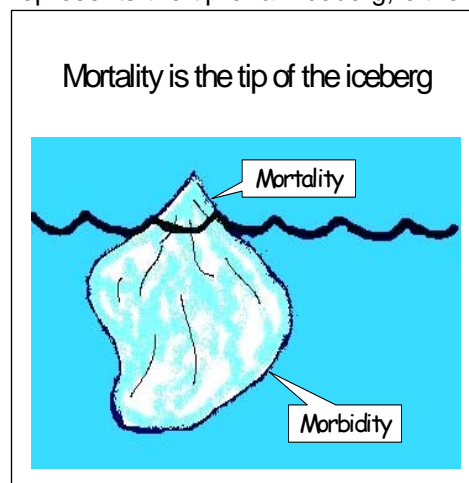
The next step involves understanding that mortality audits can meaningfully impact on quality of care if modifiable factors are identified in the events leading to a child's death.

Mortality rates are made up of unavoidable and avoidable deaths. Therefore, to bring down the mortality rate, it is worth finding the reasons for avoidable deaths and addressing these. If deaths are avoidable, then there will be modifiable factors in the process of caring for the child prior to the death.

A modifiable factor is a missed opportunity for good care, or an instance of suboptimal care, which may have contributed to the child's death. Children are cared for at home, in clinics and hospitals (outpatients and inpatients), and by families, healthworkers (doctors and nurses) and administrators (politicians and managers).

By categorising modifiable factors in relation to 'Where' they occur and 'Who' is responsible, it becomes possible to identify and prioritise problems, and devise solutions for implementation by those responsible.

The table below gives examples of modifiable factors.



	Family/Caregiver	Administrator	Health worker
<b>Home</b>	Delay in seeking care, child taken to clinic with advanced disease		
<b>Clinic</b>		No transport from clinic to hospital	IMCI guideline not followed in child with severe diarrhoeal disease
<b>Referring Facility &amp; Transit</b>		Delayed arrival of ambulance at referring facility	Child not monitored correctly in ambulance
<b>A&amp;E</b>		Insufficiently trained staff on duty	Volume expander not given to shocked child
<b>Inpatients</b>		No pulse oxymeter for child with severe pneumonia	Oxygen not given to child with severe pneumonia

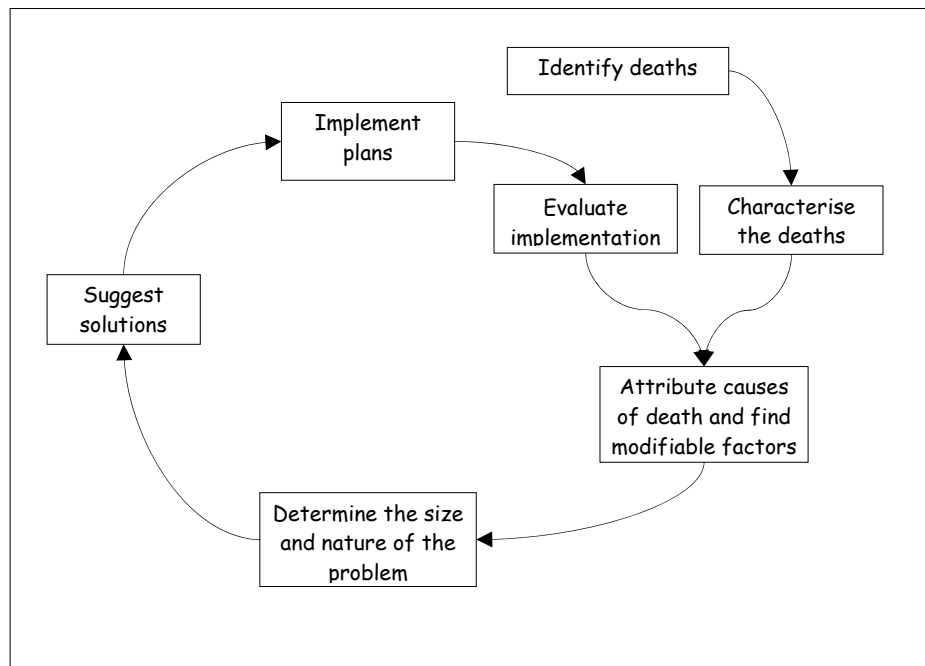
The steps to follow in death auditing are:

- 1) Identify and characterise deaths
- 2) Attribute cause to the deaths
- 3) Find modifiable factors
- 4) Based on findings, determine the size and nature of the problem, and seek reasons for findings, in order to make changes

It is important to locate these activities within a quality improvement cycle, so that any solutions devised and implemented can be assessed for their impact on the problem identified for resolution.



The audit loop below, illustrates the death auditing process:



## HOW DOES CHILD PIP AUDIT DEATHS?

Child PIP assesses the quality of care children receive in the health system by:

- Ensuring all inpatient deaths are identified
- Assigning a cause to each death
- Determining the social, nutritional and HIV context of each child who dies
- Determining modifiable factors in the caring process for each child who dies

Data are analysed using Child PIP software.

From thinking about and analysing the data gathered, interventions targeted at various levels (locally, provincially or nationally) can bring about improvements in care and a reduced mortality in children, which is one of the Millennium Development Goals. But, although Child PIP data can, and is used at this level, it is most valuable at institutional-level, where individuals can work to bring about changes to improve care.

Child PIP moves from the idea that, as individual healthworkers in South Africa we care and, because we care, we reflect, and when we reflect we are faced with the challenging question, 'Is this the best I can do?'

Child PIP provides us with a process for reflecting on the way we care for children, for weighing and measuring the quality of care we give, and identifying ways to bring about change where it is needed. It is vital to always keep in mind that the purpose of Child PIP is not Child PIP, nor the figures, nor the reports it can generate, but the **improvement in the quality of care** that we render. Child PIP can help us to do better because we **want** to do the best we can for every infant and child that enters our health system.





The main activities that make up the overall mortality review are grounded in these ideas, and they are:

- 1) The actual mortality review process
- 2) Data collection: paper
- 3) Data entry: software
- 4) Data analysis and presentation
- 5) Doing these efficiently, thoroughly and systematically, can make change, for the good, happen

All of these activities are enabled by the 'audit tool' that is Child PIP, and are covered in the five modules of the training programme.

## Key Points

- There is a concern about the quality of care given to children in the South African health system
- Death audit is essential for assessing and improving the quality of healthcare children receive
- Child PIP provides a structure for healthworkers to reflect on how they care for children, to measure the quality of care given, and identify ways to bring about change where it is needed
- The purpose of Child PIP is to improve the quality of care children receive in the South African health system



# Module One

## THE MORTALITY REVIEW PROCESS

### Aims

- Introduce concept of the Mortality Review Process
- Learn to conduct constructive and educational Mortality Review Meetings

### Content

#### THE MORTALITY REVIEW PROCESS

The mortality review process consists of a review of the circumstances and causes surrounding the deaths of children in hospital, and this enables the assessment of the quality of care that the children received.

The mortality review process in a paediatrics ward consists of two main activities:

- 1) Data collection (Module 2), and
- 2) Mortality review

#### Mortality Review

The components of the mortality review process are best summarised in the following table:<sup>6</sup>

Component	When	Who	Purpose
<b>1. 24 hour review</b>	Each death should be reviewed and summarised within 24 hours	The attending doctor or nurse at the time of the death	<ul style="list-style-type: none"><li>▪ Ensure all necessary information is captured at a time when information is available</li></ul>
<b>2. Preparatory meeting</b>	Before the Mortality Review Meeting	The doctor and nurse in charge of the ward/unit	<ul style="list-style-type: none"><li>▪ A detailed analysis of <b>all</b> deaths, with <b>case selection</b> for presentation at the Mortality Review Meeting</li><li>▪ Compilation of monthly statistics for presentation at the meeting</li></ul>
<b>3. Mortality review/ Child PIP meeting</b>	Weekly to monthly depending on number of deaths	Whole paediatric department (doctors and nurses) as well as clinic staff	<ul style="list-style-type: none"><li>▪ Presentation of statistics, case discussions and task reviews</li><li>▪ Assign new <b>tasks</b> based on each meeting's discussion</li><li>▪ Ensure all data capture sheets have been <b>completely completed</b></li></ul>
<b>4. Epidemiology &amp; Analysis</b>	6 monthly/annually	Managers and clinical personnel	<ul style="list-style-type: none"><li>▪ Broader problem identification with trend assessment, and with proposed solutions and recommendations</li></ul>

<sup>6</sup> Adapted from Philpott and Voce: "Four key components of a successful perinatal audit process", Kwikskwiz #29, 2001



## THE 24 HOUR REVIEW

Every single death occurring in hospital should be summarised using the Child PIP Death Data Capture sheet at the time of death. The person best placed to do this is either the on-duty doctor or, by way of handover, the daytime team responsible for the long-term care of the child. The death summary should be regarded as no more burdensome, and no less important, than the discharge summary for other children leaving the ward/unit.

It is still best to have a single person in the ward/unit making sure that this process happens and this can be a doctor or a nurse.

## THE PREPARATORY MEETING

This meeting is crucial to ensure a good mortality review meeting. All data capture sheets must be **completely completed**, to the stage of readiness for entry onto the computer. This means that all fields must be filled in, and **codes** must be entered where required. This makes data entry onto the computer efficient and accurate, and allows for any category of employee to enter data.

All cases should be presented although not all need to be discussed in detail. If a senior doctor is available, careful case selection for presentation can be done in an effort to enhance learning opportunities, and facilitate problem identification, and task definition and allocation.

The preparatory meeting is the responsibility of the most senior doctor and most senior nurse in the ward/unit.

## THE MORTALITY REVIEW MEETING

Mortality review meetings are a vital part of Child PIP, providing opportunities for discussing paediatric deaths with all the relevant clinical personnel and giving appropriate feedback.

They can be organised on a daily, weekly or monthly basis and should include as many health workers involved in caring for the children as possible (i.e. doctors, nurses, relevant health managers and workers).

Most important is an atmosphere of trust, mutual respect and confidentiality, which can be promoted by a non-judgemental, non-threatening facilitator, preferably an experienced clinician, who can make the most of 'teachable moments' even when discussion becomes emotive.

**Mortality review meetings are for learning – they are not a court of law**

The structure of mortality review meetings should include (see Practical Tasks for agenda):

- a summarised clinical presentation of each child who has died, or a selection of those cases with the greatest potential for learning
- discussion around whether there were any modifiable factors that could have altered the outcome for a particular child, related to her/his family behaviour, the health administrative services or management by medical personnel
- group discussion attempting to identify problems, particularly their size and nature
- creative thinking to find solutions and overcome identified barriers to change

**Remember the value of a group – group intuition helps to find consensus in analysing problems, in prioritisation of solutions and in implementation**

Mortality meetings must be well organised and managed by the nurse and doctor responsible for the paediatric/children's ward. Meetings should be held weekly to monthly depending on the number of deaths, and a suitable time and venue are needed. All staff involved with child care should be invited (doctors, nurses, allied healthworkers and administrators). Staff must understand that mortality meetings are very important. It is especially helpful to invite staff from clinics referring to the hospital.

Case presentations should be concise and professional. Discussion is encouraged if the presenter does not provide the cause of death and modifiable factors. This is best done by the group.



The structure for case presentations should include the following headings: Child's Details; History of Presenting Complaint; Relevant Background History; Examination; and Problem List, with a summary of investigations, progress and outcome for each problem.

The meeting should by consensus establish the main cause of death and then look carefully for modifiable factors. The meeting must never become a "witch hunt", and should be confidential. The discussions should NOT be dominated by senior doctors. The thoughts and insights of **all** participants make the meeting worthwhile. Remember to encourage participants to describe their feelings as this assists in dealing with negative stress and provides energy for change.

All decisions (causes and modifiable factors) made must be recorded on the mortality sheets (death data capture sheets) for entry later onto a computer. Problems with the process of caring for children in the hospital, the referring clinics and in communities must be identified and prioritised, and plans should be made and documented for addressing each problem. Tasks arising out of discussions around cases should be assigned to team members, and minuted. Progress with the tasks should be reviewed at the start of the next meeting.

**IMPORTANT: Everything discussed at mortality review meetings is CONFIDENTIAL**

## Mortality Review Meeting Agenda

A typical mortality review meeting agenda is as follows:

- 1) Welcome, and introductions and identification of a **minute taker**
- 2) Review of **tasks** set at last meeting
- 3) Summary of **last month's** statistics
- 4) Summary of **this month's** statistics
- 5) **Case** presentations
- 6) **Task** identification and allocation
- 7) Closure and date of next meeting

## EPIDEMIOLOGY AND ANALYSIS

The power of Child PIP lies in its ability to provide instant feedback on child death and quality of care information to ward/unit staff. Simply by initiating this systematic review process, change will happen.

It is however important both for the identification of broader system problems and for monitoring change that 6-monthly or annual reviews are performed. These reviews should be compiled into reports, which document both findings and recommendations arising out of the review. This is the point at which the power of Child PIP can be used for communicating problems to managers. Once the process of mortality review is established in your site, the report will also look at success of implementation of, and response to, previous recommendations.

The Child PIP Report Pro Forma can be used for guiding report writing and will be described in detail in Module 4.



## Making change happen

When making recommendations, it is important to link each recommendation clearly to specific information arising out of your Child PIP review process.

It is then useful to clearly define its requirements for implementation at each of the following levels:

- 1) Policy
- 2) Administration
- 3) Clinical practice
- 4) Education

Finally, responsibility for implementation at each level should be assigned, so that at the next review, implementation (or lack thereof) can be accounted for (for an example of this see *Saving Children 2005* and *Saving Children 2006*).

**By conducting mortality reviews in this systematic way, we will both save lives and improve quality of care, through death auditing**

## Key Points

- The four component Mortality Review Process is an effective and comprehensive system for death audit
- Complete the Death Data Capture sheet within 24 hours of each death
- Mortality review meetings are excellent opportunities for learning and identifying strategies to bring about change



## Practical tasks

### Task: Mortality Review Meeting Role play

#### Instructions for facilitators

The purpose of this task is to allow participants to experience a well-conducted Mortality Review Meeting (MRM).

The facilitator needs to identify a participant to role play as the 'chairperson' for each small group conducting a mortality review meeting, and discuss the process with him/her prior to the role play. It is essential that this person be well-prepared as the success of any role play lies in the 'chairperson's' enthusiasm for creating the 'scene' and keeping to the role.

#### Preparation for role play before the meeting

- Select a case from your hospital to be used for the role play, or use the example provided
- Complete a Child PIP Death Data Capture sheet for the case and include the case summary on the reverse side
- Discuss the MRM Pro Forma with the 'chairperson' in preparation for the role play meeting using the following outline:
  - 1) Welcome:  
Open the meeting with something witty and select a minute taker
  - 2) Task Review:  
Think up two tasks and pick two people to report back on the task (For example: A SATS monitor in the ward had not working the previous week and someone had been tasked to find out more about it)
  - 3) Last Month's Statistics:  
Make up admissions, deaths, work out inpatient death rate, remind of something striking
  - 4) This Month's Statistics:  
Make up admissions, deaths, work out inpatient death rate, select one case
  - 5) Case Presentation:  
Choose someone to present the case (using the prepared case summary)

#### Causes of death (Group discussion)

During the role play write down suggestions on the MRM Agenda provided, reminding participants to enter codes on the data capture sheet (use code lists in Appendix 2)

#### Modifiable Factors (Group discussion)

During the role play write down the suggested modifiable factors on the pro forma provided or use a white board as could be used in an actual meeting. Then try to assign codes, and remind participants to enter codes on the data capture sheet (use code lists in Appendix 2)

#### Was the death avoidable?

A show of hands will do, but if there's time it can be very useful to have discussion around this

- 6) Feelings:  
Ask participants what the case presentation and discussion made them feel. Feelings of anger, frustration etc, though negative, have lots of energy attached to them, and this energy can be positively channelled through Child PIP



- 7) Task identification and assignment:  
Identify tasks that arise out of the case discussion and assign responsibility and time frame
- 8) Closure and Date of Next Meeting:  
Say something inspiring, before deciding the date

### **At the MRM Role Play**

- Ensure you have a blue Child PIP folder containing code lists for the meeting and give copies to the 'chairperson' of each small group
- Organise small groups (up to 10 participants)
- Assist the 'chairperson' to select a Minute taker, and identify and brief the two people giving fictitious feedback for the tasks from the previous month's meeting. The 'chairperson' should also assign one person to give the case presentation
- Distribute a MRM Agenda to each person
- Start the meeting...
- Allow time for debriefing after the meeting as lots of learning happens then

### **Materials**

#### **1 A COMPLETED CHILD PIP DEATH DCS, WITH A CLINICAL SUMMARY**

See overleaf

#### **2 THE MORTALITY REVIEW MEETING AGENDA**

One per person (see overleaf)

#### **3 A CHILD PIP BLUE FOLDER**

One per small group



Hospital: Matikwana

Child Healthcare Problem Identification Programme

Ward: P1Deaths Register No: 11/10

## Child Death Data Capture Sheet

Child PIP v3.0.2

Entered on computer: \_\_\_\_\_

*Confidential document*

Patient name: <u>T.N.</u>				Folder no: <u>2103/04</u>				Residential Subdistrict: <u>Bushbuckridge</u>			
DoB	<u>2006-08-18</u> yyyy-mm-dd	Age	pc auto	Gender	<input checked="" type="radio"/> / <input type="radio"/> / <input type="radio"/>	Re-admission	<input type="radio"/> / <input checked="" type="radio"/> / <input type="radio"/>	Dead on arrival	<input type="radio"/> / <input checked="" type="radio"/> / <input type="radio"/>		
Date of Admission	<u>2007-10-22</u> yyyy-mm-dd	Time of Admission	<u>02:00</u> hh:mm		When death occurred		Weekend / Public holiday				
Date of Death	<u>2007-10-22</u> yyyy-mm-dd	Time of Death	<u>13:50</u> hh:mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00)		Unknown		

## Records (include RTHC assessment)

1. Folder not available	2. Folder present, records <u>incomplete</u>	3. Folder present, notes <u>inadequate</u> (quality of notes is poor)	4. Folder present, records <u>incomplete</u> AND notes <u>inadequate</u>	5. Folder available, records & notes OK
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## Referred

	Name of referring hospital/clinic:				
<input checked="" type="radio"/> / <input type="radio"/> / <input type="radio"/>	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

## Social

Mother	1. Alive and well <input checked="" type="radio"/>	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother <input checked="" type="radio"/>	2. Grandmother	3. Father
Father	1. Alive and well <input checked="" type="radio"/>	2. Dead	3. Sick	Unknown		4. Other: _____	Unknown	

Nutrition (tick one category box, then fill in actual weight)

1. OWFA	2. Normal	3. UWFA	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight _____ kg
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## HIV &amp; AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)

Lab	1. Negative	2. Exposed	3. <input checked="" type="radio"/> Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown
Clinical	1. Stage I	2. Stage II	3. <input checked="" type="radio"/> Stage III	4. Stage IV	5. Not staged (but indicated)	6. Not staged (not indicated)	Unknown
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		<input checked="" type="radio"/> Unknown
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		<input checked="" type="radio"/> Unknown
Cotrimoxazole	1. Current	2. Ever	3. Never (but indicated)	4. Never (not indicated)	<input checked="" type="radio"/> Unknown		
ART (child)	1. Current	2. Ever	3. Never (but indicated)	4. Never (not indicated)	<input checked="" type="radio"/> Unknown		
ART (mother)	1. Current	2. Ever	3. Never (but indicated)	4. Never (not indicated)	<input checked="" type="radio"/> Unknown		

## Cause of Death (insert codes)

Main cause of death:	Underlying condition (if any):			
Other important diagnoses (max 4):				

## Modifiable Factors (insert codes)

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Code Clinic/Outpatients		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
Code	Admissions & Emergency: Hospital		Comments		Home		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	

## In your opinion, had the process of caring been different, would this death have been avoidable?

1. Yes	2. Not sure	3. No	Unknown
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**Case Summary/Comments (write summary at time of death, if possible)****Child's Details** (age, weight, where from, admission date/time)

TN was a 14/12 boy admitted just after midnight on 22 October 2007 with a history of a chest infection

**History of Presenting Complaint**

Difficulty breathing and tight chest for 1/7

**Relevant Background History** (including details of HIV and TB)

Perinatal history: NVD, cried at birth, no BW or any other perinatal information. Immunisations: RTHC at home, reportedly up to date. Food: formula and solids, no information on whether ever breast fed. Growth: no weight recorded, looked marasmic, could sit, but not crawl or walk. Family history: nil of note.

Social history: lived with mother and father in a single room with electricity. Outside water and toilet. No income, no grant. Past Medical History: vague history of asthma, but never treated. Tested for HIV in referring hospital, reportedly positive. One previous admission for gastro.

**Examination**

Temp 38°C, pulse 208, sats 99% in air. Generalised adenopathy, wasting, stridor, no oral thrush, 5% dry, warm peripheries. RS: RR 45, diffuse crepitations, severe s/c recession. CVS: no murmur. GIT: 3cm liver, 3cm spleen. CNS: floppy, ?bulging fontanelle.

**Problem List**

Problem	Investigations	Progress	Outcome
1. HIV stage III			No HIV result confirmed
2. Encephalopathic			? Diagnosis
3. FTT			
4. ARI with lower airway obstruction/?PCP	Bloods, CXR Hb 10; Plt 225; WCC 19; ph 7.39, pCO2 3.4, BE -8.2	Oxygen, IV antibiotics	Died

**Comments**

At 05:45: child noted to be fitting, aborted with IV diazepam. Glucose 2.8. Given 50% dextrose, antibiotics changed.

On ward round, afebrile, crepitations, bulging fontanelle. For LP.

12:30: LP unsuccessful. MO asked for assistance, but everyone too busy.

13:50: MO called to patient who was cold with fixed, dilated pupils.



# Mortality Review Meeting Agenda

Child PIP v3.1



Chairperson:

Minutes:

## Agenda

- 1) WELCOME
- 2) TASK REVIEW
- 3) LAST MONTH'S STATISTICS
- 4) THIS MONTH'S STATISTICS
- 5) CASE PRESENTATIONS

**NB: Repeat the format below for each case presented**

1. Summary (Presenter)
2. Causes of death (Group discussion): enter the CODES

<b>Main</b>				
<b>Other Diagnoses</b>				
<b>Underlying condition</b>				

3. Modifiable Factors (Group discussion): enter the CODES

	<b>Clinical Personnel</b>	<b>Administrator</b>	<b>Caregiver</b>
<b>Ward (Hospital)</b>			
<b>A&amp;E (Hospital)</b>			
<b>Referring Facility &amp; Transit</b>			
<b>Clinic &amp; Outpatients</b>			
<b>Home</b>			

4. Was the death avoidable?

<b>Yes</b>	<b>Not sure</b>	<b>No</b>	<b>Unknown</b>
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- 6) FEELINGS
- 7) TASK IDENTIFICATION AND ASSIGNMENT

<b>Task</b>	<b>By whom?</b>	<b>By when?</b>

- 8) CLOSURE AND DATE OF NEXT MEETING



Child Healthcare Problem Identification Programme

# TRAINING AND REFERENCE MANUAL

Child PIP v3.1

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## MODULE TWO

# DATA COLLECTION: PAPER

### Aims

- Identify Child PIP data sources and understand the importance of efficient data management
- Develop Child PIP data collection skills

### Content

Data collection is a vital part of the mortality review process and must be taken seriously. The Saving Children reports are taken seriously at local, provincial, national and international levels. If data management is efficient and meticulously correct, the value of your hospital database, the national database and the Saving Children reports will be enhanced. And you will enhance your ability to make change happen!

**It is absolutely essential to get the paper data management process right, BEFORE you start using the software**

For data collection to be efficient we have to identify the relevant data sources, transfer the correct data onto the data sheets (which are stored in an organised way) and then we must track the data carefully to ensure that we do not lose any information.

## ORGANISING DATA

### Data Sources

There are two data sources from which information is collected for Child PIP:

- 1) the **ward Admissions and Discharge register**, and
- 2) the **clinical records** of children who have died

It is vital that these two sources of data are well organised so that accurate information can be collected.

#### Ward Admissions and Discharge Register

The ward Admissions and Discharge Register is the source of information for the Child PIP **Monthly Tally Sheet**, which collects data on all admissions and deaths in the paediatric ward, recording age, weight and discharge diagnosis for each admission. It is essential that the ward register be designed in such a way to easily record all the required information. An example of an Admissions and Discharge Register is included in Appendix 5 and is available on the CD.

#### Clinical Records

A child's clinical records are the vital source documents for accurate completion of the Child PIP **Death Data Capture Sheet** (DCS), and one of these is completed per death. Remember that this information is confidential. Accurate and complete data can only be recorded if it was gathered from the child on admission. It is essential that each child's admission sheet be organised in such a way that ALL important information is recorded. This is not simply to ensure complete Child PIP data gathering, but is of vital importance for each child's management and care plan, leading to improved care.

An example of a paediatric patient Admission Clerking Sheet has been developed specifically for use with Child PIP and is included in Appendix 5, as well as on the CD.



## Data Storage

It is most important to develop an effective system for data storage adapted to your situation.

A blue Child PIP folder is provided with the programme, and includes the following:

- growth charts
- code lists for Causes of Death and Modifiable Factors
- HIV definition and staging sheet
- a section for collected data, with monthly dividers and a Monthly Tally Sheet, Deaths Register and completed Child Death Data Capture Sheets (DCS) for each month
- a section for blank data collection forms (Monthly Tally, Deaths Register and Death DCS)

If you do not have a blue folder then please order one from Mrs Roz Prinsloo (MRC Unit for Infant and Maternal Health Care Strategies). In the meantime it will be necessary to print (using the View/Print Documents tab on the Main Menu of the Programme) and then photocopy sufficient forms, code lists and growth charts for your use, organising them as outlined above in a labelled lever arch file.

## Data Tracking

Every death counts and it is thus very important that no death is missed. For this reason it is necessary to organise the tracking of data from each death, from the folder until the data is entered onto the computer programme.

### Clinical records

A cardboard box (perhaps labelled 'Child PIP Box') should be kept in each ward where clinical records of children who have died can be put prior to the completion of the Child PIP forms. Alternatively, if the clinical records go to the mortuary, arrangements must be made with the mortuary staff to retrieve them for proper review if this was not done immediately after the child's death. It may also be useful to keep a copy of the child's death certificate.

### Monthly Deaths Register

Every time a child dies the details should be recorded on the Monthly Deaths Register kept in the Child PIP file (see Appendix 1). Each death is given a number on the register (Deaths Register No.) which is also recorded on the Death DCS and is very useful for cross checking at the end of every month. The Deaths Register number is best recorded chronologically for a particular month (e.g. deaths in March would be recorded as 1/03, 2/03, 3/03 etc). This register also keeps a record of the basic information from each death which can be useful if clinical records go missing.

### Child PIP forms

Once Child PIP forms are completed they must immediately be put into the correct place in the Child PIP file, awaiting entry onto the computer.

**Remember that the Child PIP Death Data Capture Sheet is a confidential document!**

## Data entry onto computer

When data is entered onto the computer it is essential that each sheet is clearly marked otherwise data can be entered twice or not at all. The Death DCS has a space at the top right corner of the sheet for a tick and the date of entry, or a line can be drawn across the sheet.

To complete data the Monthly Deaths Register has a column headed "Entered on PC" and this should be completed once the data has been entered onto the computer.



## MONTHLY ADMISSION DATA

### Monthly Tally Sheet

Child PIP collects information about **all** the child admissions and deaths in a ward each month on the Monthly Tally Sheet (see Appendix 1). The ages of all children are entered in the top block of the sheet, and the weight and diagnosis for children under 5 years are entered in the bottom block. The Monthly Tally Sheet should preferably be completed by a sister or doctor in the ward (not the ward clerk), as assessing the most appropriate diagnosis information requires knowledge of the patients.

This information is used to calculate in-hospital mortality rates (IHMR). A number of different rates can also be calculated using deaths and admissions according to age, weight and diagnosis BUT these will not be accurate if the denominator (i.e. the number of admissions by category) is not carefully recorded.

Please note the following important points:

- complete the Monthly Tally Sheet at the end of each month, using your ward's Admissions and Discharge Register
- remember to include **all** children admitted to your institution's healthcare services
- for this process, it is very helpful if the Admissions and Discharge Register has headings that include: Age (or date of birth), Weight category (above or below 3<sup>rd</sup> centile) and Diagnosis (preferably a **discharge** diagnosis)
- complete the top section of the Monthly Tally sheet for ALL children admitted
- if your ward register does not have age information for admissions, enter the total number of admissions and deaths in the 'Unknown' row
- complete the bottom section (Weight and Illness) **ONLY** for children < 5 yrs
- **count only one diagnosis per admission** (choose the most significant diagnosis)
- it is also vital for accurate in-hospital mortality rate or IHMR calculation, (previously referred to as the case fatality rate or CFR in Child PIP), that children transferred between wards within the same hospital are only counted once and are not entered as multiple admissions, i.e. **count each admission only once**
- in-hospital mortality rates (IHMRs) are calculated for each age group, and for the under-5s, an IHMR for each weight category, the specified illnesses (Acute lower respiratory infections; Diarrhoeal disease) as well as the remaining illnesses (Other), by the software programme but these can also be calculated manually

The formula is: 
$$\text{IHMR} = \frac{\text{deaths}}{\text{admissions}} \times 100$$

## INDIVIDUAL DEATH DATA

### Death Data Capture Sheet (DCS)

The Child PIP Death Data Capture Sheet can gather comprehensive information about a child who died including an assessment of the quality of care that was received. It is vital that good quality data be entered onto the Death DCS for meaningful analysis and problem identification. "Garbage in – garbage out" accurately reflects the importance of respecting data and recording it with integrity.

The use of a paediatric patient admission sheet (See Appendix 5) specifically designed to dovetail with Child PIP can greatly assist with completing the Death DCS, which should be completed:





- preferably within 24 hours of a child's death and in discussion with all care givers involved (include a summary on the reverse side of the Death DCS which is very useful should a file go missing)
- or, at a Mortality Meeting held for this purpose
- or, on your own after carefully perusing each folder

**Whichever method is used to complete the Death DCS, involve as many doctors and nurses as possible, AND remember it is a confidential document**

### **Important!! Neonatal deaths**

- ALL neonatal deaths should be captured in PPIP, wherever they occurred (nursery or the children's ward), otherwise important neonatal mortality rate (NMR) information is lost
- If the neonatal death occurred in the children's ward it must be captured in Child PIP as well as PPIP, otherwise important quality-of-care information will be lost

### **NOTES ON COMPLETING THE DEATH DATA CAPTURE SHEET:**

**PLEASE COMPLETE ALL SECTIONS  
AND SELECT THE APPROPRIATE OPTION FOR EVERY QUESTION**

Complete the top section of the form filling in your Hospital name, Ward and Deaths Register No.

### **Patient**

Fill in all the child's details (name may be excluded, but include folder number for your own cross referencing). Residential Subdistrict refers to where the child has been resident for at least one month prior to admission. Date of birth and gender must be completed.

Determine whether the child was a re-admission, i.e. re-admitted for the same problem within one month, and whether or not the child was dead on arrival.

Date of admission (DoA) and time of admission (ToA), as well as the date of death (DoD) and time of death (ToD) should be completed - this information can be gathered from the folder and/or the Death Certificate.

It is also important to note whether the death occurred on a public holiday or not, as the software automatically calculates weekdays and weekends but cannot identify public holidays. Weekdays refer to 07:00 to 19:00; weeknights refer to 19:00 to 07:00 and weekends refer to Friday 19:00 to Monday 07:00.

### **Records**

N.B. Road to Health charts and other documents on pre-hospital care should be copied and kept in the child's folder.

The quality of the records for each child needs to be assessed i.e. whether the folder was available (or not), the records complete (or not) and/or the notes adequate (or not). Try and assess the quality of the records objectively and choose the option that best describes what you found.

### **Referred**

Record whether the child was referred and if applicable and available, include the name of the hospital or clinic from which the child was sent.

If the child was referred, select from which healthcare provider (hospital, clinic, private practitioner, or unknown) and whether the referral came from inside or outside the drainage area of your hospital. To determine the drainage area for your hospital, consult your hospital manager or provincial department of health and perhaps request a map from the GIS Unit in your health informatics department.

### **Social**

The purpose of this section is to record the well-being (or not) of the child's mother and father and to determine who the primary caregiver was. 'Alive and well' implies that the parent was able to care for the child, whereas 'Sick' implies bed-ridden.

**Nutrition**

It is essential for quality care that the child's weight, height and nutritional status are known and recorded on admission to the ward. Record the child's weight on the Death DCS (in kg), then, using the appropriate growth charts, select one of the options below describing the child's nutritional status.

The new WHO growth charts are included in the Child PIP v3.1 programme, in line with international and local recommendations from the WHO and the National Department of Health in South Africa respectively.

Using the **CDC charts** and the Welcome Classification:

OWFA	Normal	UWFA	Marasmus	Kwashiorkor	M-K	Unknown
> 97 <sup>th</sup> centile	Between the 97 <sup>th</sup> and 3 <sup>rd</sup> centile	< 3 <sup>rd</sup> centile but > 60% of expected weight	< 60% of expected weight	< 3 <sup>rd</sup> centile but > 60% of expected weight, with oedema	60% of expected weight, with oedema	Either weight or age unknown

Using the **WHO Z-score charts** for Weight-for-Age: (remember that weight-for-length/height or BMI-for-age should be plotted as well for accurate assessment of nutritional status)

OWFA	Normal	UWFA	Marasmus	Kwashiorkor	M-K	Unknown
Above 2 Z-score	Between 2 and -2 Z-score	Between -2 and -3 Z-score, WITHOUT symmetrical oedema	Below -3 Z-score	Below -2 Z-score, WITH symmetrical oedema	Below -3 Z-score, WITH symmetrical oedema	Either weight or age unknown

**HIV&AIDS**

The aim of this section on the Death DCS is to accurately gather data around the HIV experience of the child and her/his mother AT THE TIME OF ADMISSION. It will be necessary to carefully study the definitions of the various options described below to make this data as accurate as possible.

**Lab**

The laboratory results should be recorded in the folder. It is very important to record these results accurately and not guess or record a suspicion.

**Negative**

- child tested antibody or antigen negative, with either a rapid, ELISA or PCR test

**Exposed**

- mother tested antibody positive (preferably with ELISA confirmation) in pregnancy, or later, OR
- a child **under** 18 months of age with a positive antibody test (rapid, preferably with ELISA confirmation)

**Infected**

- a child **over** 18 months of age with positive antibody test (rapid, preferably with ELISA confirmation)
- antigen positive at any age (PCR not usually recommended until at least 6 weeks, as it may take time for the viral load to reach PCR detectable levels)

**No result**

- test requested but no result available or result equivocal

**Not tested (but/not indicated)**

- neither the mother nor child were tested either due to an omission ('but indicated') or because it was 'not indicated'

**Unknown**

- insufficient information available to make one of the above choices

**Clinical**

The **Interim Revised WHO Clinical Staging Classification for HIV** is in Appendix 4 and should be used for the clinical staging of all children with confirmed laboratory evidence of HIV-infection to assist with management choices. It is valuable to make copies to display on the wall of your clinic or ward.

**Stage I, Stage II, Stage III, Stage IV**

- tick the most advanced stage for which the child had one or more of the conditions described

**Not staged (but/not indicated)**

- HIV infection not suspected ('not indicated'), or
- HIV infection suspected but staging not done ('but indicated')

**Unknown**

- insufficient information to make one of the above choices

**Perinatal ARV (PMTCT)**

A functioning PMTCT programme is vital for reducing morbidity and mortality in children. It is therefore essential to record PMTCT information comprehensively so that the efficacy of PMTCT can be assessed.

**Prophylaxis given/not given**

- this includes nevirapine or any other ARVs used for prevention of vertical transmission

**Mother negative at delivery**

- record if information available

**Unknown**

- insufficient information to make one of the above choices

**Feeding in first 6 months****Exclusive breast for 6/12**

- i.e. breast milk ONLY

**No breast, ever**

- i.e. NO breast milk at all

**Mixed, from birth**

- i.e. a combination of breast and formula at any time during the first 6 months of age

**Unknown**

- insufficient information to make one of the above choices

**Cotrimoxazole (for PCP prophylaxis)**

Select the option that best describes the child's **pre-admission** exposure to cotrimoxazole prophylaxis, EXCLUDING therapeutic cotrimoxazole.

**ART (child) and ART (mother)**

Select the option that best describes the child's and the mother's exposure to ART. This refers to any antiretroviral therapy, apart from PMTCT, used at the time of the child's presentation or any time prior to presentation.

**Cause of Death**

<b>You must write the CODES for each diagnosis, not the words!</b>
--

**Main cause of death**

Consult the Causes of Death list (an abbreviated list of the most common diagnoses, each with a code, compiled as part of Child PIP – see Appendix 2). You may enter only ONE code here and try to select the *main cause* that led to the child's *death*.

**Other important diagnoses**

If there are other diagnoses that also contributed to the child's death, up to FOUR may be selected from the Causes of Death code list, and entered here as codes.



### ***Underlying condition***

Occasionally there may be an underlying condition that did not directly impact on the child's death but may have contributed to his/her illness. If so, select ONE of the six Underlying Conditions listed at the end of the Causes of Death, and enter the code.

### **Modifiable Factors (MFs)**

**Modifiable factors refer to circumstances where opportunities were missed or substandard care given which may have altered the outcome for a specific child**

Up to four or five MFs per section can be recorded using the relevant codes from the Modifiable Factors list (see Appendix 2). Comments can be added in the space provided that would further expand the MF code, as necessary.

When identifying a MF we look at:

- **where** the circumstance occurred
  - in your hospital ward, in the admission and emergency section of your hospital, at the referring facility or in transit, at clinic/ambulatory care level, or in the home
- **who** was responsible
  - clinical personnel, administrators, or the family

### ***Grading (Probable/Possible)***

After entering a MF code you are required to indicate whether this factor *probably* or *possibly* caused or facilitated the child's death.

- 'Probable' refers to an incident which if handled differently would probably have prevented the death from occurring
- 'Possible/?' describes a factor which may have, but not necessarily, contributed to the death or where it is impossible to make a judgement.

**You must write the CODES for each modifiable factor, not just the words!**

### **Was the death avoidable?**

This is the final reflection about a child's death and can be a challenging question to answer. It is important to determine whether or not the child's death could have been avoided had the quality of healthcare at a particular level been adequate. This is often best decided after discussion and a vote within the group.

### **Case Summary/Comments**

Space is provided on the reverse of the Death DCS to write a full case summary for your own use and to assist with concise, professional case presentations at mortality review meetings.

## Key points

- Data sources must be identified and well organised before data collection begins
- Keeping Child PIP data forms in a blue folder in the ward prevents loss of data
- The Monthly Tally sheet must be accurately completed so that the in-hospital mortality rates can be meaningful
- Each child who dies must have a Death Data Capture Sheet completed as completely and accurately as possible
- Always use the number codes for Cause of Death and Modifiable Factors
- Remember: Garbage in = Garbage out (GIGO!)



## Practical tasks

### Task 1: Review a Child PIP blue folder

#### Instructions for facilitators

The purpose of this task is to enable participants to become familiar with the contents of the Child PIP blue folder and how it is organised. Encourage participants to follow the data tracking process across the forms (Deaths Register and Death DCS).

#### Materials

##### 1 CHILD PIP BLUE FOLDER (ONE PER SITE)

### Task 2: Completing the Monthly Tally Sheet

#### Instructions for facilitators

The purpose of this task is to give participants practice in working with a ward Admissions and Discharge Register to gather the data required for the Monthly Tally Sheet.

An example of a ward register is provided but it would be best to use the register from the participants' own hospital, making photocopies of three or four pages for use in this task.

N.B. Discuss the format and headings of the ward Admissions and Discharge Register and encourage participants to consider using the example provided in Appendix 5 in their own institution.

- Group participants in pairs
- Distribute copies of the hospital Admissions and Discharge Register
- Distribute a blank sheet of paper and writing materials
- Ask participants to re-read the section on the Monthly Tally Sheet
- Allow 20-25 minutes for completion of a blank Monthly Tally Sheet in the training manual
- Discuss the problems and pitfalls of this process (5-10 minutes), emphasising:
  - counting is best done **in rough** on a blank sheet of paper and the final numbers entered onto the Monthly Tally Sheet
  - a simple **counting style** is useful, e.g. groups of five—III
  - **count child-by-child**, i.e. for the first admission in the Ward Register, mark the age category, weight category and diagnosis, then move onto the second admission and do the same
  - the **tallies must tally**, i.e. the sum of those marked in the three under-five categories must equal the under-five totals in the bottom section of the Monthly Tally Sheet

#### Materials

##### 1 WARD ADMISSIONS AND DISCHARGE REGISTER AND MONTHLY TALLY SHEET

See overleaf

##### 2 BLANK SHEET OF PAPER/PENCIL

Please provide for each participant



# Paediatric Ward Admissions and Discharge Register

Year: 2008 Month: MAY Ward: B Hospital: PHB CENTRAL

No.	Surname Name Folder Number	Carer Name Telephone Street, Town	DoB	Age	DoA ToA	From?	Weight & Gender	Nutrition status: o/n/u/k/ m/m-k	Diagnosis	DoD ToD	To?	ChIP reg y/n
1	MBANTWA SPHESIKILE 08/05012	PHUMZILE FAWN LEAS	13.01.08	3 MTHS	01.05.08	APPELS- BOSCH	4,9kg M	N	FOCAL SEIZURES	07.05.08	APPELS- BOSCH	
2	NGCOBO THABISO 08/05023	THANDI EDENDALE	13.08.00	7 YRS	01.05.08	HOME	25,2kg M	U	SEVERE ANAEHTIA	06.05.08	HOME	
3	HLATSWAYO SANDILE 08/05037	THOBELA SOBANTU	15.01.07	1 YR	02.05.08	CLINIC	M	U	PNEUMONIA PULMONARY TUBERCULOSIS	03.05.08	DIED	Y
4	DLAMINI THOBELA 08/05043	NTANDO EDENDALE	04.11.07	5 MTHS	03.05.08	T/in FROM EDENDALE HOSPITAL	5kg F	U	FAILURE TO THRIVE PULMONARY TUBERCULOSIS	16.05.08	EDENDALE HOSPITAL	
5	SEDIIBE SIBUSISO 08/05070	NOSIPHO WILLOWFENTIN	02.01.02	6 YRS	04.05.08	HOME	14,6kg M	N	MENINGITIS PNEUMONIA	05.05.08	DIED	Y
6	BHENGU LUTANDA 08/05072	ZIMBILI SOBANTU	26.11.96	12 YRS	04.05.08	NORTHBUR HOSPITAL	21,2kg M	K	VOMITTING DEHYDRATION	13.05.08	NORTHBUR HOSPITAL	
7	MBANTWA SAMKELO 08/05079	SHANGELE DALTON	29.06.94	13 YRS	04.05.08	HOME	29kg F	U	TB - PULMONARY	08.05.08	HOME	
8	MWELI THANDOWETHU 08/05093	ZANDILE EDENDALE	27.03.08		06.05.08	EDENDALE HOSP.	F		RESPIRATORY INFECTION	14.05.08	EDENDALE HOSPITAL	
Totals												

DoB = date of birth; DoA = date of admission; ToA = time of admission; From? = enter where patient came from (e.g. another ward, home, clinic, another hospital); Nutrition status: o/n/u/k/m/m-k = overweight/normal/underweight for age/kwashiorkor/marasmus/marasmus-kwashiorkor; Dx = admission diagnosis (enter main reason for admission but update if diagnosis changes or child dies); DoD = date of discharge OR death; ToD = time of discharge OR death; To? = enter where patient was discharged to (e.g. another ward, home, clinic, POPD, another hospital, died); ChIP reg y/n = yes/no for entry on the Child PIP death register

# Paediatric Ward Admissions and Discharge Register

Year: 2008 Month: MAY Ward: B Hospital: PMB CENTRAL

No.	Surname Name Folder Number	Caregiver Name Telephone Street, Town	DoB	Age	DoA ToA	From?	Weight & Gender	Nutrition status: o/n/u/k/ m/m-k	Diagnosis	DoD ToD	To?	CHIP reg y/n
9	DLAMINI	KWAME	09.08. 1995	12 YRS	07.05. 08	CLINIC	34,6kg F	N	SEXUAL ABUSE BEHAVIORAL DISORDER	14.05.08	HOME	
	THANDOWETHU 08/05101	SOBANTU										
10	NDLOVU	THEMBEKA	03.01.08	4 MTHS	08.05. 08	HOME	4,5kg F	U	GASTRO- ENTERITIS PNEUMONIA	18.05.08	DIED	Y
	NOMVELO 08/05109	EDENDALE										
11	MPUNGOSE	NOMBENHLE	23.04.05	3 YRS	10.05. 08	NEWCASTLE HOSPITAL			NEPHROTIC SYNDROME	11.05.08	NEWCASTLE HOSPITAL	
	NOMCEBO 08/05133	NEWCASTLE										
12	ZULU	LINDO	24.10. 2005	2 YRS	10.05. 08	HOME	10,2kg F	U	RIGHT AUXILIARY ABSCESS	26.05.08	HOME	
	NQOBILE 08/05137	EDENDALE										
13	MKHULISA	PRUME	09.02. 08	3 MTHS	11.05. 08	P. ICU	2,5kg M	N	(BRONCHO- PNEUMONIA) URTI	11.05.08	EDENDALE HOSP.	
	MEANAFUTHI 08/05152	EDENDALE										
14	NGUBANE	THOKO	04.01. 2000	8 YRS	13.05. 08	P. ICU	29,2kg M	N	STEVEN JOHNSON/ EPILEPSY	14.05.08	NORTHDALE HOSP.	
	MUZI 08/05163	SWEETWATERS										
15	KHAMBULE	LUNGILE	05.03. 08	2 MTHS	13.05. 08	P. ICU	4,0 kg F	N	INCISION & DRAINAGE OF LEFT ORBITAL ABSCESS	15.05.08	NORTHDALE HOSP.	
	BHEKI 08/05164	SOBANTU										
16	NDLUWAZI		16.02.08	2 MTHS	15.05. 08	COSH	2,9kg F		RECURRING VOMITING	22.05.08	P. ICU	
	NOMHLASHULA 08/05178											
Totals												

DoB = date of birth; DoA = date of admission; ToA = time of admission; From? = enter where patient came from (e.g. another ward, home, clinic, another hospital); Nutrition status: o/n/u/k/m/m-k = overweight/normal/underweight for age/kwashiorkor/marasmus/marasmic-kwashiorkor; Dx = admission diagnosis (enter main reason for admission but update if diagnosis changes or child dies); DoD = date of discharge OR death; ToD = time of discharge OR death; To? = enter where patient was discharged to (e.g. another ward, home, clinic, POPD, another hospital, died); CHIP reg y/n = yes/no for entry on the Child PIP death register



# Paediatric Ward Admissions and Discharge Register

Year: 2008 Month: MAY Ward: B Hospital: PMB CENTRAL

No.	Surname Name Folder Number	Caregiver Name Telephone Street, Town	DoB	Age	DoA ToA	From?	Weight & Gender	Nutrition status: o/n/u/k/ m/m-k	Diagnosis	DoD ToD	To?	ChIP reg y/n
17	DAVIS	AMANDA	10.03. 08	2 MTHS	16.05. 08	HOME	5,8kg M	N	PYREXIA OF UNKNOWN ORIGIN	01.06. 08	HOME	
	AIDEN DANIEL											
	08/05191	SCOTTSVILLE										
18	MKHIIZE	NOKUTHULA	21.04. 06	2 YRS	16.05. 08	CLINIC	8,8kg F		BILIARY ATRESIA	18.05. 08	HOME	
	BAWIHILE											
	08/05195											
19	MBHELE	SHANGELE	07.03. 08	2 MTHS	18.05. 08	MONTOMO- BELLO HOSP.	3,9kg M	U	MICROCEPHALY DEHYDRATION WITH ACIDOSIS	21.05. 08	MONTOMO- BELLO HOSP.	
	LWAZI											
	08/05204	MOUNT ELIAS										
20	SHEZI	THOBILE	06.02. 2001	7 YRS	19.05. 08	CHRIST THE KING HOSP.	F		ENCEPHALITIS	22.05. 08	INK. ALBERT LUTHULI HOSP.	
	NOSIPHO											
	08/05207											
21	NGCOBO	THOBELA	05.04. 08	1 MTH	21.05. 08	HOME	F		PNEUMONIA	22.05. 08	DIED	Y
	THANDOLWETHU											
	08/05219	EDENDALE										
22	SHANGASE	SIBONGILE	20.09. 2000	7 YRS	22.05. 08	INK. ALBERT LUTHULI HOSP.	36kg F	O	OBESITY ASTHMA	23.05. 08	HOME	
	PHUMZILE											
	08/05231											
23	SITHOLE	KHUMBIZILE	24.10. 1998	9 yrs	22.05. 08	CTK HOSP.	31,6kg M	N	OBSTRUCTIVE JAUNDICE	03.06. 08	CTK HOSP.	
	ASANDA											
	08/05234											
24	MSOMI	ZANDILE	14.03. 1999.	9 yrs	24.05. 08	HOME	F		PUD	26.05. 08	HOME	
	NTOMBENHLE											
	08/05247	CATO RIDGE										
Totals												

DoB = date of birth; DoA = date of admission; ToA = time of admission; From? = enter where patient came from (e.g. another ward, home, clinic, another hospital); Nutrition status: o/n/u/k/m-m-k = overweight/normal/underweight for age/kwashiorkor/marasmus/marasmus-kwashiorkor; Dx = admission diagnosis (enter main reason for admission but update if diagnosis changes or child dies); DoD = date of discharge OR death; ToD = time of discharge OR death; To? = enter where patient was discharged to (e.g. another ward, home, clinic, POPD, another hospital, died); ChIP reg y/n = yes/no for entry on the Child PIP death register

## Paediatric Ward Admissions and Discharge Register

Year:

Totals

**DoB** = date of birth; **DoA** = date of admission; **ToA** = time of admission; **From?** = enter where patient came from (e.g. another ward, home, clinic, another hospital); **Nutrition status:** o/n/u/k/m/m-k = overweight/normal/underweight for age/kwashiorkor/marasmus/marasmic-kwashiorkor; **Dx** = admission diagnosis (enter main reason for admission but update if diagnosis changes or child dies); **DoD** = date of discharge OR death; **ToD** = time of discharge OR death; **To?** = enter where patient was discharged to (e.g. another ward, home, clinic, POPD, another hospital, died); **CHIP** reg y/n = yes/no for entry on the Child PIP death register



# Monthly Tally Sheet

Child PIP v3.1



Hospital: \_\_\_\_\_

Year: \_\_\_\_\_

Ward: \_\_\_\_\_

Month: \_\_\_\_\_

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
<b>Age</b>	0 - < 28 days			
	≥ 28 days - < 1 yr			
	≥ 1 yr - < 5 yrs			
	≥ 5 yrs - < 13 yrs			
	≥ 13 yrs - 18 yrs			
	Unknown			
	<b>Totals</b>			

<b>Complete information below for children <u>&lt; 5 years only</u></b>				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
<b>Weight</b>	Above or on 3 <sup>rd</sup> centile			
	UWFA			
	Severe malnutrition <sup>3</sup>			
	Unknown			
	<b>Totals (&lt; 5 years)</b>			
<b>Illness</b>	Acute respiratory infections (ARI)			
	Diarrhoeal disease (DD)			
	Other			
	<b>Totals (&lt; 5 years)</b>			

**Notes:**

1. Include **all** children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated: 
$$\text{IHMR} = \frac{\text{deaths}}{\text{admissions}} \times 100$$

Compiled by: \_\_\_\_\_ (Print name) \_\_\_\_\_ (Sign)

Date: \_\_\_\_\_ Fax/Tel number: \_\_\_\_\_





## Task 3: Folder review and completing the Death Data Capture Sheet

### Instructions for facilitators

The purpose of this task is to allow participants to practice reviewing a folder and completing a Death Data Capture Sheet.

The importance of *properly organised clinical records* should become apparent and participants should be encouraged to reflect on the quality of records at their institution and what can be done to improve it.

The importance of *complete and comprehensive clinical notes* should also become apparent and be discussed, not only for Child PIP data collection, but more importantly to ensure proper care for every sick child.

**An example of complete and comprehensive record keeping is available on the Child Health Resource Package CD (version 2)**

- Select sufficient folders for participants to review individually or in pairs
- The facilitator should carefully review the folders prior to this task to be aware of where the needed information may be (e.g. death details on Death Certificate or nursing process notes; admission time on front page with account details etc)
- Provide a blue folder that contains the necessary Code Lists (Causes of Death and Modifiable factors) and growth charts
- Ask participants to re-read the section on Notes for completing the Death Data Capture Sheet (DCS)
- Allow 30 minutes for the folder review and Death DCS completion, being available to assist as difficulties arise
- Discuss the problems and pitfalls of this process, emphasising:
  - use of the Admission Clerking Sheet (in Appendix 5) makes data entry much easier as it minimises 'missing' information
  - remember to enter codes for causes of death and modifiable factors
  - although the process is time-consuming in the beginning, it does get better!

### Materials

#### 1 PATIENT CLINICAL RECORDS

Provide the appropriate number of patient folders for the participants to work on individually or in pairs

#### 2 CHILD PIP BLUE FOLDER

One per group (or use Code Lists in Appendix 2)

#### 3 DEATH DATA CAPTURE SHEET

See overleaf

# Child Death Data Capture Sheet

Child PIP v3.1

*Confidential document*

Patient name:				Folder no:				Residential Subdistrict:			
DoB	yyyy-mm-dd	Age	pc auto	Gender	M / F / U	Re-admission	Y / N / U	Dead on arrival	Y / N / U		
Date of Admission		yyyy-mm-dd		Time of Admission		hh : mm		When death occurred		Weekend / Public holiday	
Date of Death		yyyy-mm-dd		Time of Death		hh : mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00) / Unknown	

**Records (include RTHC assessment)**

1. Folder not available	2. Folder present, records <u>incomplete</u>	3. Folder present, notes <u>inadequate</u> (quality of notes is poor)	4. Folder present, records <u>incomplete</u> AND notes <u>inadequate</u>	5. Folder available, records & notes OK
-------------------------	--	---	--	---

**Referred**

	Name of referring hospital/clinic:				
Y / N / U	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

**Social**

Mother	1. Alive and well	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother	2. Grandmother	3. Father
Father	1. Alive and well	2. Dead	3. Sick	Unknown		4. Other: _____	Unknown	

**Nutrition (tick one category box, then fill in actual weight)**

1. OWFA	2. Normal	3. UWFA	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight _____ kg
---------	-----------	---------	-------------	----------------	--------	---------	-----------------

**HIV & AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)**

Lab	1. Negative	2. Exposed	3. Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown
Clinical	1. Stage I	2. Stage II	3. Stage III	4. Stage IV	5. Not staged (but indicated)	6. Not staged (not indicated)	Unknown
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		Unknown
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		Unknown
Cotrimoxazole	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown
ART (child)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown
ART (mother)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown

**Cause of Death (insert codes)**

Main cause of death:				Underlying condition (if any):			
Other important diagnoses (max 4):							

**Modifiable Factors (insert codes)**

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Clinic/Outpatients		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible		Probable	Possible		
Code	Admissions & Emergency: Hospital		Comments	Code	Home		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	

**In your opinion, had the process of caring been different, would this death have been avoidable?**

1. Yes	2. Not sure	3. No	Unknown
--------	-------------	-------	---------

Case Summary/Comments (write summary at time of death, if possible)

Child's Details (age, weight, where from, admission date/time)

History of Presenting Complaint

Relevant Background History (including details of HIV and TB)

Examination

Problem List

Problem	Investigations	Progress	Outcome
1.			
2.			
3.			
4.			
5.			

Comments



## MODULE THREE

# DATA ENTRY: SOFTWARE

### Aims

- Introduce Child PIP Software
- Develop skills in Child PIP software installation and data entry onto computer
- Develop skills in Child PIP data entry, database maintenance, and data backup and export

### Content

#### INTRODUCTION

The Child PIP software has been designed to be user friendly, to store entered data in a safe and robust way, and to enable easy and comprehensive data analysis. It has recently been updated to version 3.1 and uses MSSQL as the backend database, which is capable of powerful data analysis.

**To optimise your software usage experience, remember to get the paperwork right first**

#### INSTALLING CHILD PIP v3.1 SOFTWARE

The software requirement for Child PIP is Windows XP, Windows Vista or Windows 7 (32 or 64 bit).

NB. Before installing the software, **DISABLE YOUR ANTIVIRUS PROGRAMME**, as this sometimes interferes with the installation process. Remember to reactivate the anti-virus software after Child PIP is installed!

The software installation will usually auto-run when you insert the installation CD, or you can copy the entire CD to your hard drive, and double-click it from there. Once the installation is complete, double click on the ChildPIP3 icon on your desktop icon to start the programme.

On some computers, sometimes, the installation is troublesome. If the programme will not run on your computer try the following tricks:


- copy the entire CD to your hard disk, navigate to the index.html file, double click it and do the same as above
- try re-running the installation

If the programme still will not run, contact your provincial coordinator.

#### KEEPING CHILD PIP v3.1 SOFTWARE UP TO DATE AND WORKING OPTIMALLY

Bugs are found and improvements are suggested regularly by the Child PIP software users.

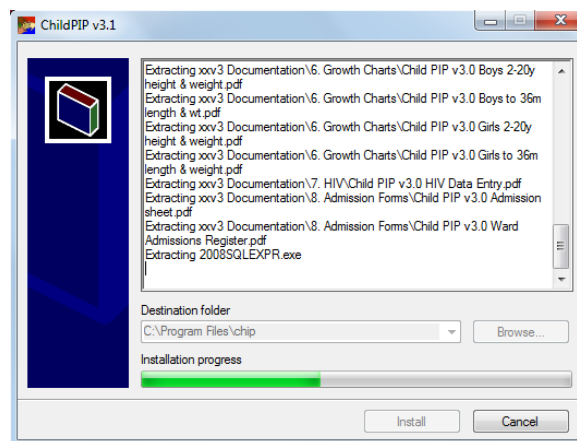
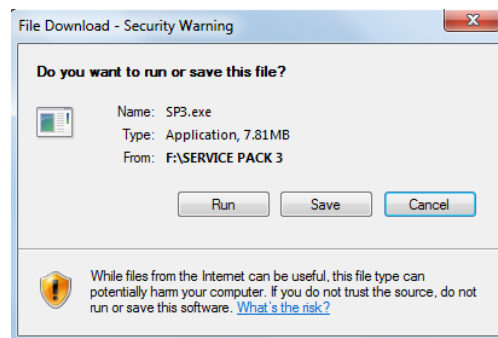
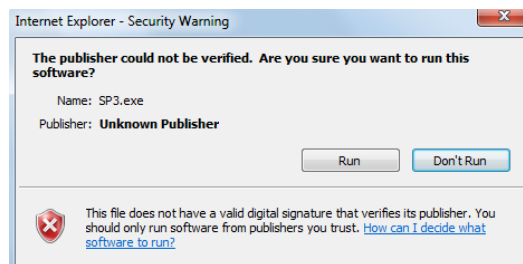
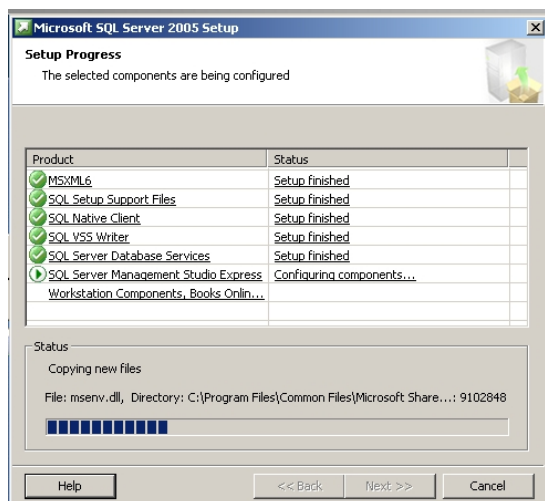
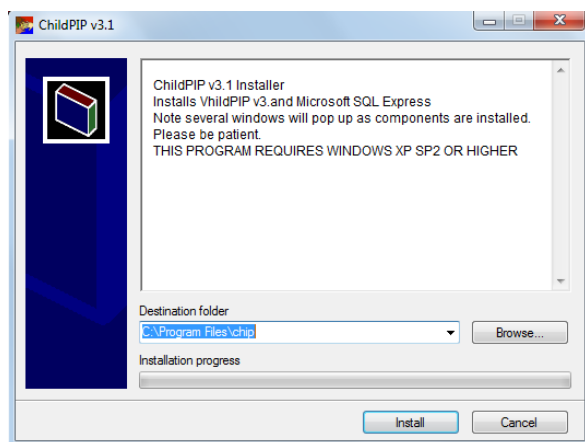
In response, Service Packs containing upgraded versions of the programme (new builds and updates) will be released from time to time. Double click on the service pack icon (see example below) and it will auto-run and update your programme to the latest version.

Example:  ChildPIP3 Service Pack 1 (2010\_04\_16 Build 184 Update 300-337).exe

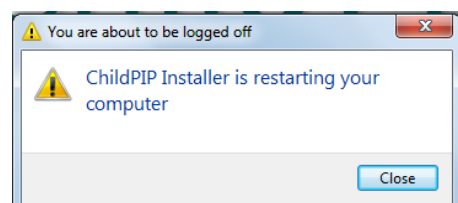


## Installation Step-by-Step Instructions

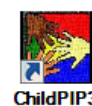
- 1) Insert the CD into your computer and once the Child PIP home page appears on your screen navigate to the SOFTWARE section
- 2) Double-click on the CHILD PIP v3 SETUP link to start the installation
- 3) Click RUN to begin the installation process
- 4) The installation process will produce a few windows (shown below) but should run to completion with minimal further input from you. Be aware that a number of security windows may appear (such as the ones alongside) and that it is safe to proceed!



- 5) At the end of the process, your computer will automatically be restarted (make sure any documents you have been using are saved!)



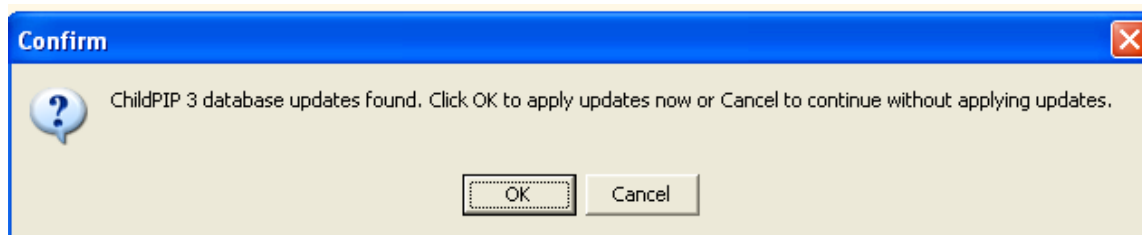
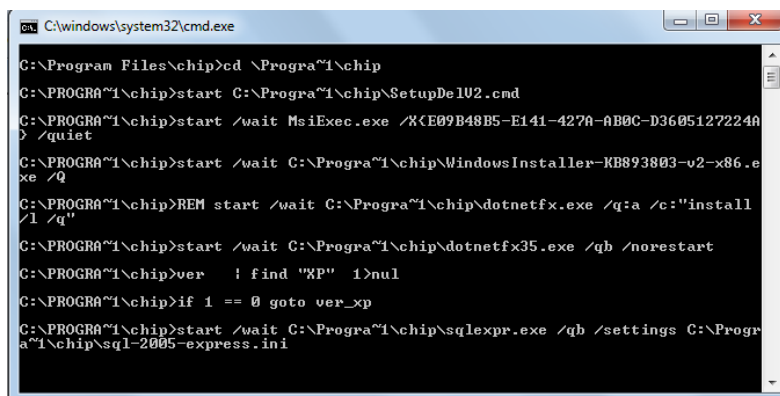
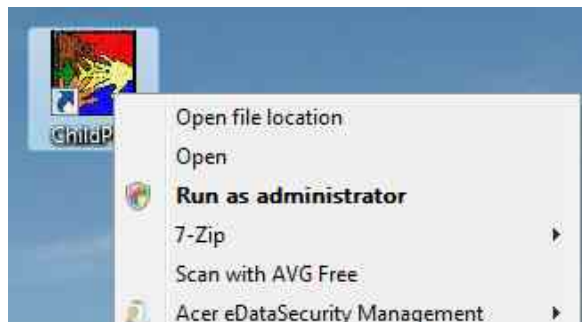
- 6) Once the installation process is complete, an icon will be placed on your desktop



**Note for Vista users:** Vista has a tighter security model that requires you to confirm that you want to execute newly installed programmes. You must click CONFIRM when Vista requests you to do this.

**Starting the programme for the FIRST time**

- 1) Windows XP and Windows 7 users start the programme by double-clicking on the ChildPIP3 icon
- 2) Windows VISTA users must right-click on the ChildPIP3 icon and select RUN AS ADMINISTRATOR from the popup menu that appears
- 3) When the programme runs for the first time several black windows will pop up in succession as the programme prepares the database for use. This may take 1-2 minutes.
- 4) Child PIP v3.1 then checks to see if there are any last minute updates that need to be applied before you start.



You will see a prompt that looks like this. Click OK to load these updates. And then confirm that you will close the programme.

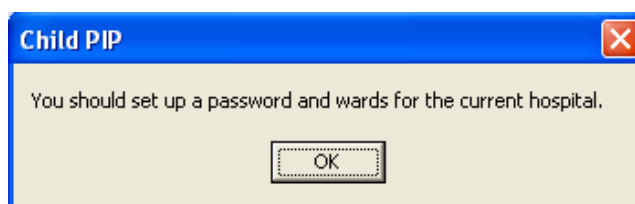
- 5) Then DOUBLE-CLICK the ChildPIP3 icon and the programme will now load normally and request you to choose the version you wish to use (select South African Version) and then select your hospital from the list at the bottom of the following screen:



6) Different users should proceed as follows:

- Standard users in South Africa should select the hospital from the drop down list at the bottom of the screen and click the green tick.  
N.B. This list contains every hospital that is on the official DHIS list but it may be recorded with an unfamiliar name if it has had a recent name change. **YOU MUST FIND YOUR HOSPITAL ON THIS LIST.** If you do not find your facility in the list, contact your provincial co-ordinator immediately! ([www.childpip.co.za](http://www.childpip.co.za))
- District Coordinators should select the first option on the drop down list (DISTRICT OR NATIONAL COORDINATOR). You can add a set of hospitals you are tracking at a later stage
- International users must first click the International Version radio button option and then add the NAME and details of their hospital manually in the fields provided

7) Click on the green tick and the following reminder window will pop up. Click OK



8) The following Edit Organisation Details window will appear. Enter your WARD details (exact name and type of paediatric ward) and POPULATION SERVED, using the dropdown menus. You will also have to add a password and enter it a second time for confirmation. The password convention is 'chip', in lowercase, but if security is an issue in your hospital, then enter a password of your choice (if you forget your password contact your provincial coordinator). All these are required fields that must be filled in with correct data before proceeding by clicking Save.



**Edit Organisation Details**

☐ Show Deleted Wards

**Grey's Hospital**

Country: South Africa  
Province: KwaZulu-Natal Province  
District: uMgungundlovu District Municipality  
Subdistrict: The Msunduzi Local Municipality  
Facility Type: Provincial Tertiary Hospital

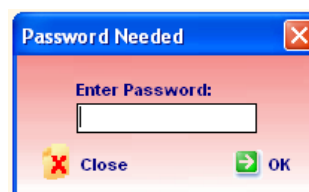
**Wards:**  
At least 1 ward must be set up by providing the correct information for the ward shown. You can add additional wards now by clicking ADD WARD. You can also add wards later by clicking the EDIT ORGANISATION button on the main screen.

Ward Name	Ward Type
A1	Medical
E1	Medical
E2	Intensive care

**Population Served:** Rural, Periurban, Urban

**Password:**  **Re-Enter Password:**

9) The final step to getting started is to enter the password you just chose in the login window.

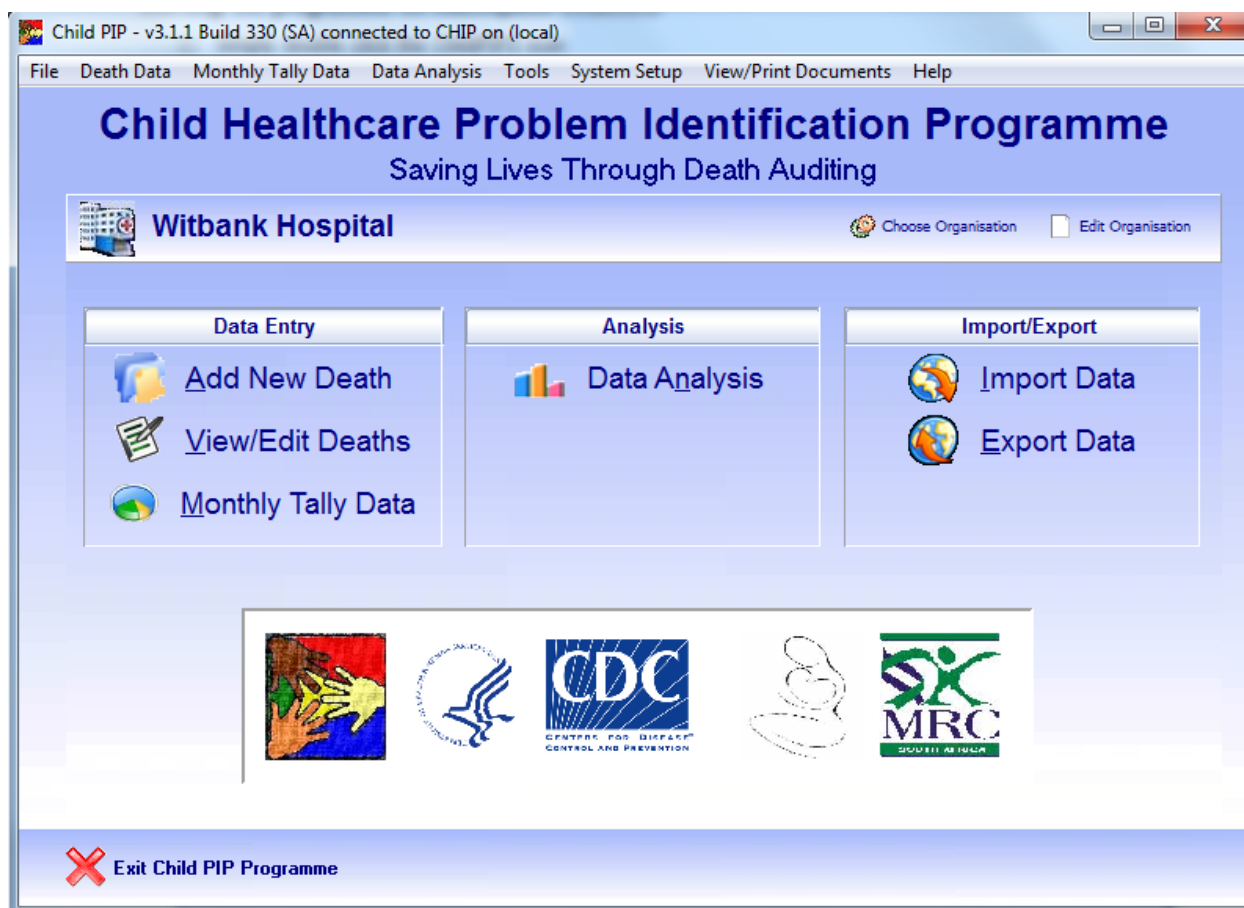




### Starting the programme on subsequent occasions

- 1) Simply double click the ChildPIP3 icon
- 2) Confirm you want to continue
- 3) Enter your password
- 4) And the main Child PIP3 screen will open:

Note that the top blue bar shows the software version (e.g. v3.1.1) and build (e.g. Build 330) of the programme you are using.





## DATA ENTRY

Data entry into the Child PIP programme is relatively simple as the programme screens follow the paper tools very closely.

However, it is best if the data is entered by the healthcare workers who collected it, at least initially, as the importance of complete and accurate form filling will become apparent. Clerks or facility information officers cannot be expected to guess-enter data for fields that have not been completed on the forms.

It is important to keep track of which data have been entered into the programme and which are outstanding. It is quite possible to make the mistake of entering data twice so make sure that you clearly mark the sheet once it is entered on the computer (either with a line through it or a tick and date, or both)

Remember to click Save after each data entry!

## Monthly Tally Data

Monthly tally data is used by the Child PIP programme to calculate the basic core data, i.e. the total number of admissions and deaths, as well as the in-hospital mortality rates. It is important that it be as accurate as possible.

Remember that the programme automatically calculates a number of fields on the Monthly Tally and that only the blue shaded fields can be edited. Always check the numbers entered before saving the entry to ensure the auto-calculations are correct.

## Monthly Tally Data Step-by-Step Instructions

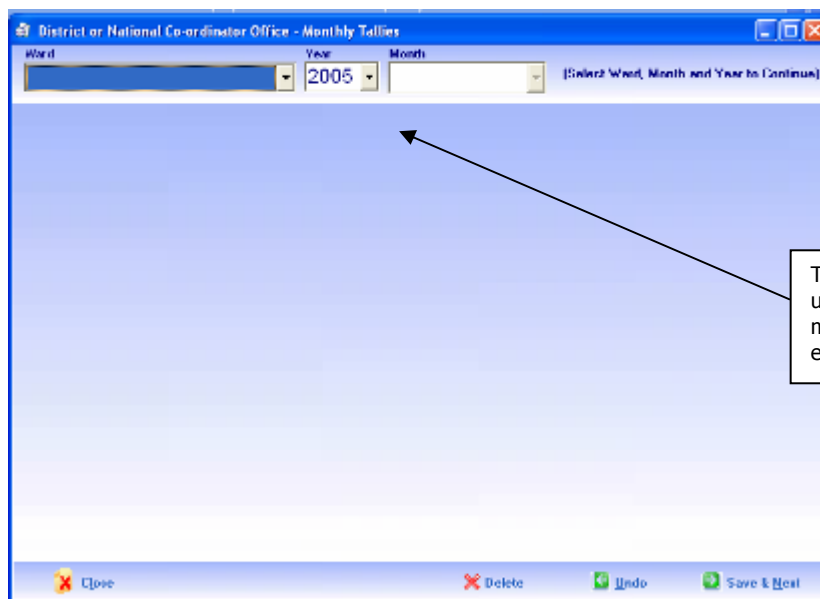
- 1) To enter data, click the **Monthly Tally Data** button on the Main Menu



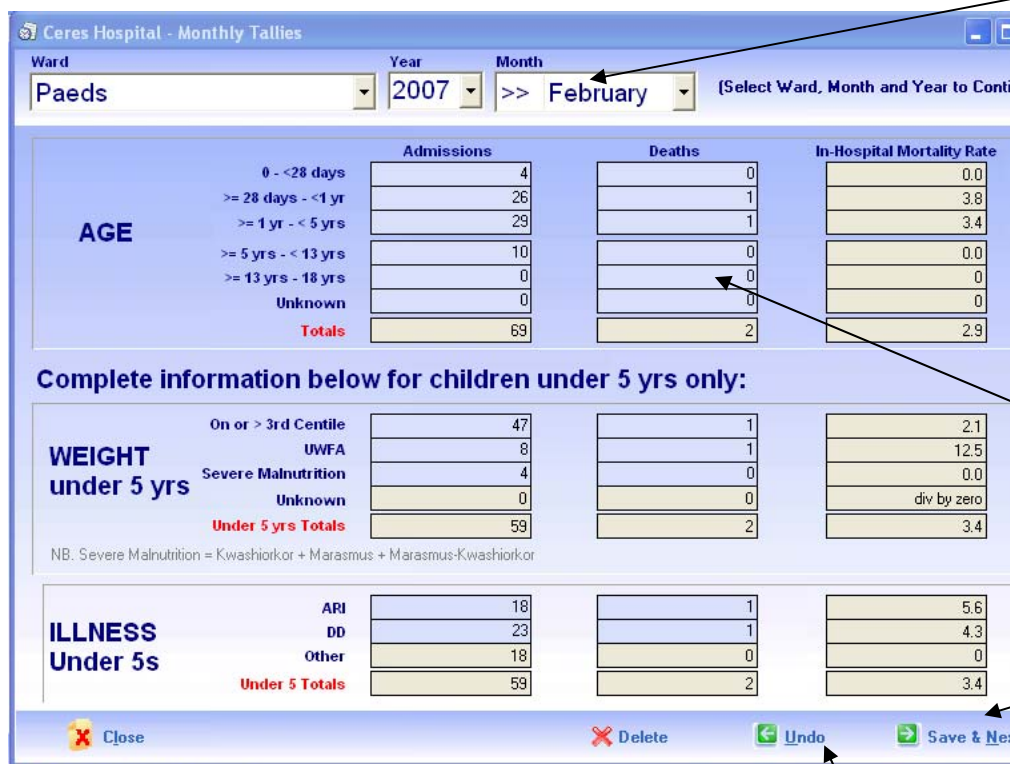
- 2) A blank screen will appear which requires that the WARD, YEAR and MONTH be selected, using the drop-down menus at the top of the screen, after which the Monthly Tally Sheet will appear

**If your ward name does not appear in the drop-down list, go back to the Edit Organisation button on the main menu and enter it**





- 3) Enter data from the Monthly Tally Sheet, making sure that EVERY FIELD HAS A VALUE ENTERED, i.e. do not leave any cell blank
- 4) If the age categories are unknown, enter the total number of admissions and deaths as Unknown and enter a zero in every other cell
- 5) Weight and Illness tallies are ONLY recorded for children under 5 years
- 6) Click on Save & Next, to enter a new record



## Individual Death Data

Death data information is entered into the Child PIP programme using the Add New Death button. It is possible to list all the deaths entered and update or edit details using the View/Edit Deaths button.

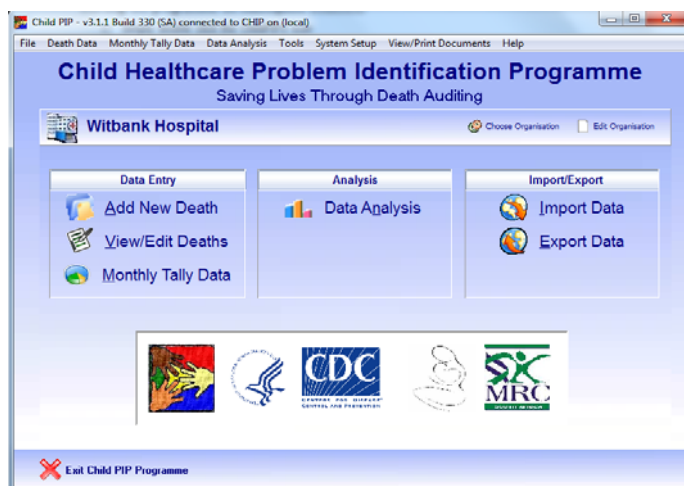
Death data entry is completed using four screen 'pages' identified by tabs at the top of the screen:

- Admission Information
- General Health Information
- Cause of Death
- Modifiable Factors

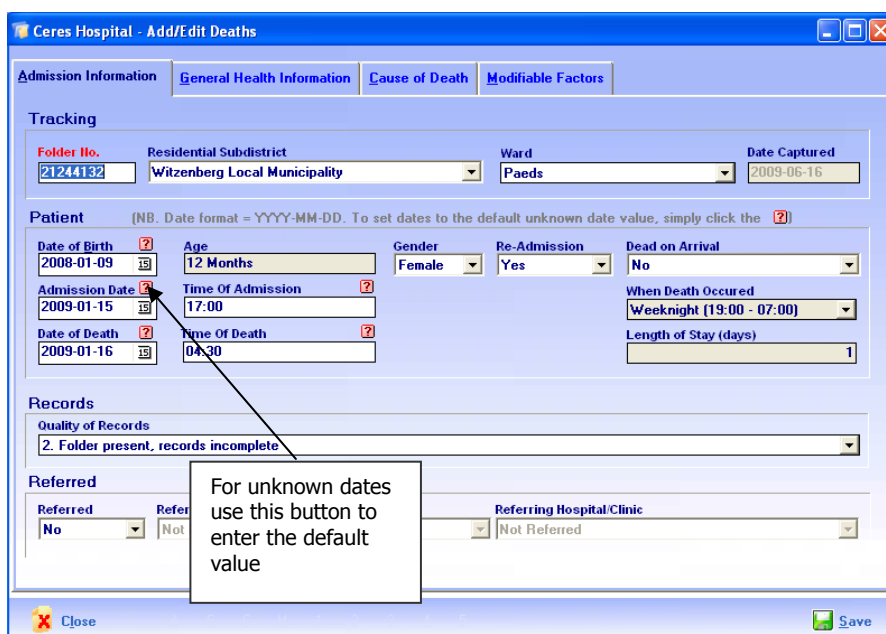
There are drop-down menus for selecting options in most fields. A quick way of data entry is to enter the number or first letter of the correct option, then press Tab, rather than manually selecting an option from each drop-down menu. The cursor will 'jump' over those fields that the programme calculates automatically.


## Add New Death Step-by-Step Instructions

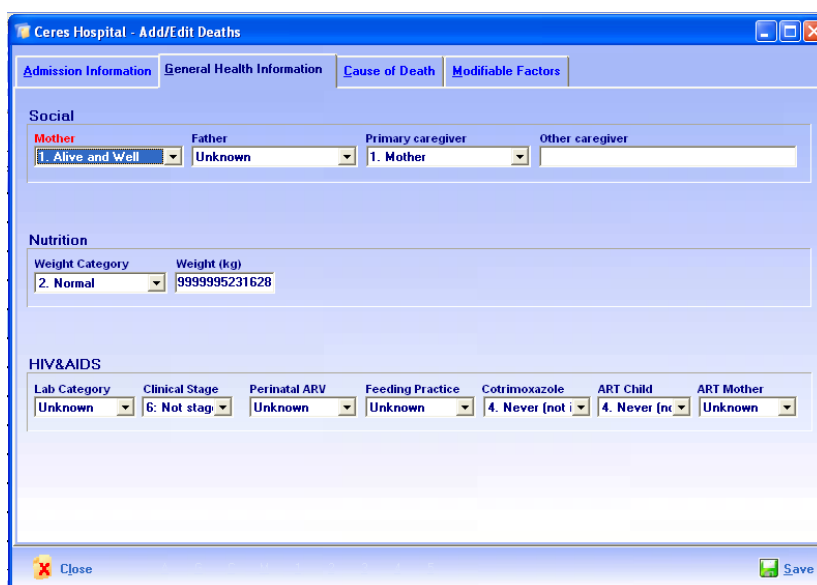
- 1) To enter Death Data Capture Sheet (DCS) data, click **Add New Death** on the Main Menu



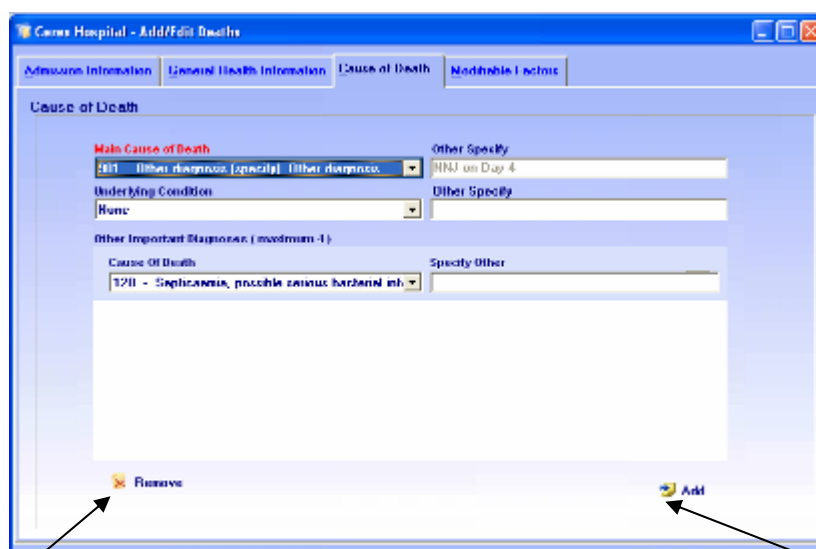
- 2) The **Admission Information** screen will appear



- 3) Residential Subdistricts and Wards may only entered from the options available on the drop-down menus
- 4) Enter dates using the drop-down calendar or type in manually using the format YYYY-MM-DD (e.g. 2009-02-22)
- 5) Enter times using the format HH:MM (e.g. 18:45)
- 6) If the date or time is unknown, use the red  button to set the field below it to Unknown
- 7) The age will be automatically calculated once all the dates and times have been entered
- 8) Complete Records and Referred fields using options from the drop-down menus
- 9) To move to the **General Health Information** screen, press Tab or click on the tab at the top of the screen



- 10) Remember to enter the child's weight in kg
- 11) To move to the **Cause of Death** screen, press Tab

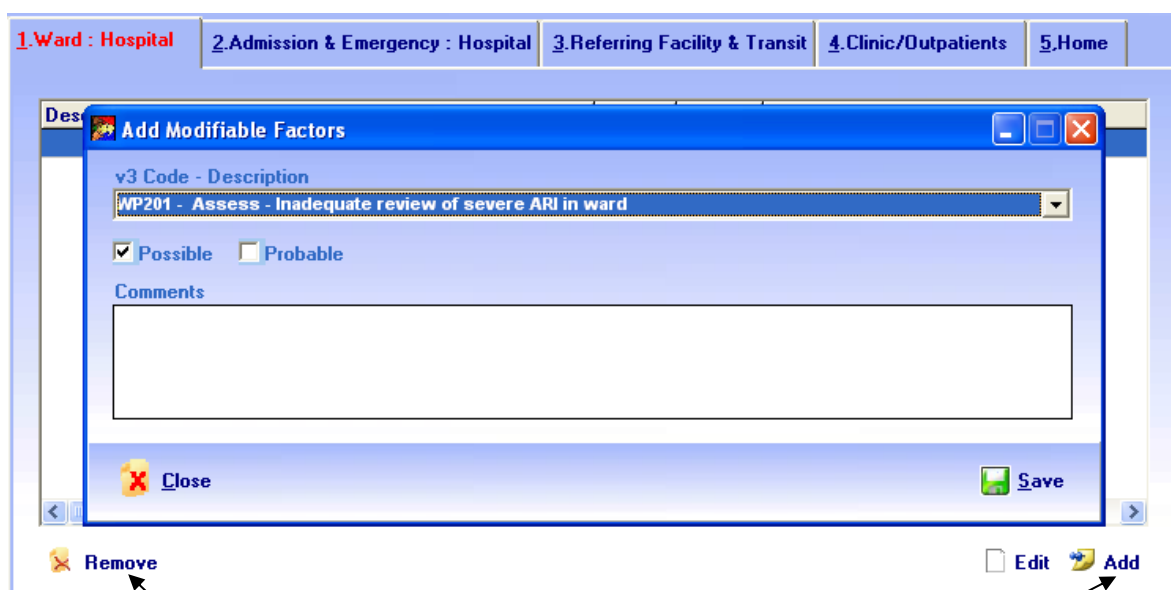


Click this button to **REMOVE** an Other Important Diagnosis

Click this button to **ADD** an Other Important Diagnosis



- 12) Select the Main Cause of Death and Underlying Condition from the drop-down lists, entering only one code for each
- 13) If Other is used as a Cause of Death, remember to type in the details in Other Specify
- 14) To enter Other Important Diagnoses, select the relevant codes from the drop-down list, using the 'Add' button
- 15) If you need to remove a code entered, use the 'Remove button'
- 16) To move to the **Modifiable Factors** screen, press Tab or click on the Modifiable Factors tab
- 17) Modifiable Factors can be entered in each of the five 'place' categories:  
 Ward: Hospital; Admission/Emergency: Hospital; Referring Facility & Transit; Clinic/Outpatients Care; and Home
- 18) Use the Add button to display the appropriate modifiable factor drop-down list and select the relevant code. You may enter up to six modifiable factors in each place category



Click this button to **REMOVE** a Modifiable Factor

Click this button to **ADD** a Modifiable Factor

- 19) Use the check box to select whether each modifiable factor entered was graded as 'Possible' or 'Probable' (the default value is 'Possible') and type any written Comments in the space provided
- 20) This process needs to be repeated for each Modifiable Factor entered

**Remember to complete the field 'Was this Death Avoidable?'**

**IMPORTANT:** To **Save** the entry, click the  **Save** button

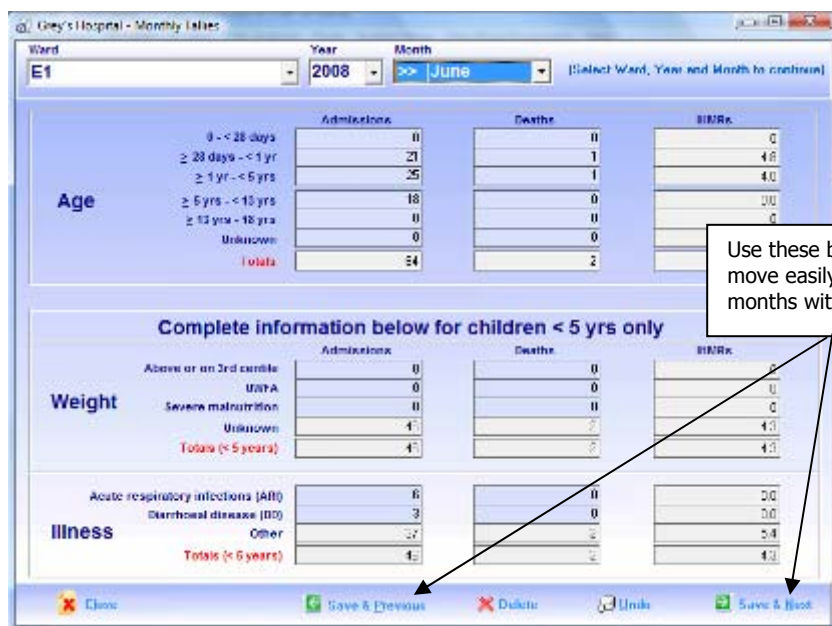
**All fields must be completed during data entry into the Child PIP programme before the programme will allow you to continue**

## DATABASE MAINTENANCE

### Editing data

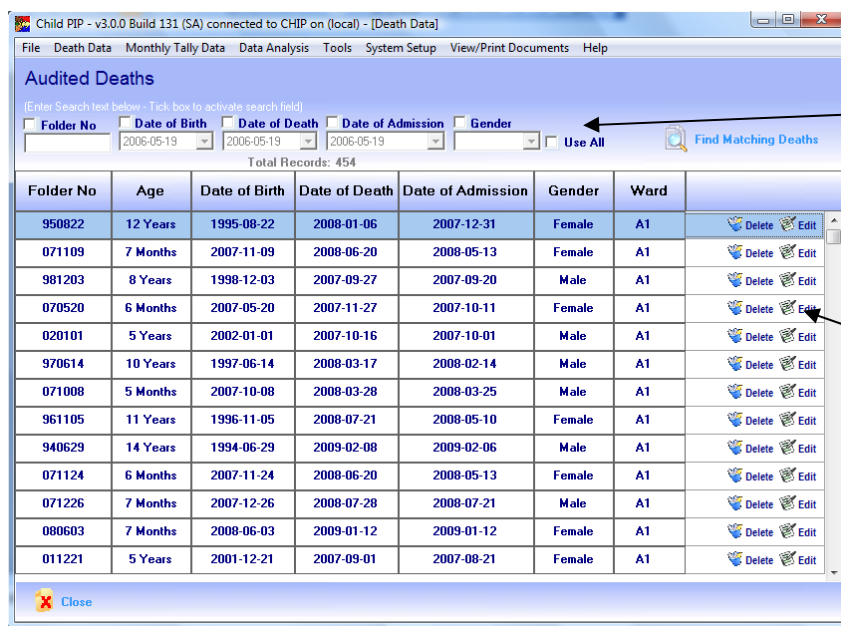
Editing data is possible for both Monthly Tally and Individual Death Data.

For editing Monthly Tallies, click on the **Monthly Tally Data** button and use the month drop-down list to select the month you wish to edit. Use 'Save & Previous' and 'Save & Next' to move easily between months with data.



Use these buttons to move easily between months with data

The **View/Edit Deaths** on the Main Menu generates a list of all the deaths and allows for various search parameters to be used. It also allows for editing or updating details for an individual entry (see below).



This section contains a set of search fields that may be used to search for specific death entries

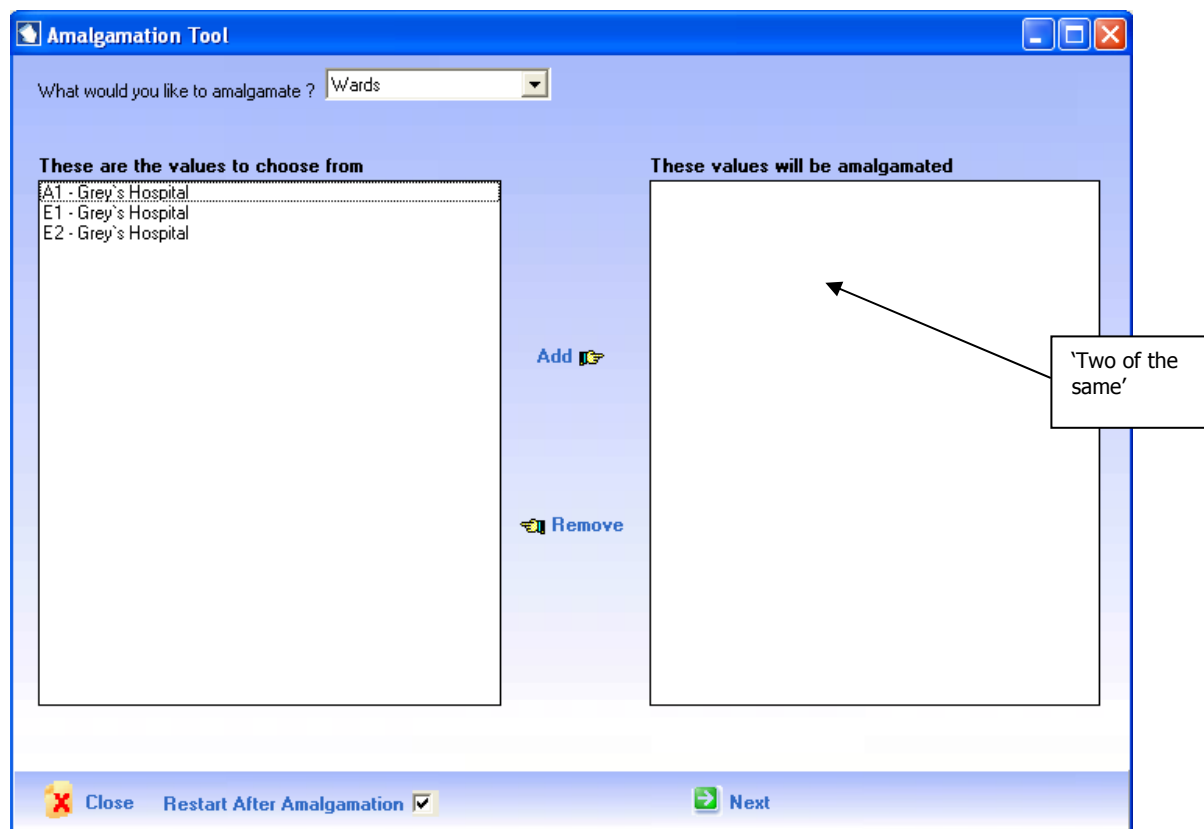
These set of buttons can be used to Edit or Delete the Death Data Entry in the matching row

The other function for listing deaths is found under Death Data on the Toolbar Menu. If one selects List Deaths, a list of deaths entered for a specific time period can be generated. This can be copied to an Excel spreadsheet and printed out for easy cross referencing and checking of the death data entered.

## Tidying

Tidying the database is necessary at times, as sometimes a clinic is entered as a hospital or vice versa, or the same ward is entered twice by mistake, with slightly different names.

For 'two of the same', click 'Tools' on the top menu, then select 'Data amalgamation'. Select what it is you wish to amalgamate from the drop-down (e.g. Wards). Then move the 'two-names-same-place' to the right pane by highlighting each then clicking 'Add' in turn. Click 'Next' and follow the on screen instructions.



It is very useful to check for these duplications on your own database from time to time.

### GETTING HELP

Visit <http://www.childpip.org.za>, or use your provincial co-ordinator,  
 or email [mark.patrick@kznhealth.gov.za](mailto:mark.patrick@kznhealth.gov.za)

## Database Backup and Restore

**Backup** your database regularly to ensure that no unnecessary data losses occur. This should be done after all significant data entry sessions.

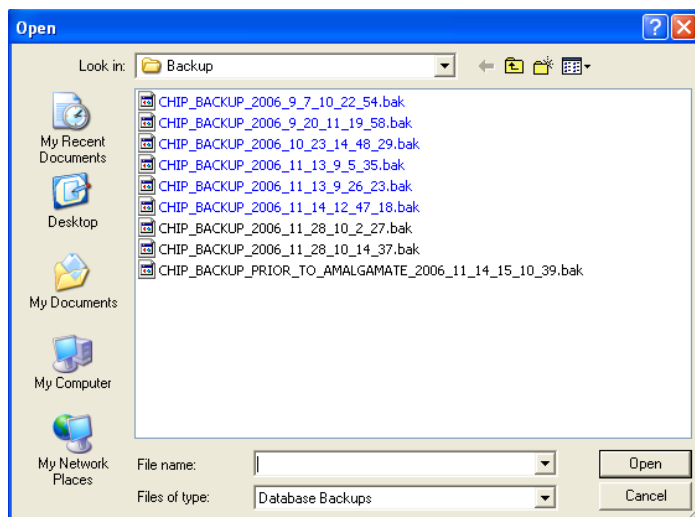
The Backup process is very simple and automated. Click on File in the Toolbar Menu and then select Backup Database. The programme automatically creates a backup of the entire database which it stores in the default Backup directory on your computer (C:/Program Files/ChipBackup).

Use your usual file copying method to copy this Backup file to a CD or memory stick every few months, so that if your computer crashes you have your data in a safe place.



**Remember to backup your database regularly to prevent any data loss**

To **Restore** your database from a previous backup is just as easy. Click Restore Database from the drop-down menu under File. The following window will appear:



Select the .bak file by date and click Open to restore your database. The above warning window will appear. Click 'Yes' and the database will be restored. The programme will then close and need to be re-started.

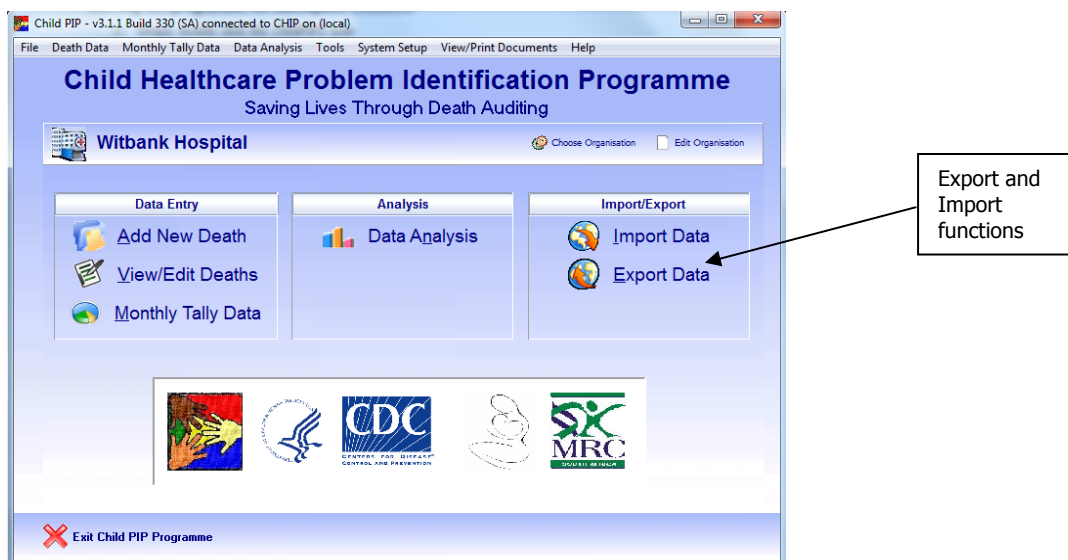
REMEMBER, this will **OVERWRITE** the database currently on your machine, so if you entered data subsequent to the backup, you **WILL LOSE THAT DATA**. Note the backup filename contains the date of the backup, to help you keep track.

**Do not restore until you have made a backup. Data loss may occur!!!**

## DATA EXPORT AND IMPORT

Part of the power of Child PIP is the ability to combine data into a national (or provincial) database. For this to happen data has to be exported (and emailed) from the individual sites, and imported by the person co-ordinating the provincial or national database every six months.

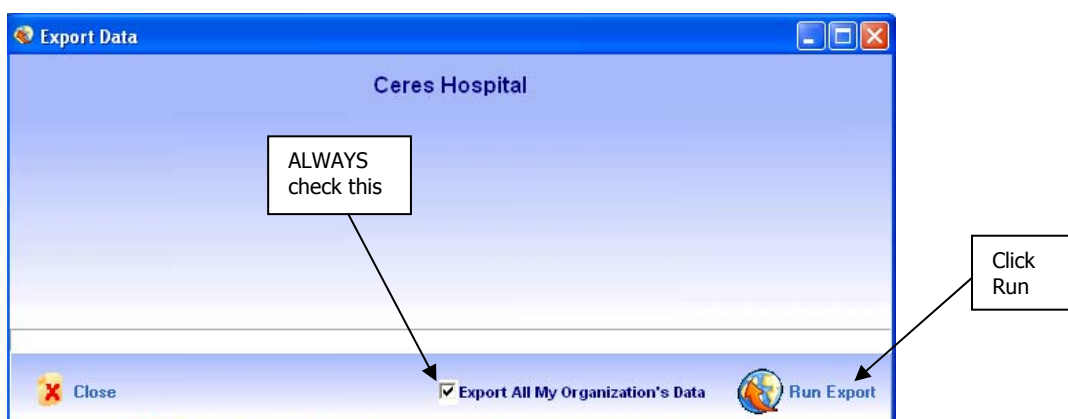
Import and Export refers to the transfer of data in and out of the system, to or from other Child PIP users or the national database for amalgamation or processing. All data is zipped and encrypted when being exported and only the Child PIP software can process these .zip files. You will not be able to unzip them!



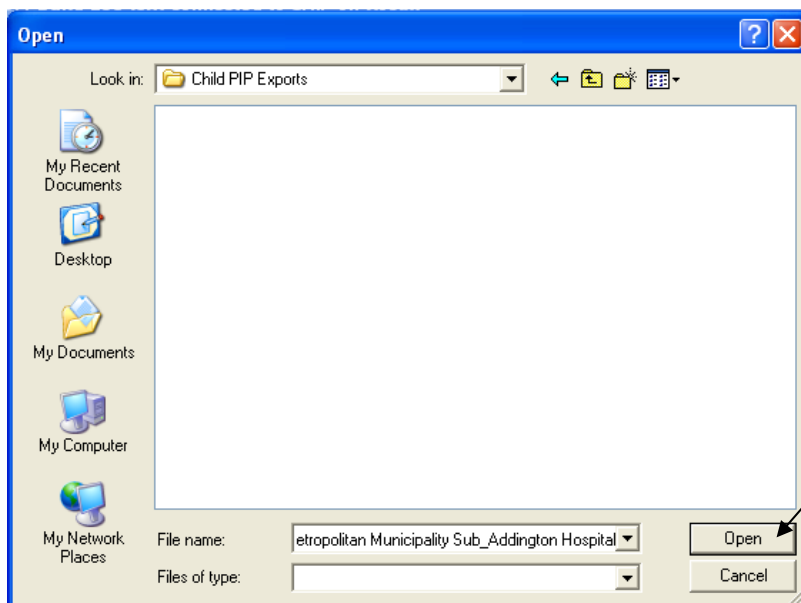
## Exporting data

### Step-by-Step Instructions

- 1) Click on Export Data on the Main Menu screen and the following window will appear:



- 2) **Always** check the Export All My Organisation Data every time you export data otherwise only changes since the last export will be included in the file
- 3) Then click Run Export and the following screen will appear which will enable you to decide where to save the export file to, just as you would any other file that you create. It is best to create a folder on your hard drive called Child PIP Exports to save the export .zip files in



- 4) Once you have selected where you would like to save the export file to, click 'Open' to create and save the file. The software names the file for you to help keep track of your exports. Once the export has been successfully completed the following screen will appear:



Close Child PIP then proceed to the folder where you selected your export file to be saved

- 5) The export process DOES NOT automatically email the file to the national database. To do this you must...
- 6) Attach the export file you just created to an email and send it to the national database co-ordinator, Dr Mark Patrick ([mark.patrick@kznhealth.gov.za](mailto:mark.patrick@kznhealth.gov.za)). Before attaching the file to an email it may be necessary to change the .zip extension to .chp, as some servers do not accept .zip files

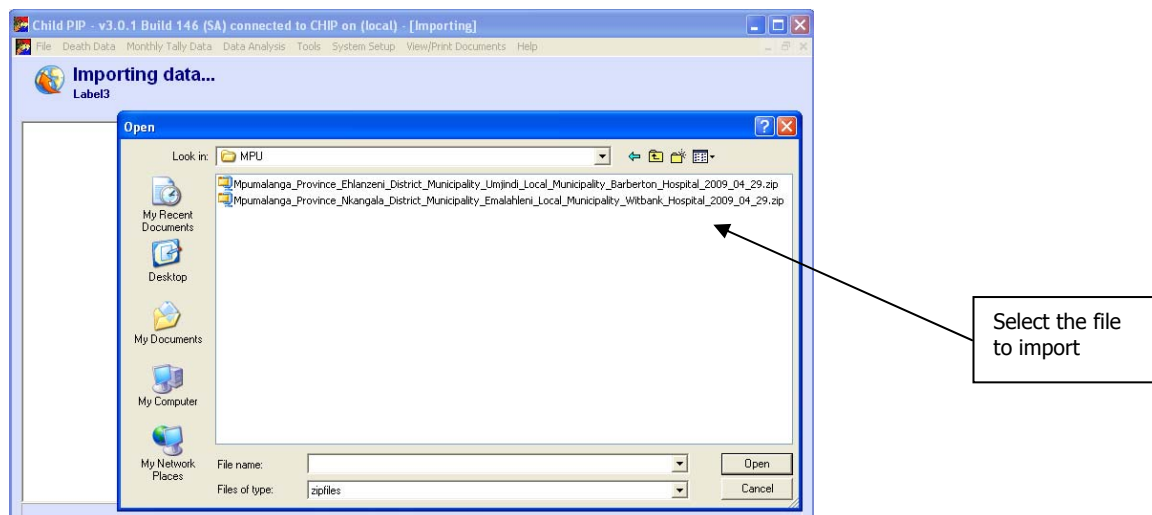
**Remember to export and email your data to the person co-ordinating the national database every six months, at the end of February and August**



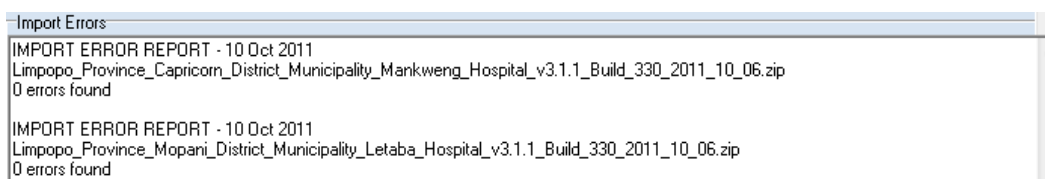
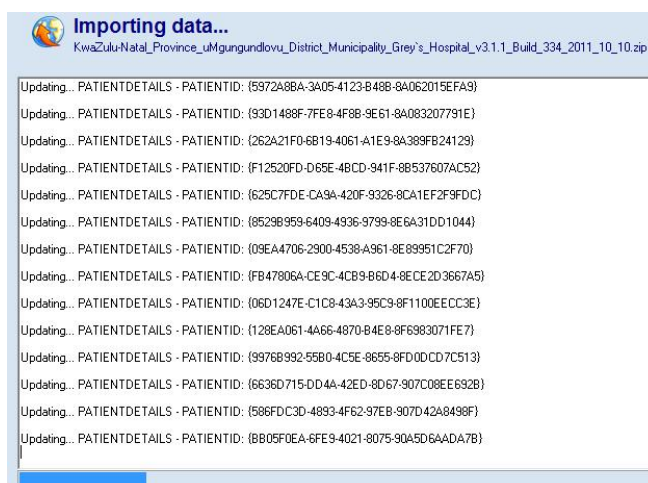
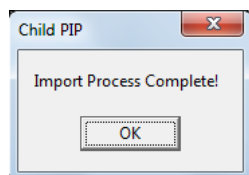
## Importing data

### Step-by-Step Instructions

- 1) Click on Import Data on the Main Menu screen and the following window will appear:



- 2) Select the .zip file to be imported and click Open
- 3) The importing process will proceed to completion, followed by an error log window. If errors are listed, data needs to be reconciled using the Data Amalgamation tool found under Tools on the Main Menu screen.



## Key points

- o Data must be entered into the programme as fully and accurately as possible
- o Always use the codes for Cause of Death and Modifiable Factors
- o Save after each Monthly Tally Sheet or Death DCS is entered
- o Backup your database after every session of data entering
- o Export your data to the national database EVERY SIX MONTHS (end of February and August)



## Practical tasks

### Task 1: Installing Child PIP v3.1 and Hospital Setup

#### Instructions for facilitators

The purpose of this task is to give participants practice in installing the Child PIP v3.1 programme and successfully setting up their own hospital.

#### **IMPORTANT:**

If the participant already has Child PIP software on their computer, please do the following before practising installing the programme to ensure that no data is lost:

1. Open Child PIP
2. Backup the Child PIP database
3. Save the backup in a specifically designated folder
4. Uninstall Child PIP (Start/All Programs/CHIP v3/Uninstall CHIP v3)

- Participants to work in two's or three's on a computer (group participants of varying computer ability)
- Distribute a Child PIP v3.1 CD and copies of the Training and Reference Manual
- Using the section in the Training and Reference Manual at the beginning of Module 3 ask participants to **install Child PIP** on their computer - be available to assist with problems
- Once the programme is successfully installed ask participants to proceed with their **Hospital Setup** either using their own hospital details or those provided by the facilitator
  - Remember to enter all hospital details: the CORRECT ward names and ward type, referral level and population served

#### Materials

##### **1 COMPUTER**

A desktop or laptop computer with Windows XP, Vista or Windows 7

##### **2 CHILD PIP VERSION 3.1 PROGRAMME (ON A CD)**

The Child PIP software version 3.1 is available on the Child PIP CD

##### **3 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL**

This manual is part of the Child PIP Training package and is also on the Child PIP CD (can be printed out)

##### **4 HOSPITAL DETAILS**

It is preferable that participants setup their own hospital but the facilitator should have details of a hospital available for those not involved in the clinical setting (including population served, referral level and ward names)

##### **5 DATA ENTRY: SOFTWARE EXERCISE CHECKLIST**

The Data Entry: Software Exercise Checklist is to be used for all three practical tasks in Module 3 to enable participants to track their progress and to provide feedback for the facilitators. Single sheets can be distributed for collection by facilitators at the end of the group work.





## Task 2: Entering Monthly Tally and Death DCS data onto the computer

### Instructions for facilitators

The purpose of this task is to give participants practice in entering monthly tally and individual child death data onto the computer.

**The data sheets provided contain deliberate errors and omissions to give participants practice in coping with incomplete or inaccurate data collection**

It is important to emphasise the importance of accurate data recording and the use of codes on the data sheets, particularly if clerks or facility information officers will be entering data at an institution.

- Participants to work in two's or three's on a computer (group participants of varying computer ability)
- Ensure participants have access to the Training and Reference Manual
- Ask participants to open the Child PIP programme from the desktop
- Start with entering **Monthly Tally Data** (use relevant section in the Training and Reference Manual)
  - Remind participants that the Ward, Month and Year must be selected to display the screen for entering Monthly Tally data
  - Be aware of the auto-calculation done by the programme and remind participants to check the numbers they have entered prior to clicking on Save
- Once participants are comfortable entering Monthly Tally data, move to **Add New Death** on the main menu (using relevant section in the Training and Reference Manual)
- Allow 30 minutes for entering data from the four Death Data Capture Sheets provided.
  - Remind participants of the different ways the dates can be entered (calendar or DD/MM/YY)
  - Remind participants of the quick way of data entry using the number/tab option rather than selecting an option from each drop-down menu
  - In Modifiable Factors, ensure participants use the Add, Edit and Remove buttons and check Possible or Probable
  - Make sure participants click Save at the end of the Death DCS entry process!
- Once all the Death DCS sheets have been entered, show participants the **View/Edit Deaths** button to display a list of the deaths entered and how details from the entered Death DCS can be edited.

### Materials

#### 1 COMPUTER WITH CHILD PIP SOFTWARE INSTALLED

#### 2 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL

#### 3 COMPLETED MONTHLY TALLY SHEETS AND DEATH DATA CAPTURE SHEETS

Four completed Monthly Tally sheets and four completed Death Data Capture sheets are provided overleaf

#### 4 DATA ENTRY: SOFTWARE EXERCISE CHECKLIST

The Data Entry: Software Exercise Checklist is to be used for all three practical tasks in Module 3 to enable participants to track their progress and to provide feedback for the facilitators (single sheets can be distributed for collection by facilitators at the end of the group work)



## Monthly Tally Sheet

Child PIP v3.0.2

Hospital: ...Year: 2007Ward: ...Month: January

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRS <sup>4,5</sup>
Age	0 - < 28 days	7	2	
	≥ 28 days - < 1 yr	12	3	
	≥ 1 yr - < 5 yrs	25	1	
	≥ 5 yrs - < 13 yrs	11	0	
	≥ 13 yrs - 18 yrs	0	0	
	Unknown	0	0	
	<b>Totals</b>	<b>55</b>	<b>6</b>	

Complete information below for children < 5 years only				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRS <sup>4,5</sup>
Weight	Above or on 3 <sup>rd</sup> centile	27	4	
	UWFA	4	0	
	Severe malnutrition <sup>3</sup>	2	0	
	Unknown	19	2	
	<b>Totals (&lt; 5 years)</b>	<b>47</b>	<b>6</b>	
Illness	Acute respiratory infections (ARI)	15	5	
	Diarrhoeal disease (DD)	6	0	
	Other	26	1	
	<b>Totals (&lt; 5 years)</b>	<b>47</b>	<b>6</b>	

## Notes:

1. Include **all** children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated:  $IHMR = \frac{\text{deaths}}{\text{admissions}} \times 100$

Compiled by: B. NDLOVU (Print name)B. Ndlovu (Sign)Date: 04/02/07Fax/Tel number: 032-448100



## Monthly Tally Sheet

Child PIP v3.0.2

Hospital:     Year: 2007Ward:     Month: April

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Age	0 - < 28 days	6	0	
	≥ 28 days - < 1 yr	19	4	
	≥ 1 yr - < 5 yrs	26	2	
	≥ 5 yrs - < 13 yrs	11	1	
	≥ 13 yrs - 18 yrs	0	0	
	Unknown	0	0	
	<b>Totals</b>	<b>62</b>	<b>7</b>	

Complete information below for children < 5 years only				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Weight	Above or on 3 <sup>rd</sup> centile	38	1	
	UWFA	3	2	
	Severe malnutrition <sup>3</sup>	1	0	
	Unknown	10	0	
	<b>Totals (&lt; 5 years)</b>	<b>52</b>	<b>3</b>	
Illness	Acute respiratory infections (ARI)	12	2	
	Diarrhoeal disease (DD)	10	0	
	Other	30	1	
	<b>Totals (&lt; 5 years)</b>	<b>52</b>	<b>3</b>	

## Notes:

1. Include **all** children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated: 
$$\text{IHM}R = \frac{\text{deaths}}{\text{admissions}} \times 100$$

Compiled by: B. NDLOU (Print name)B. Ndlovu (Sign)Date: 05/05/07Fax/Tel number: 032-448100



## Monthly Tally Sheet

Child PIP v3.0.2

13

Hospital:     • • •    Year: 2007Ward:     • • •    Month: May

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Age	0 - < 28 days	2	0	
	≥ 28 days - < 1 yr	30	2	
	≥ 1 yr - < 5 yrs	25	4	
	≥ 5 yrs - < 13 yrs	19	1	
	≥ 13 yrs - 18 yrs			
	Unknown			
	Totals	76	7	

Complete information below for children < 5 years only				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Weight	Above or on 3 <sup>rd</sup> centile		2	
	UWFA		3	
	Severe malnutrition <sup>3</sup>		2	
	Unknown			
	Totals (< 5 years)			
Illness	Acute respiratory infections (ARI)	19	3	
	Diarrhoeal disease (DD)	27	2	
	Other	30	2	
	Totals (< 5 years)	76	7	

## Notes:

1. Include **all** children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated: 
$$\text{IHR} = \frac{\text{deaths}}{\text{admissions}} \times 100$$

Compiled by: B NDLOU (Print name)B Ndlovu (Sign)Date: 02/06/07Fax/Tel number: 032-448100



## Monthly Tally Sheet

Child PIP v3.0.2

123



Hospital: . . .

Year: 2007

Ward: . . .

Month: September

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Age	0 - < 28 days	3	1	
	≥ 28 days - < 1 yr	35	6	
	≥ 1 yr - < 5 yrs	30	2	
	≥ 5 yrs - < 13 yrs	11	1	
	≥ 13 yrs - 18 yrs			
	Unknown			
	Totals	79	10	

Complete information below for children < 5 years only				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
Weight	Above or on 3 <sup>rd</sup> centile	49	6	
	UWFA	9	2	
	Severe malnutrition <sup>3</sup>	2	2	
	Unknown	11	0	
	Totals (< 5 years)	68	10	
Illness	Acute respiratory infections (ARI)	20	4	
	Diarrhoeal disease (DD)	15	5	
	Other	33	1	
	Totals (< 5 years)	68	10	

## Notes:

1. Include all children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated: 
$$\text{IHMR} = \frac{\text{deaths}}{\text{admissions}} \times 100$$

Compiled by: B. NDLOVU (Print name)

Sheldon (Sign)

Date: 04/10/07

Fax/Tel number: 032-448100

Hospital: . . .

Child Healthcare Problem Identification Programme

Ward: 12 . . .

Deaths Register No: 03/12

## Child Death Data Capture Sheet

Child PIP v3.0.2

Entered on computer: . . .

Confidential document

Patient name: T. T.				Folder no: 6519/06				Residential Subdistrict: KWA DUKUZA			
DoB	2005-12-10 yyyy-mm-dd	Age	pc auto	Gender	<input checked="" type="radio"/> M / <input type="radio"/> F / <input type="radio"/> U	Re-admission	<input type="radio"/> Y / <input checked="" type="radio"/> N / <input type="radio"/> U	Dead on arrival	<input type="radio"/> Y / <input checked="" type="radio"/> N / <input type="radio"/> U		
Date of Admission	2006-12-08 yyyy-mm-dd	Time of Admission	19:00 hh:mm		When death occurred		Weekend / Public holiday				
Date of Death	2006-12-09 yyyy-mm-dd	Time of Death	18:30 hh:mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00)		Unknown		

## Records (include RTHC assessment)

1. Folder not available	2. Folder present, records incomplete	3. Folder present, notes inadequate (quality of notes is poor)	4. Folder present, records incomplete AND notes inadequate	5. Folder available, records & notes OK <input checked="" type="checkbox"/>
-------------------------	---------------------------------------	--	--	---

## Referred

	Name of referring hospital/clinic:				
<input type="radio"/> Y / <input checked="" type="radio"/> N / <input type="radio"/> U	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

## Social

Mother	1. Alive and well <input checked="" type="checkbox"/>	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother <input checked="" type="checkbox"/>	2. Grandmother	3. Father
Father	1. Alive and well	2. Dead	3. Sick	Unknown <input checked="" type="checkbox"/>		4. Other: _____	Unknown	

## Nutrition (tick one category box, then fill in actual weight)

1. OWFA	2. Normal	3. U/WFA <input checked="" type="checkbox"/>	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight 6.9 kg
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## HIV &amp; AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)

Lab	1. Negative	2. Exposed	3. Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown <input checked="" type="checkbox"/>
Clinical	1. Stage I	2. Stage II	3. Stage III	4. Stage IV	5. Not staged (but indicated)	6. Not staged (not indicated)	Unknown <input checked="" type="checkbox"/>
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		Unknown <input checked="" type="checkbox"/>
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		Unknown <input checked="" type="checkbox"/>
Cotrimoxazole	1. Current		2. Ever	3. Never (but indicated)	4. Never (not indicated)		Unknown <input checked="" type="checkbox"/>
ART (child)	1. Current		2. Ever	3. Never (but indicated)	4. Never (not indicated)		Unknown <input checked="" type="checkbox"/>
ART (mother)	1. Current		2. Ever	3. Never (but indicated)	4. Never (not indicated)		Unknown <input checked="" type="checkbox"/>

## Cause of Death (insert codes)

Main cause of death: 103	Underlying condition (if any):
Other important diagnoses (max 4): 602	

## Modifiable Factors (insert codes)

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments
WP509	Probable	Possible <input checked="" type="checkbox"/>			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Code		Clinic/Outpatients
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
Code	Admissions & Emergency: Hospital		Comments	Code	Home		Comments
EPM03	Probable	Possible <input checked="" type="checkbox"/>			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	

In your opinion, had the process of caring been different, would this death have been avoidable?

1. Yes <input checked="" type="checkbox"/>	2. Not sure	3. No	Unknown
--	-------------	-------	---------





Hospital: . . .

Child Healthcare Problem Identification Programme

Ward: 027

Deaths Register No: 18/05

## Child Death Data Capture Sheet

Child PIP v3.0.2

Entered on computer: . . .

Confidential document

Patient name: B.S.				Folder no: 32559				Residential Subdistrict: MAPHUMULO			
DoB	27.05.04 yyyy-mm-dd	Age	pc auto	Gender	M / <input checked="" type="checkbox"/> / U	Re-admission	<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> / U	Dead on arrival	<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> / U		
Date of Admission	27.05.06 yyyy-mm-dd	Time of Admission		23:30 hh:mm		When death occurred		Weekend / Public holiday			
Date of Death	03.06.06 yyyy-mm-dd	Time of Death		03:50 hh:mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00)		Unknown	

## Records (include RTHC assessment)

1. Folder not available	2. Folder present, records incomplete	3. Folder present, notes inadequate (quality of notes is poor)	4. Folder present, records incomplete AND notes inadequate	5. Folder available, records & notes OK
-------------------------	---------------------------------------	--	--	---

## Referred

	Name of referring hospital/clinic:	APPELS BOSCH			
<input checked="" type="checkbox"/> / <input checked="" type="checkbox"/> / U	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

## Social

Mother	1. Alive and well	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother	2. Grandmother	3. Father
Father	1. Alive and well	2. Dead	3. Sick	Unknown		4. Other: _____	Unknown	

## Nutrition (tick one category box, then fill in actual weight)

1. OWFA	2. Normal	3. UWFA	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight 12.4 kg
---------	-----------	---------	-------------	----------------	--------	---------	----------------

## HIV &amp; AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)

Lab	1. Negative	2. Exposed	3. Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown
Clinical	1. Stage I	2. Stage II	3. Stage III	4. Stage IV	5. Not staged (but indicated)	6. Not staged (not indicated)	Unknown
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		Unknown
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		Unknown
Cotrimoxazole	1. Current		2. Ever		3. Never (but indicated)		Unknown
ART (child)	1. Current		2. Ever		3. Never (but indicated)		Unknown
ART (mother)	1. Current		2. Ever		3. Never (but indicated)		Unknown

## Cause of Death (insert codes)

Main cause of death:	602		Underlying condition (if any):	
Other important diagnoses (max 4):	101	110		

## Modifiable Factors (insert codes)

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments	
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		
Code	Admissions & Emergency: Hospital			Comments	Code	Clinic/Outpatients		Comments
	Probable	Possible			CAO	Probable	Possible	• No ARVs at clinic • Not assessed for HIV
	Probable	Possible	CPX03		Probable	Possible		
Code	Home		Comments			Probable	Possible	
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		

## In your opinion, had the process of caring been different, would this death have been avoidable?

1. Yes	2. Not sure	3. No	Unknown
--------	-------------	-------	---------

Hospital: . . .

Child Healthcare Problem Identification Programme

Ward: . . .

Deaths Register No: 15/10

## Child Death Data Capture Sheet

Child PIP v3.0.2

Entered on computer: \_\_\_\_\_

Confidential document

Patient name: S.N.				Folder no:				Residential Subdistrict:			
DoB	yyyy-mm-dd	Age	6 yrs auto	Gender	M / F / U	Re-admission	Y / N / U	Dead on arrival	Y / N / U		
Date of Admission		06/10/25 yyyy-mm-dd		Time of Admission		? hh : mm		When death occurred		Weekend / Public holiday	
Date of Death		06/10/30 yyyy-mm-dd		Time of Death		06.35 hh : mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00) Unknown	

## Records (include RTHC assessment)

1. Folder not available	2. Folder present, records <del>incomplete</del>	3. Folder present, notes <u>inadequate</u> (quality of notes is poor)	4. Folder present, records <u>incomplete</u> AND notes <u>inadequate</u>	5. Folder available, records & notes OK
-------------------------	--	---	--	---

## Referred

	Name of referring hospital/clinic:				
Y / <del>X</del> / U	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

## Social

Mother	1. Alive and well	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother	2. Grandmother <del>X</del>	3. Father
Father	1. Alive and well	2. Dead	3. Sick	Unknown		4. Other: _____	Unknown	

Nutrition (tick one category box, then fill in actual weight)

1. OWFA	2. Normal	3. <del>OWFA</del>	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight _____ kg
---------	-----------	--------------------	-------------	----------------	--------	---------	-----------------

## HIV &amp; AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)

Lab	1. <del>Negative</del>	2. Exposed	3. Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown
Clinical	1. Stage I	2. Stage II	3. Stage III	4. Stage IV	5. Not staged (but indicated)	6. <del>Not staged</del> (not indicated)	Unknown
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		Unknown
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		Unknown
Cotrimoxazole	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) Unknown
ART (child)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) Unknown
ART (mother)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) Unknown

## Cause of Death (insert codes)

Main cause of death: Chronic diarrhoea	Underlying condition (if any): Cerebral palsy
Other important diagnoses (max 4):	

## Modifiable Factors (insert codes)

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments	
WP MO1	Probable	Possible <del>X</del>			Probable	Possible		
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		
	Probable	Possible		Code		Clinic/Outpatients		Comments
	Probable	Possible			Probable	Possible		
Code	Admissions & Emergency: Hospital		Comments		Probable	Possible		
	Probable	Possible		Code	Home		Comments	
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		
	Probable	Possible			Probable	Possible		

## In your opinion, had the process of caring been different, would this death have been avoidable?

1. Yes	2. <del>Not sure</del>	3. No	Unknown
--------	------------------------	-------	---------



## Task 3: Database Maintenance and Data Export

### Instructions for facilitators

The purpose of this task is to give participants practice doing database maintenance (i.e. editing, tidying and backing up) and creating a data export file.

**PLEASE EMPHASISE THE IMPORTANCE OF BOTH THESE TASKS and ensure participants are able to complete them**

- Participants to work in two's or three's on a computer (group participants of varying computer ability)
- Ensure participants have access to the Training and Reference Manual
- Ask participants to open the Child PIP programme
- **Database Maintenance:** using the relevant section in Module 3, let participants practice editing data, tidying data and backing up their database
  - Participants should use the Data Entry: Software Checklist to complete these tasks
  - Show participants where the backup files are stored and let them practice navigating to the ChipBackup folder on the C: drive. Explain that they are stored in a relatively inaccessible place for security reasons
- Return to the Main Menu
- **Export:** using the relevant section in Module 3, take participants through the data export process
  - Remind participants to check the Export All My Organization Data tick box
  - Help participants to create a file in which to save Export files (e.g. My Documents/Child PIP/Data exports)
  - Show participants that the export file created is automatically zipped and has a .zip extension
  - Explain that when the Export Data button is selected the programme creates a file that needs to be attached to an email and sent to the national database, i.e. to Mark Patrick ([mark.patrick@kznhealth.gov.za](mailto:mark.patrick@kznhealth.gov.za)). This is NOT an automatic process!
  - Explain to participants that some government servers do not allow the attachment of .zip files. Show participants how to change the extension from .zip to .chp for emailing

### Materials

#### 1 COMPUTER

A desktop or laptop computer with the Child PIP v3.1 successfully installed and with the System Setup completed

#### 2 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL

This manual is part of the Child PIP Training package and is also on the Child PIP CD (can be printed out)

#### 3 DATA ENTRY: SOFTWARE EXERCISE CHECKLIST

The Data Entry: Software Exercise Checklist is to be used for all three practical tasks in Module 3 to enable participants to track their progress and to provide feedback for the facilitators (single sheets can be distributed for collection by facilitators at the end of the group work)

## MODULE 3: DATA ENTRY: SOFTWARE

Child PIP v3.1



## EXERCISE CHECKLIST

**Group facilitator:** \_\_\_\_\_ **Hospital database:** \_\_\_\_\_

[illegible]

## MODULE FOUR

# DATA ANALYSIS AND PRESENTATION

### Aims

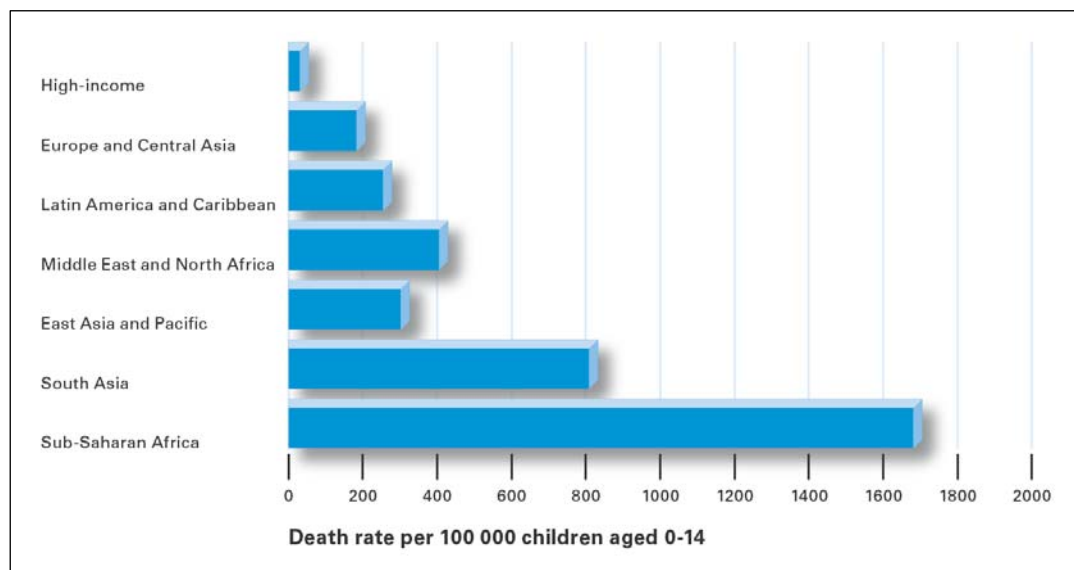
- Describe the context of childhood mortality to contextualise Child PIP data
- Demonstrate Child PIP data analysis reports on computer and develop skills in data analysis
- Describe the types of Child PIP data presentation, practice reflecting on data and compiling a Child PIP Report

### Content

The purpose of this module is to give a general overview of childhood mortality data, demonstrate Child PIP data analyses and develop skills in using this aspect of the software, and finally to practice reflecting on the data and compiling a Child PIP Report.

### THE CHILDHOOD MORTALITY CONTEXT

In 2006, just under 10 million children died throughout the world. The vast majority of these deaths occurred in Sub-Saharan Africa.<sup>7</sup>



In Africa, the mortality rates for children since 1960 have been reducing. In relation to the fourth Millennium Development Goal (MDG) target – which is a two-thirds reduction in child mortality between 1990 and 2015 (one of the eight MDGs adopted in the United Nations Millennium Declaration in September 2000) – it is unlikely that the target of 62 deaths per 1000 births will be met.<sup>8</sup>

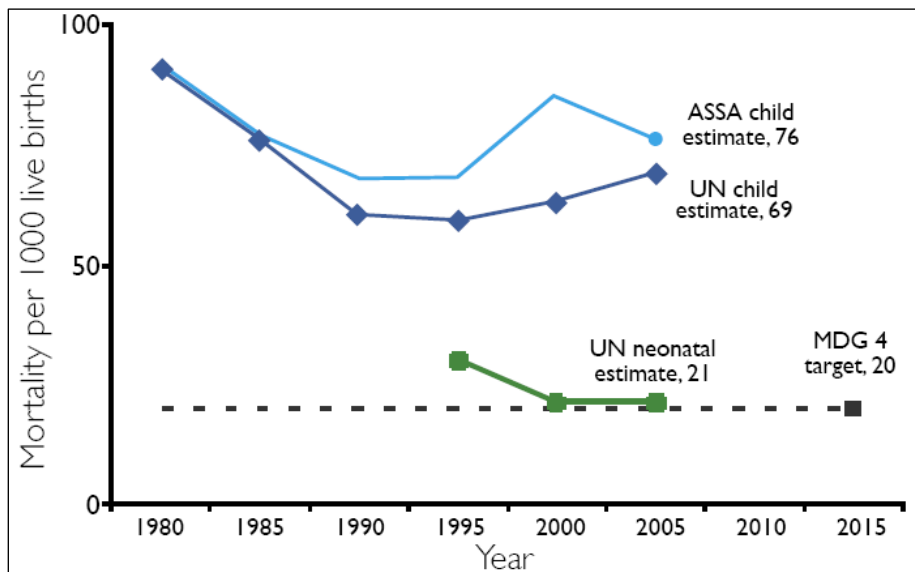
In South Africa, MDG 4 is to achieve an under-5 mortality of 20 per 1000 live births. For child mortality, the

<sup>7</sup> The State Of The World's Children: UNICEF

<sup>8</sup> Opportunities for Africa's Newborns, Lawn J et al



current United Nations estimate is 69 per 1000 births, and the South African Actuarial Society (ASSA) estimate for under-5 mortality is 76. At present the child mortality rate in South Africa is increasing.<sup>9</sup>



## Mortality definitions

The Under-five mortality rate and infant mortality rate are leading indicators of the level of child health and overall development in countries, which is why they were chosen as MDG indicators.

Strictly speaking, the under-five mortality rate and infant mortality rate are not rates (i.e. the number of deaths divided by the number of population at risk during a certain period of time), but a **probability** of dying between birth and exactly one or five years of age, as a rate per 1000 live births.

Even though they are derived in a complex manner (using life tables etc) they describe the number of children likely to die in a specific age group over a specific time period, usually one year.

The neonatal mortality rate is also important to know because neonatal deaths contribute about one-third of under-5 deaths. For children in South Africa, the MRC Burden of disease estimates show that neonatal causes, HIV, and other preventable infections are the three main killers of children, each accounting for around a third of childhood deaths.<sup>10</sup>

## What does Child PIP measure?

Child PIP is a hospital-based tool designed to improve quality of care for children admitted to hospitals. It is not a population-based tool to monitor child deaths. Child PIP measures:

- In-hospital mortality rate (IHMR) = Deaths per 100 admissions
- Age- or disease-specific IHMR = (for example) deaths from ARI per 100 ARI admissions

**It is estimated that approximately 70% of all deaths occur in households in the community, thus hospital deaths are not representative of all deaths in the population as they represent a highly selected group of children (e.g. the very sick, those who have access, etc.)**

<sup>9</sup> Under 5 mortality rate: UN Interagency group as presented in UNICEF, State of the World's Children 2008, ASSA estimate modelled by RE Dorrington. Neonatal mortality rate: WHO. Neonatal and perinatal mortality: regional, country and global estimates. Geneva, Switzerland: World Health Organization, 2006.

<sup>10</sup> Norman R, Bradshaw D, Schneider M, Pieterse D, Groenwald P. Revised Burden of Disease Estimates for the Comparative Risk Factor Assessment, South Africa 2000. Cape Town: Medical Research Council; 2006, revised by D Bradshaw to distinguish deaths in the neonatal period.



## CHILD PIP DATA ANALYSIS

Child PIP data analysis uses three simple measures:

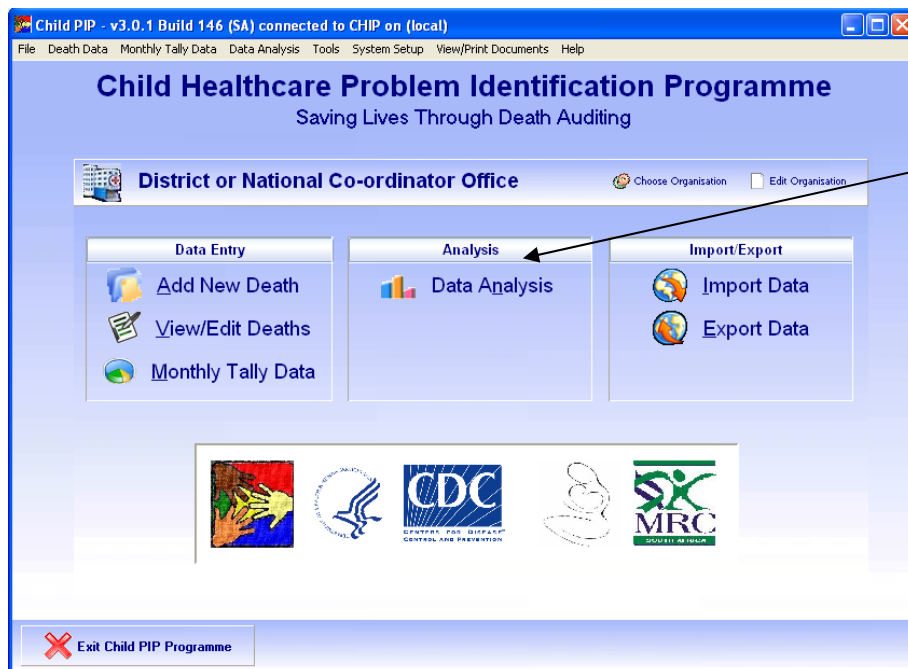
- 1) Absolute numbers
  - There is only a 'numerator'
  - ("How many apples are there in the basket?")*
- 2) Proportions
  - There is a 'numerator' and a 'denominator'
  - The 'numerator' and 'denominator' are the SAME thing
  - ("What proportion of the apples in the basket are red?")*
- 3) Rates
  - There is a 'numerator' and a 'denominator'
  - The 'numerator' and 'denominator' are DIFFERENT things
  - ("How many apples per child, if there are 10 children?")*

**The main principle behind Child PIP data analysis is to provide information that can make a difference**

Data analysis in Child PIP is fast and simple...

### Step-by-Step Instructions

- 1) To start, click Data Analysis on the Main Menu screen



Data Analysis  
function

- 2) Select the correct filters for your chosen analyses, starting with the 'Limit To' options in the left pane: 'All Hospitals', 'My Hospital List' or 'My Hospital Only'



**Run Report**

Limit To

☐ All Hospitals ☐ My Hospital List

☒ My Hospital Only

- 3) Then set the date range for the reporting period in the right pane
- 4) You can also analyse your data over time, by month or year, by selecting the 'Time Trend' filter
- 5) If you select the Subtotals the reports will include subtotals for the different groupings which is especially useful when analysing modifiable factor



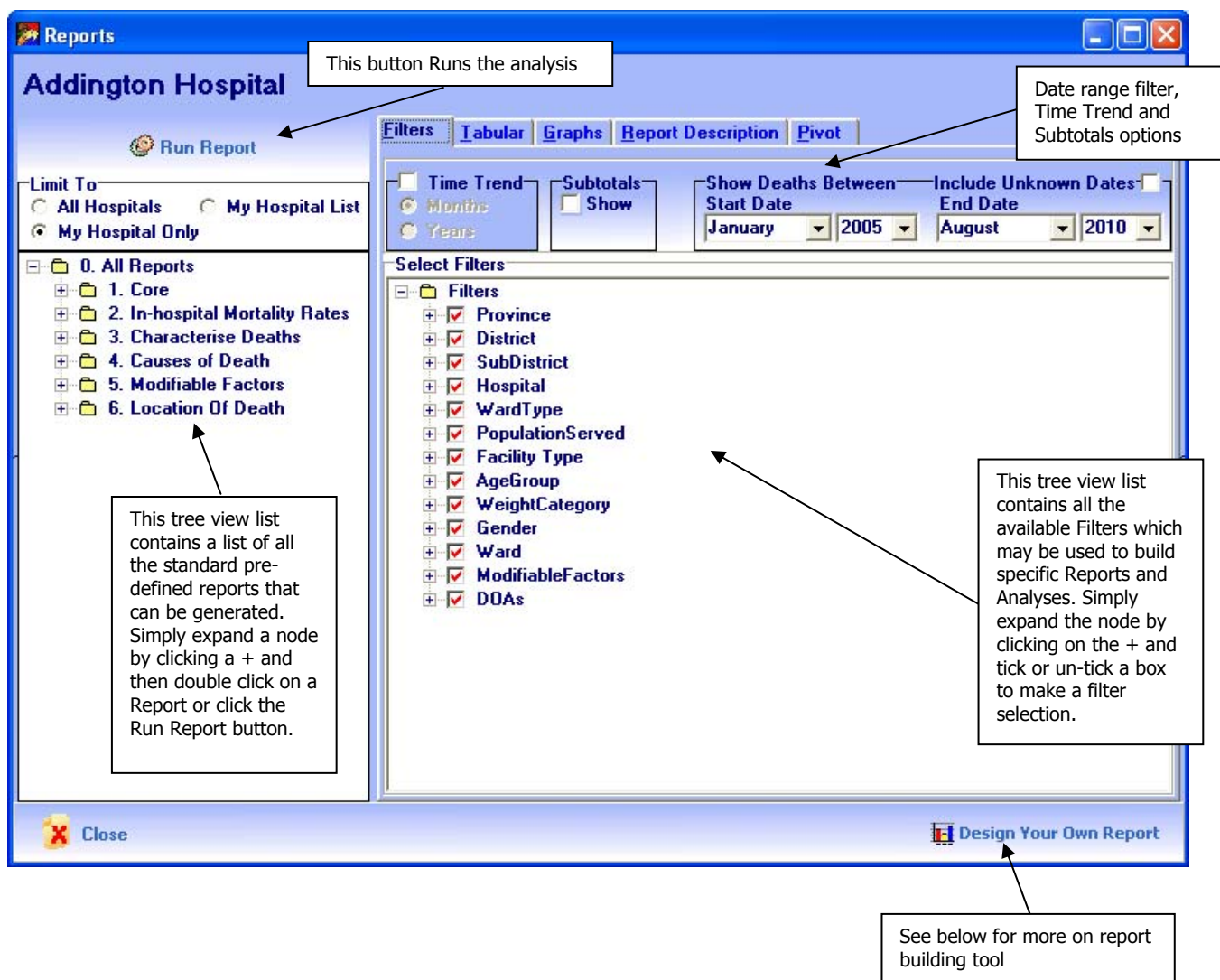
**Filters** | **Tabular** | **Graphs** | **Report Description** | **Pivot**

☐ Time Trend ☐ Subtotals ☐ Show Deaths Between ☐ Include Unknown Dates

☒ Months ☐ Years ☐ Show

Start Date: January 2007 End Date: December 2007

- 6) Then select your report from the report tree in the left pane and click 'Run Report'



**Reports**

**Addington Hospital**

**Run Report**

Limit To

☐ All Hospitals ☐ My Hospital List

☒ My Hospital Only

0. All Reports

- 1. Core
- 2. In-hospital Mortality Rates
- 3. Characterise Deaths
- 4. Causes of Death
- 5. Modifiable Factors
- 6. Location Of Death

This tree view list contains a list of all the standard pre-defined reports that can be generated. Simply expand a node by clicking a + and then double click on a Report or click the Run Report button.

**Filters** | **Tabular** | **Graphs** | **Report Description** | **Pivot**

☐ Time Trend ☐ Subtotals ☐ Show Deaths Between ☐ Include Unknown Dates

☒ Months ☐ Years ☐ Show

Start Date: January 2005 End Date: August 2010

**Select Filters**

- ☒ Province
- ☒ District
- ☒ SubDistrict
- ☒ Hospital
- ☒ WardType
- ☒ PopulationServed
- ☒ Facility Type
- ☒ AgeGroup
- ☒ WeightCategory
- ☒ Gender
- ☒ Ward
- ☒ ModifiableFactors
- ☒ DOAs

This button Runs the analysis

Date range filter, Time Trend and Subtotals options

This tree view list contains all the available Filters which may be used to build specific Reports and Analyses. Simply expand the node by clicking on the + and tick or un-tick a box to make a filter selection.

**Close** **Design Your Own Report**

See below for more on report building tool



## Standard Reports

The standard pre-defined reports can be accessed using the All Reports tree in the left window of the Reports screen. Clicking the '+' in the left pane will expand the list of reports from which to choose.

The standard reports in Child PIP v3.1 are listed in the following six groups, each of which can be expanded to show a number of reports within each category:

- 1) Core (1 report)
- 2) In-hospital Mortality Rates (3 reports)
- 3) Characterise Deaths (22 reports)
- 4) Causes of Death (7 reports)
- 5) Modifiable Factors (16 reports)
- 6) Location of Death (4 reports)

Select, then 'Run' your report (or analysis) and the result displays in the right pane.

It is worth remembering that the numbers generated by the built-in analyses come from two different data sources: the Monthly Tally Sheet, and the Death Data Capture Sheet. Total deaths from the Monthly Tally Sheets will not necessarily be the same as the total individual deaths audited.

Most of the important data is analysed using these reports and they form the basis of the Report pro forma which assists users to compile an institutional Child PIP report (see Module 5).

## Tabular and Graphical display of Reports

The set analyses display as both tables and graphs, and most site report pro forma requirements are covered by the built-in analyses. Once a standard report is generated, five tabs appear at the top of the screen (Filters, Tabular, Graphs, Report Description and Pivot). The report will appear as a table or graph depending on the selected tab.

When using the Time Trend analyses it is sometimes useful to be able to interchange the rows and columns by using the Pivot tab.

**361 Deaths By HIV Laboratory Category - Addington Hospital**

Run Report

Limit To: ☐ All Hospitals ☒ My Hospital List

0. All Reports

- 1. Core
  - 101 Baseline Data
- 2. In-hospital Mortality Rates
- 3. Characterise Deaths
  - 301 Residential Subdistrict
  - 302 Ward Type
  - 311 Age Category
  - 312 Gender
  - 321 Re-admission
  - 322 When Death Occurred
  - 323 Length of Stay
  - 331 Referred
  - 332 Referred From
  - 333 Drainage Area
  - 334 Referring Hospital/Clinic
  - 341 Mother's Wellbeing
  - 342 Father's Wellbeing
  - 343 Primary Caregiver
  - 351 Weight Category
  - 361 HIV Laboratory Category**
  - 362 HIV Clinical Stage
  - 363 Perinatal ARV

361 HIV Laboratory Category (January 2009 - December 2009)

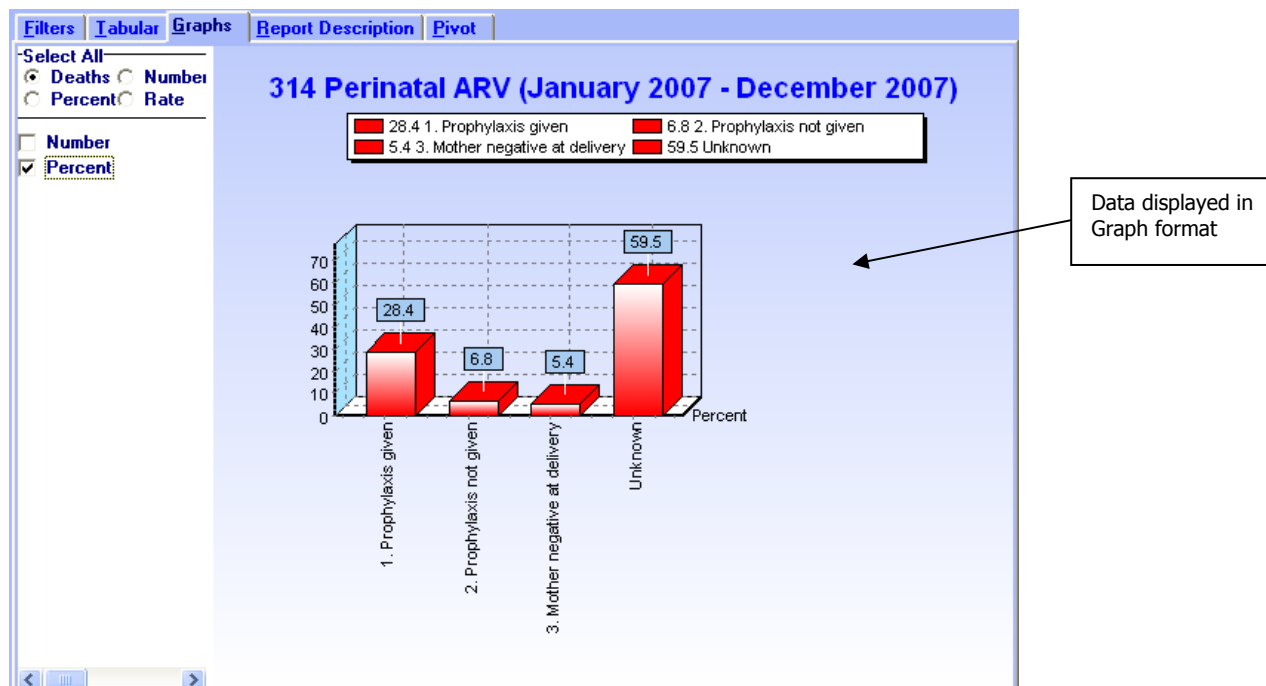
LabCategory	Number	Percent
1. Negative	5	9.3
2. Exposed	11	20.4
3. Infected	23	42.6
4. No result	3	5.6
5. Not tested (but indicated)	1	1.9
6. Not tested (not indicated)	2	3.7
Unknown	9	16.7
Total	54	100

Close

Design Your Own Report

Data displayed in Tabular format

The graphs can be generated by number or percent, and can be printed by right-clicking anywhere on the graph and selecting 'Print Chart'.



## Filters

There are a series of filters that can be selected when doing data analyses, available on the right hand window on the Report screen. To show all the possible filters, expand the Filter node by clicking on the '+'.

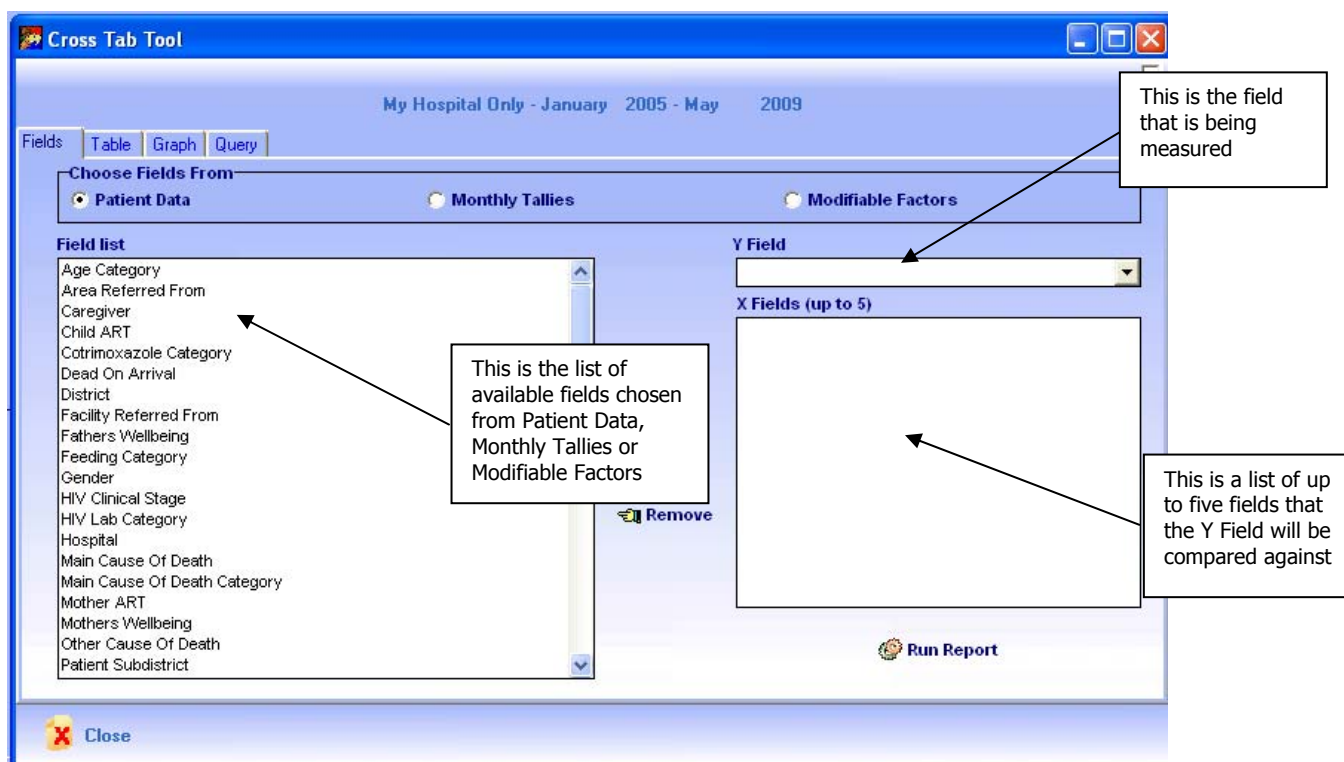
For a particular site, data can be analysed by ward type, population served, hospital referral level, age, weight and gender. To select a desired group, expand the node by clicking on the '+' and then tick or un-check the relevant boxes to make the required selection. For example, if you want to analyse deaths in neonates, expand the Age Group filter and un-tick all the boxes except 0-1 month.

To analyse amalgamated data from a number of hospitals in the Child PIP programme, the 'All Hospitals' or 'My Hospital List' must be selected when opening the Data Analysis function. This will remove the filters for Modifiable Factors and Wards.

## Designing your Own Reports

One of the special features of the Child PIP software is the facility for designing your own analyses that are most relevant to your particular site. This tool allows the user to compare up to five parameters (selected in the X Fields) with one measured field (selected in the Y Field). This is covered further in Module 5.

A new development in the Child PIP v3.1 software is the capability of cross-tabbing fields from patient data, monthly tally data and modifiable factor data. For example, cause of death data can now be cross-tabbed against modifiable factors, identifying gaps in quality of care relating to a particular condition.



### Further analysis with Excel

The tables and graphs generated by Child PIP v3.1 analyses can be manipulated and used further by copying tables or graphs into other programmes that you are familiar with, for e.g. MS Excel®. This can be done by right-clicking anywhere on the table or graph and selecting 'Copy to Clipboard' (see below). An Excel® file needs to be opened and the report can then be pasted directly into a workbook.

The advantage of using Excel® is that further analysis can be performed as required. The data can also be used to generate graphs for PowerPoint® presentations that can be edited to suit your requirements.

LengthOfStay	Number	Percent
< 24 Hours	96	19.3
1-3 Days	111	22.3
4-7 Days	84	16.9
8-14 Days		
> 14 Days	135	27.2
Total	497	100

Copy to Clipboard

**Once you've analysed your data ask yourself about your child health service:**  
**"Is this the best I can do?"**





## CHILD PIP DATA PRESENTATION

To enable change to happen the analysed Child PIP data needs to be carefully reflected upon and then well-presented. In this way all those involved with providing healthcare for children can be made aware of identified problems and begin to respond appropriately. Presentation of Child PIP data can be done in a number of ways... through the spoken word (using a slide presentation), visually (using posters) and by the written word (a Child PIP Report). These three forms of presentation are described below and are included in the Child PIP CD.

### Slide presentation

A PowerPoint® slide presentation template is very useful for presenting data to bigger groups, particularly managers. To use the template included in the CD, simply type your hospital details onto the slides and delete what does not apply. To use the graphs, double click on the graph and the Excel® table from which the graph was compiled will open. Simply add your site data and adjust the titles and axes labels.

### Posters

Posters are a very effective means of communicating data simply and powerfully. The PowerPoint® outline described above can also be used to make a poster, an example of which is included in the Child PIP CD.

### Child PIP Report

Writing a site or institutional report is a most important and essential exercise for every Child PIP site to do at least annually (or six monthly, if possible). Annual reports should also be submitted to the managers of each hospital and these can be used to help bring about change in the institution.

The annual *Saving Children* reports combine site data from the entire country and paint a national picture by providing demographic and health data on the children who die in South African hospitals, and on the quality of care they receive in the South African health system. The more sites that contribute to this process, the more accurate and comprehensive is the picture. Data submitted from every active Child PIP site is included in the reports and submitting site data gives voice to the important issues at your institution.

A Site Report pro forma (on the Child PIP CD) provides a framework for writing a report. When compiling your hospital's Child PIP report, use the standard reports and transcribe the numbers to the Report pro forma. The **bracketed numbers on the pro forma correspond to the report number in the software**.

The structure of the Report pro forma follows that used in the *Saving Children* reports and includes an Introduction, Methods, Results, Discussion and Conclusion. Users are encouraged to think of their data in terms of what it says **about the children** dying in their hospital and what it says **about the quality of care** received. The pro forma also contains ideas on what to cover in each section, as well as the relevant data tables required. It can and should be adapted for use at individual institutions, particularly with the inclusion of custom-designed reports that emphasise the most significant data arising in a particular institution.

**Child PIP users must reflect on, and analyse, their data insightfully to be able to make coherent recommendations that can be put into practice**

## Key points

- It is essential to understand Child PIP data in the context of childhood mortality as a whole
- Remember that Child PIP is a hospital-based tool to monitor in-hospital mortality and designed to improve quality of care for hospital in-patients
- The Child PIP software automates data analysis, which includes standard reports (pre-defined) as well as the facility to design one's own report
- To enable change to happen, the analysed Child PIP data needs to be carefully reflected upon and well-presented
- Child PIP Reports should be presented to all involved in caring for sick children





## Practical tasks

Task 1: Practice data analysis (using standard Child PIP reports) to complete the data tables for a Report

### Instructions for facilitators

The purpose of this task is to give participants practice in using the standard data analysis reports that are pre-defined in the Child PIP v3.1 programme and to begin to familiarise them with the Site Report pro forma.

Use the national Child PIP database which will need to be pre-loaded onto the computers by the facilitators. Check that it is functioning before the beginning the tasks!

- Participants to work in two's or three's on a computer (group participants of varying computer ability)
- Ask participants to familiarise themselves with the data tables in the Report pro forma that will need to be completed during this task (provided at the end of this module)
- Using the Data Analysis section in the Training and Reference Manual ask participants to open the Report screen (click on Data Analysis on the Main Menu)
- Participants will need to select the 'My hospital Only' filter
- Ask participants to set the Date filters for 1 January 2007 to 31 December 2007
- Participants must now run the reports required to complete the data in the Report pro forma data tables. The data analysis report numbers are in brackets in the heading of each table to assist with identifying which reports to run for the required data, e.g. (311) = Primary Caregiver
- Ask participants to create an Excel<sup>®</sup> folder and practice copying data tables from Child PIP into Excel<sup>®</sup>
- Practice grouping and ordering data correctly on the Excel<sup>®</sup> spreadsheet

### Materials

#### 1 COMPUTER

A desktop or laptop computer with the Child PIP v3.1 programme and a functional database

#### 2 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL

This manual is part of the Child PIP Training package and is also on the Child PIP CD (can be printed out)

#### 3 DATA TABLES FROM THE SITE REPORT PRO FORMA

Use the Report pro forma at the end of Module 4

#### 4 DATA ANALYSIS: EXERCISE CHECKLIST

The Data Analysis: Exercise Checklist is to be used for Task 1 and Task 2 in Module 4, to enable participants to track their progress and to provide feedback for the facilitators (single sheets can be distributed for collection by facilitators at the end of the group work)



## Task 2: Experiment with the Design Own Report facility

### Instructions for facilitators

The purpose of this task is to give participants practice in using the Design Own Report facility in the Child PIP v3.1 programme.

Use the national Child PIP database which will need to be pre-loaded onto the computers by the facilitators. Check that it is functioning before the beginning the tasks!

- Participants to work in two's or three's on a computer (group participants of varying computer ability)
- Ask participants to familiarise themselves with the Design Own Report data tables provided overleaf that will need to be completed during this task
- Using the Data Analysis section in the Training and Reference Manual ask participants to open the Report screen (click on Data Analysis on the Main Menu)
- Participants will need to select the 'My hospital Only' filter
- Ask participants to set the Date filters for 1 January 2007 to 30 June 2007
- Participants should **select the same hospital** from the database as used in Task 1
- Participants must now run the following two reports using the 'Design Own Report' facility with the parameters listed below (Y field then X field):
  - HIV Clinical Stage (ClinicalCategory) versus Mother's wellbeing (MothersWellBeing)
  - HIV Laboratory Stage (LabCategory) versus Weight (WeightCategory)

### Materials

#### 1 COMPUTER

A desktop or laptop computer with the Child PIP v3.1 programme and a functional database

#### 2 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL

This manual is part of the Child PIP Training package and is also on the Child PIP CD (can be printed out)

#### 3 DESIGN OWN REPORT DATA TABLES

See overleaf

#### 4 DATA ANALYSIS: EXERCISE CHECKLIST

The Data Analysis: Exercise Checklist is to be used for Tasks 1 and 2 in Module 4, to enable participants to track their progress and to provide feedback for the facilitators (single sheets can be distributed for collection by facilitators at the end of the group work)



## Data Tables for Design Own Report tasks

### HIV Clinical Stage versus Mother's wellbeing

Mother Clinical Stage	Alive and Well	Dead	Sick	Unknown	TOTAL
Stage I					
Stage II					
Stage III					
Stage IV					
Not staged (but indicated)					
Not staged (not indicated)					
Unknown					
TOTAL					

### HIV Laboratory Stage versus Weight

Weight category Lab Stage	OWFA	Normal	UWFA	Marasm	Kwash	M-K	Unknown	TOTAL
Negative								
Exposed								
Infected								
No result								
Not tested (but indic)								
Not tested (not indic)								
Unknown								
TOTAL								

## MODULE 4: DATA ENTRY: SOFTWARE

Child PIP v3.1



## EXERCISE CHECKLIST

**Group facilitator:** \_\_\_\_\_ **Hospital database:** \_\_\_\_\_

[illegible]



## TASK 3: WRITE A CHILD PIP REPORT USING THE PRO FORMA

### Instructions for facilitators

The purpose of this task is to give participants practice in reflecting on data and writing a Child PIP report, using the Report pro forma and the data tables completed in Tasks 1 and 2.

- Participants to work in groups
- Ask participants to carefully read through the Report pro forma (see overleaf), focussing particularly on the Discussion section
- Encourage participants to look at the data tables completed in Tasks 1 and 2, and to reflect on the information about the children who died and about the quality of care they received
- Participants should use the Notes page to write a brief summary of their findings and reflections under each heading in the Discussion
- If time allows, encourage participants to formulate a Conclusion for their Child PIP report

### Materials

#### 1 CHILD PIP v3.1 TRAINING AND REFERENCE MANUAL

This manual is part of the Child PIP Training package and is also on the Child PIP CD (can be printed out)

#### 2 CHILD PIP REPORT PRO FORMA

Use the Report pro forma at this module (see overleaf)



## CHILD PIP IN X HOSPITAL, Y PROVINCE

### TIME PERIOD

*Use this pro forma to organise, interpret and present your hospital's Child PIP data in a meaningful way. Data comes from the reports as found in the Data Analysis section in Child PIP v3.1*

### INTRODUCTION (BRIEF)

- Geography, Population estimate in catchment area / Demography (rural / periurban / metropolitan)
- Overview of hospitals and clinics in province
- Staffing in paediatric wards, especially regarding Drs
- Ward type (medical or mixed medical and surgical)
- Methods of data collection (time period; type of data i.e. medical and/or surgical admissions/deaths)
- Audit meetings: describe briefly frequency of meetings, duration, participation etc

### RESULTS

- Use comparative data if you have been using Child PIP for more than a year
- Preferably include numbers (n) as well as percentages (%)

### BASELINE DATA (report 101)

Hospital name	Time period	Time period
Total admissions		
Total deaths		
In-hospital mortality rate/IHMR (%)		
Audited deaths		
Total modifiable factors		
Modifiable factor rate per death		

### INFORMATION ABOUT CHILDREN WHO DIED

#### Demographics

		Time period		Time period	
		No. (n)	%	No. (n)	%
Age distribution (311)	0-28 days				
	28 days-1 yr				
	1-5 yr				
	5-13 yr				
	13-18 yr				
	Unknown				
	<b>Total</b>				

#### Social context

		Time period		Time period	
		No. (n)	%	No. (n)	%
Primary caregiver (343)	Mother				
	Grandmother				
	Father				
	Other				
	Unknown				
Mother's wellbeing (341)	Alive and well				
	Dead				
	Sick				
	Unknown				
	<b>Total</b>				

**Health context****Nutrition**

		Time period		Time period	
		No. (n)	%	No. (n)	%
Weight distribution (351)	Overweight				
	Normal				
	UWFA				
	Kwashiorkor				
	Marasmus				
	Marasmic-Kwash				
	Unknown				
	<b>Total</b>				

**HIV & AIDS**

		Time period		Time period	
		No. (n)	%	No. (n)	%
HIV Lab category (361)	Negative				
	Exposed				
	Infected				
	Unknown				
	<b>Total</b>				
HIV Clinical stage (362)	Stage I				
	Stage II				
	Stage III				
	Stage IV				
	Not staged				
	Unknown				
	<b>Total</b>				

**Perinatal ARV (PMTCT)**

		Time period		Time period	
		No. (n)	%	No. (n)	%
Perinatal ARV (363)	Prophylaxis given				
	Proph not given				
	Mother negative				
	Unknown				
	<b>Total</b>				

**Feeding practice**

		Time period		Time period	
		No. (n)	%	No. (n)	%
Feeding practice (364)	Exclusive breast				
	No breast, ever				
	Mixed				
	Unknown				
	<b>Total</b>				

**PCP prophylaxis**

		Time period		Time period	
		No. (n)	%	No. (n)	%
Cotrimoxazole proph (365)	Current				
	Ever				
	Never (but indic.)				
	Never (not indic.)				
	Unknown				
	<b>Total</b>				



**ART**

		Time period		Time period	
		No. (n)	%	No. (n)	%
ART - child (366)	Current				
	Ever				
	Never (but indic.)				
	Never (not indic.)				
	Unknown				
	<b>Total</b>				

**In-hospital mortality rates**

		Admissions (no.)		Deaths (no.)		IHMR (%)	
		Period	Period	Period	Period	Period	Period
Age ( report 201)	0-28 days						
	28 days-1y						
	1-5y						
	5-13y						
	13-18y						
	Unknown						
<b>All admissions</b>	<b>Total</b>						
Weight: < 5yrs only (202)	< 3 <sup>rd</sup> centile						
Illness: < 5yrs only (203)	ARI						
	DD						
<b>Under-5 admissions</b>	<b>Total</b>						

**Causes of child deaths**

		Time period			Time period		
		Total (no.)	% of deaths	% of causes	Total (no.)	% of deaths	% of causes
All diagnoses: top 5 (406)	1						
	2						
	3						
	4						
	5						

**INFORMATION ABOUT QUALITY OF CHILD HEALTHCARE****Records**

		Time period		Time period	
		No. (n)	%	No. (n)	%
Records (501)	Folder not available				
	Folder available: incomplete and/or inadequate				
	Folder available: OK				
	Unknown				
	<b>Total</b>				

**Modifiable factors**

		Time period		Time period	
		No. (n)	%	No. (n)	%
MFs: Where? (512)	Ward				
	A&E				
	Ref Fac & Transit				
	Clinic				
	Home				
	<b>Total</b>				

		Time period		Time period	
		No. (n)	Rate/death	No. (n)	Rate/death
MFs: Who? (513)	Clinical personnel				
	Administrator				
	Caregiver				
	<b>Total</b>				

Comment on the most prevalent individual modifiable factors in your institution, by place and/or person responsible.

## DISCUSSION

Use the following headings to **interpret** the data as recorded in the previous section. Take care NOT to simply repeat the results in text form.

In keeping with the growing emphasis on the continuum of antenatal, perinatal and postnatal care, try and link the problems identified into these areas.

### What does this information tell us about children who died?

Demographics

Social context

Health context

Inpatient mortality

Causes of death

**What does this information tell us about quality of child healthcare?** (with particular emphasis on any changes in child healthcare, especially positive, that have been identified in the data)

Where modifiable factors occur

Who is responsible

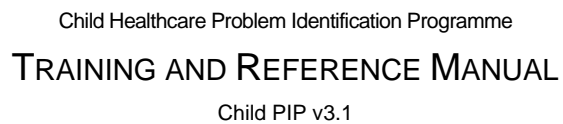
### Recommendations

If appropriate, try and identify levels for implementation (i.e. Policy; Administration; Clinical Practice and Education) for each recommendation, and who is responsible.

## CONCLUSION

Concluding remarks about the Child PIP death audit process, the findings and the future, and what this all means for the children in your area and the health personnel (clinical and administrative) in your institution.

*REMEMBER that simply to have begun the Child PIP process in your institution is an achievement of note, as is giving feedback from the Child PIP audit process to the relevant role-players (healthworkers/managers).*

[illegible]



## MODULE FIVE

# MAKING CHANGE HAPPEN

### Aims

- Describe local, provincial and national examples of what had been achieved using Child PIP
- Discuss how to make good use of Child PIP data in order to make change happen
- Understand the principles and responsibilities involved in making Child PIP sustainable at a facility

### Content

Making change happen involves carefully analysing Child PIP data, and then using it effectively in the planning and implementation of recommendations or solutions which have been developed in response to identified problems.

The purpose of this module is to describe what Child PIP has achieved locally, provincially and nationally, and then discuss how to make good use of your data. Having data to make good use of depends on successful implementation of Child PIP in your hospital, i.e. Child PIP needs to be sustainable over the long term to bring about significant change.

### WHAT CAN BE ACHIEVED BY CHILD PIP?

Simply by instituting a process like Child PIP, behaviour begins to change. Clinical notes will improve, laboratory results will be better followed up, and clinical guidelines will be better followed.

And when Child PIP data is looked at and reflected upon, planned change can happen locally, provincially and nationally, as will be shown in the examples that follow.

**But ALWAYS remember that it is at the facility level that Child PIP is most powerful when it is incorporated into day-to-day clinical practice**

### Making Local Change Happen

To make change happen in your institution in a structured and sustained way, the key is to take task-orientated minutes in your Mortality Review Meetings, and each meeting should begin with a review of progress made with each task.

The other key mechanism is to use your written Child PIP Report (which you may do quarterly, half-yearly or annually) as an advocacy document with your institution's managers.

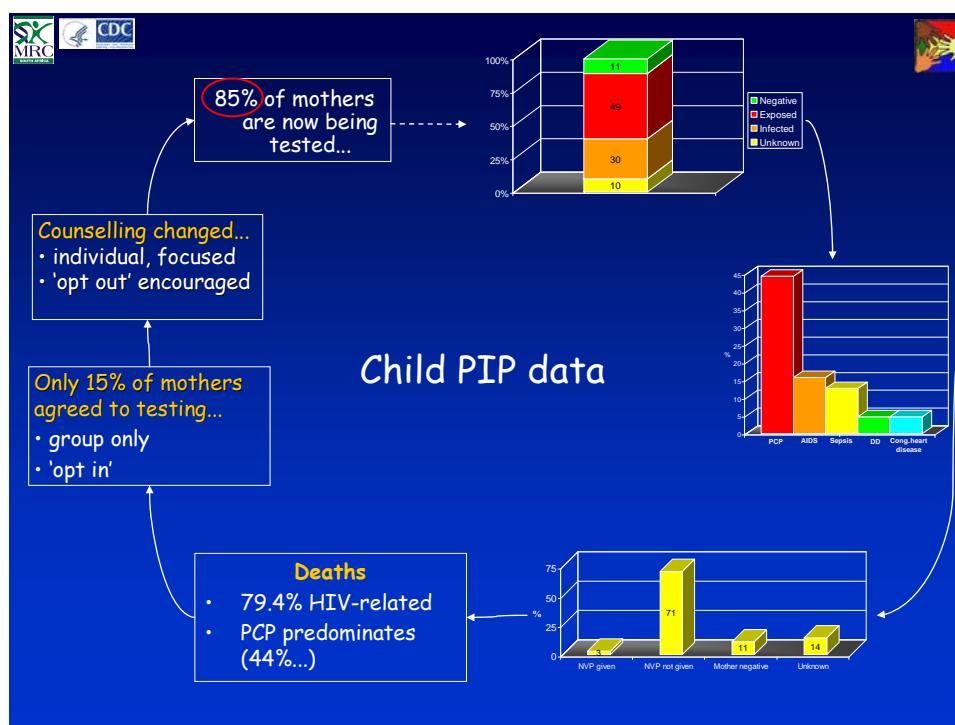
**Witbank Hospital** is situated in Mpumalanga and is the main referral hospital for all 25 hospitals in the province. It was here that Child PIP users took action to improve prevention of mother-to-child transmission of HIV in response to their Child PIP data...

**Problem:** The Child PIP data revealed that nearly 89% of children dying in Witbank hospital in 2005 were either HIV exposed or infected and that 44% of the deaths were due to PCP. The paediatric team at Witbank Hospital reviewed the PMTCT data which showed that 71% of HIV infected mothers whose children were dying had not received nevirapine. When it was discovered that only 15% of mothers agreed to be tested, counselling practices were investigated. The low testing rate was thought to be due to poor understanding of HIV, and vertical transmission prevention on the part of both counselors and mothers, and because only opt-in, group counselling was offered.

**Solution:** The team then worked hard at improving counselling, which became individual and focused, with opt-out testing encouraged. Within a few months, 85% of mothers were being tested.

**Result:** Healthcare providers at Witbank Hospital in Mpumalanga used audit data from the Child PIP to identify a significant problem, implement a solution and monitor change. The Child PIP data from the following year showed an almost 60% decrease in deaths due to PCP with a significant decrease of 37% in the inpatient death rate for children. The team at Witbank Hospital made a significant impact on child healthcare by using Child PIP data to make change happen!!

The Witbank story can be shown in an audit cycle format as well...



Another local example...

**Emmaus Hospital** is a small district hospital that is situated just outside Winterton, in KwaZulu-Natal. It serves a rural population close to the beautiful northern Drakensberg.

An 18 month old boy was admitted with severe stridor that did not improve with standard treatment. After 24 hrs it was decided to transfer him to the regional hospital who requested that he be intubated before transfer to ensure he had a patent airway for the trip.

The medical staff at Emmaus gathered all the necessary equipment, a SATS monitor and a suction machine, and the intubation attempted. However, no-one, not even the most experienced doctor at the hospital succeeded in intubating him and he suddenly collapsed and died. All the staff were devastated and so they carefully evaluated the care he had received, as part of the Child PIP mortality review process.

Many issues were raised but one that was simple and obvious was that there had only been one plug point at the child's bed instead of the required four plug points that a high care bed should have. So, an urgent application for more plugs was made to the maintenance department and very quickly four brand new plug points appeared alongside the child's bed.

Subsequently, many of the sickest children admitted to Emmaus have been helped by much better quality of care than had been available for the little boy whose death happened due to substandard facilities.



## Making Provincial/Regional Change Happen

A provincial example comes from KwaZulu-Natal...

In Pietermaritzburg in 2005, Child PIP findings identified various problems, in response to which response the Child Health Resource package was developed. The second edition currently contains clinical guidelines, a record keeping system, quality improvement tools (including PPIP and Child PIP), tools for disease notification, and more. The CD has become an invaluable resource and is used widely in KZN and beyond and is another example of what has been achieved in response to Child PIP information, directed at improving care.



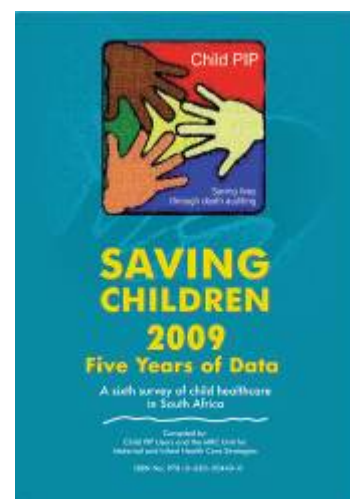
## Making Change Happen Nationally

National data brought together in the Saving Children reports of 2004, 2005, 2006, 2007 and 2009 describe Child PIP findings from sites around South Africa. The reports have highlighted the main areas of concern in child healthcare, and also contain recommendations to address each one. When making recommendations, it is important to clearly link each recommendation to specific information arising out of the Child PIP review process.

The Saving Children report recommendations:

- 1) HIV & AIDS: Prevention & Treatment
- 2) Nutrition: Clinic & Hospital
- 3) Standards of Care: Clinic & Hospital
- 4) Norms: Staffing, Equipment & Transport
- 5) Improving Quality of Care: Mortality Review Process: Child PIP

But to make improvements and really address problems in the way that the District Health System functions, or in individual health facilities, interventions are required at the levels of policy, administration, clinical practice and education. Responsibility for implementation at each level should be assigned, so that over time, implementation (or lack thereof) can be accounted for. And all of us have a role to play...



## DATA TO ACTION

Moving from data to action is the exciting part...!!

When reviewing the in-hospital mortality rate from a selection of hospitals that implemented Child PIP from 2004 to 2007, it is clear that many stayed the same, but some showed significant improvement. So how can we use Child PIP to move from data to action to change, as some of these sites, and those described in the preceding examples, have clearly done?

Remember that Child PIP is a tool that provides the structure to:

- Reflect on what we do
- For answering “Is this the best I can do?”

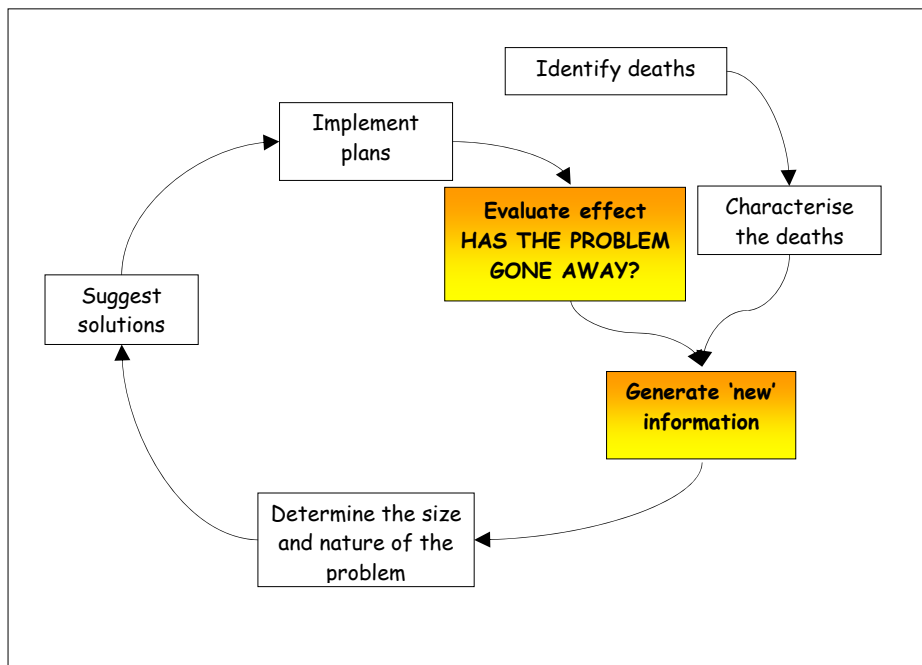
And it provides information in a format that most of us are now familiar with.

But how do we use the information about children and about us to make change happen? Let us return to the beginning and look again at the steps in death auditing... “We care, therefore we reflect, then we change...”

Once we have been doing this for some time we need to ask:

- 1) Can we generate ‘**new**’ information?
- 2) Can the Child PIP tool be used to **measure effect**?
- 3) Do we actually make **change** happen?

For change to happen we have to evaluate our implementation actions to see if there has been an effect and we can use Child PIP data to do that, as shown in the Child PIP audit cycle below:







### Starting points

There are a number of possible starting points, but only two are presented here...

We can start with:

- **Child PIP data** – using the audit cycle approach to identify a problem (e.g. Witbank)  
OR
- **a question** – using our own experience, then going to the Child PIP data to find 'new' information

To gain experience in using these approaches there will be an opportunity to spend some time in groups trying them out at the end of this section.

**“We care, therefore we reflect, and then we change”  
to close the audit loop!**



## MAKING CHILD PIP HAPPEN

**To use Child PIP to make change happen, it is essential that you first make Child PIP happen in your own hospital. There are a few things that need to be considered to ensure sustainable implementation.**

For Child PIP to be successfully implemented there are two vital requirements:

- 1) a team of dedicated and enthusiastic healthcare workers who are willing to spend time and effort to make the process happen, and
- 2) an efficient audit system where roles and responsibilities are well-defined.

Firstly, those entrusted with caring for children in your institution need to agree with and be committed to the following Child PIP principles, as laid out in the Checklist for Making Child PIP Happen:

- Systematic mortality review directed at improving the quality of care that children receive in the health system, is necessary
- Child PIP, and its structured mortality review framework, is what should be used in every hospital
- The Child PIP four component review process should be followed
- The Child PIP mortality review meeting agenda should be used
- Data must be systematically gathered, entered and analysed
- Data must be forwarded to the national Child PIP database every six months (February and August)
- There must be one dedicated computer for Child PIP data entry at each site

Understanding and accepting these principles will go a long way to enabling the successful implementation of the mortality review process for children in your hospital.

Once there is sufficient understanding of and agreement with these principles, the next step is to understand the core Child PIP activities, and to clearly assign individual responsibilities to each activity (listed in the second part of the Checklist). This is the place where the 'committed enthusiasts' start to shine!

The final group work exercise is to gather in your institutions, to reflect on the principles and start allocating responsibilities. This will hopefully be the beginning of strengthening the Child PIP team in your hospital.

Within the Child PIP network not only does each site's data become a part of the national database but Child PIP also offers support and encouragement through like-minded and like-experienced people. By ensuring Child PIP happens in a sustained way, healthcare workers will be able to contribute to saving lives and improving care of children in hospital.

Our purpose IS to change the way we care for children and through the training programme we have learnt that Child PIP is a tool that can help us...

### Child PIP: Saving lives through death auditing

## Key points

- Much has been achieved through the use of Child PIP, both locally, provincially and nationally
- Making change happen involves analysing data meaningfully and utilising it effectively
- Making Child PIP happen requires a dedicated, enthusiastic team of healthcare workers who take responsibility for the tasks assigned to them
- The purpose of Child PIP is to improve quality of care for children admitted to hospital



## Practical tasks

### Task 1: Data to Action

#### Instructions for facilitators

**This is a difficult task and ONLY for experienced Child PIP users!!  
It may be omitted depending on the participants' needs and time availability...**

The purpose of this task is assist participants to reflect meaningfully on data that has been collected, entered onto the computer and analysed using the Child PIP software. Participants are to be encouraged to think about the data and what it is telling them, as well as to think about possible interventions that could be implemented to address the identified problems.

To gain the most from the discussion it is essential that each group be well-facilitated. The facilitator will need to review the data tables prior to the group session to identify possible discussion points (some examples are given below if the group gets stuck), as well as be familiar with the two different starting points ('Child PIP data' or 'a question').

#### Example 1: Child PIP data

- What do you think about the Length of stay data? What is the data telling us?  
(34% of deaths occur in the first 24 hours of admission)
- What could be contributing to or causing this problem?  
(Problems with pre-admission process, e.g. emergency transport or late presentation)
- What new information do you need to check your ideas  
(Review folders for further information)
- What possible interventions can you identify?  
(Arrange meetings EMRS to discuss protocol for paediatric transfers)

#### Example 2: A question

- Describe a recent issue in child healthcare and the question it raised for you  
(I have recently taken over the children's ward and wanted to know the top five causes of death to be able to plan and allocate resources)
- Which Child PIP standard or custom-designed reports could help provide some answers?  
(406 All Diagnoses Individual and Design Own Report option cross-tabbing Cause of Death with Age Group)

- Participants to work in groups with an experienced facilitator who will guide the discussion
- The group must choose which of the two starting points they wish to work from
- Ask participants to spend five minutes reviewing the Child PIP 2007 data tables to see if anything attracts their attention and why

OR

- Ask participants to reflect on a recent experience in child healthcare that has raised a question for them
- Then follow the instructions on the relevant worksheet ('Child PIP data' or 'A question')
- Keep the discussion simple and encourage broad thinking skills



## **Materials**

### **1 CHILD PIP 2007 DATA (EXPORTED TO EXCEL®)**

See overleaf

### **2 CHILD PIP ANALYSES: STANDARD AND DESIGN OWN REPORT**

A list of the available standard Child PIP reports and the options for the Design Own Report facility follow after the 2007 data tables overleaf

### **3 STARTING POINT WORKSHEETS ('A QUESTION' AND 'CHILD PIP DATA')**

These two worksheets are included for use with the Data to Action tasks

## **2007 Child PIP SA Data**

### **CORE**

#### **Baseline data**

Name	Number
1.TotalAdmissions	63490
2.TotalDeaths	3206
3.InHospitalMortalityRate	5
4.AuditedDeaths	3781
5.TotalModifiableFactors	8166
6.ModifiableFactorsPerDeath	2.2

### **CHARACTERISE DEATHS**

#### **Age**

AgeGroup	Number	Percent
0 - 28 Days	235	6.2
28 Days - 1 Year	2226	59
1 Year - 5 Years	896	23.7
5 Years - 13 Years	401	10.6
13 Years - 18 Years	10	0.3
Unknown	8	0.2
Total	3776	100

#### **Weight**

WeightCategory	Number	Percent
1. OWFA	39	1
2. Normal	1043	27.6
3. UWFA	1160	30.7
4. Marasmus	885	23.4
5. Kwashiorkor	219	5.8
6. M-K (Marasmic-Kwashiorkor)	134	3.5
Unknown	296	7.8
Total	3776	100

#### **Length of stay**

LengthOfStay	Number	Percent
DOA	213	5.6
< 24 Hours	1051	27.8
1-3 Days	937	24.8
4-7 Days	580	15.4
8-14 Days	452	12
> 14 Days	543	14.4
Unknown	0	0
Total	3776	100

#### **When death occurred**

TimeCategory	Number	Percent
Weekday (07:00 - 19:00)	1353	35.8
Weeknight (19:00 - 07:00)	1320	35
Weekend / Public Holiday	1074	28.4
Unknown	6	0.2
Total	3776	100

#### **Mother's wellbeing**

MothersWellBeing	Number	Percent
1. Alive and well	2684	71.1
2. Dead	286	7.6
3. Sick	338	9
Unknown	468	12.4
Total	3776	100

**HIV Laboratory**

LabCategory	Number	Percent
1. Negative	476	12.6
2. Exposed	913	24.2
3. Infected	1221	32.3
4. No result	111	2.9
5. Not tested (but indicated)	283	7.5
6. Not tested (not indicated)	224	5.9
Unknown	548	14.5
Total	3776	100

**HIV Clinical stage**

ClinicalStage	Number	Percent
1: Stage I	72	1.9
2: Stage II	111	2.9
3: Stage III	534	14.1
4: Stage IV	1189	31.5
5: Not staged (but indicated)	459	12.2
6: Not staged (not indicated)	748	19.8
Unknown	663	17.6
Total	3776	100

**PMTCT**

PerinatalARV	Number	Percent
1. Prophylaxis given	657	17.4
2. Prophylaxis not given	583	15.4
3. Mother negative at delivery	532	14.1
Unknown	2004	53.1
Total	3776	100

**Feeding**

FeedingPractice	Number	Percent
1. Exclusive breast for 6/12	532	14.1
2. No breast, ever	842	22.3
3. Mixed, from birth	686	18.2
Unknown	1716	45.4
Total	3776	100

**Cotrimoxazole**

Cotrimoxazole Prophylaxis	Number	Percent
1. Current	1063	28.2
2. Ever	101	2.7
3. Never (but indicated)	623	16.5
4. Never (not indicated)	819	21.7
Unknown	1170	31
Total	3776	100

**ART - child**

ARTChild	Number	Percent
1. Current	247	6.5
2. Ever	41	1.1
3. Never (but indicated)	1492	39.5
4. Never (not indicated)	1181	31.3
Unknown	815	21.6
Total	3776	100

## CAUSE OF DEATH

### Causes of death (ALL diagnoses)

Causes of Death	Main	Other	Total	% of Deaths	% of Causes
Pneumonia, ARI	672	367	1039	27.5	16.2
Septicaemia, possible serious bacterial infection	611	287	898	23.8	14
Acute diarrhoea, hypovolaemic shock	507	305	812	21.5	12.6
PCP (suspected)	358	103	461	12.2	7.2
TB: Pulmonary	145	205	350	9.3	5.5
Other Endocr, Nutritional, Metabol. (specify)	82	208	290	7.7	4.5
Chronic diarrhoea	133	142	275	7.3	4.3
Meningitis: bacterial	148	59	207	5.5	3.2
Anaemia	18	155	173	4.6	2.7
TB: Meningitis	100	27	127	3.4	2
Other diagnosis (specify)	62	63	125	3.3	1.9
Other Nervous System (specify)	53	71	124	3.3	1.9
Other Respiratory System (specify)	74	48	122	3.2	1.9
TB: Millitary, other extra-pulmonary	48	40	88	2.3	1.4
Cirrhosis, Portal Hypertension, Liver Failure, Hepatitis	48	30	78	2.1	1.2
Hospital-acquired infection	43	32	75	2	1.2
Other Poisoning (specify)	30	42	72	1.9	1.1
Status epilepticus	37	34	71	1.9	1.1
Other Oncology/Heamatology (specify)	10	60	70	1.9	1.1
Other possible serious infection (specify)	34	34	68	1.8	1.1
Hypoglycaemia	18	46	64	1.7	1
Acute renal failure	23	41	64	1.7	1
Heart failure, Pulmonary Oedema	30	30	60	1.6	0.9
Ill-defined/Unknown cause of mortality	49	2	51	1.4	0.8
Unknown	38	6	44	1.2	0.7
PCP (confirmed)	30	13	43	1.1	0.7
Cardiomyopathy	19	19	38	1	0.6
Other Circulatory System (specify)	22	12	34	0.9	0.5
Other Digestive System (specify)	9	25	34	0.9	0.5
Inhalation of foreign body or gastric content	24	9	33	0.9	0.5
Congenital Heart Disease	18	11	29	0.8	0.5
Meningitis: viral (meningo-encephalitis)	14	13	27	0.7	0.4
Other Genito-urinary System (specify)	4	22	26	0.7	0.4
Dysentery	6	20	26	0.7	0.4
Other inflammatory disease of CNS (e.g. abscess)	18	4	22	0.6	0.3
Pneumothorax, Pyothorax, Pleural effusion	7	15	22	0.6	0.3
Surgical (Appendix, hernia, intestines, peritoneum)	12	10	22	0.6	0.3
Tumours	18	1	19	0.5	0.3
Leukeamias	15	2	17	0.5	0.3
Burns	9	4	13	0.3	0.2
Myocarditis	7	3	10	0.3	0.2
Congenital Infections (not HIV)	2	7	9	0.2	0.1
Croup	7	2	9	0.2	0.1
Chronic renal disease	1	6	7	0.2	0.1
Non-accidental injury, Abuse-related, Neglect	4	3	7	0.2	0.1
Other accidents (incl. Drowning; specify)	5	1	6	0.2	0.1
Acute nephritis	4	2	6	0.2	0.1
Transport-related accidents	5	0	5	0.1	0.1
Asthma	1	2	3	0.1	0
Cong malformations of the respiratory system	3	0	3	0.1	0
Bites and Stings, Toxic plants	1	1	2	0.1	0
Malaria	2	0	2	0.1	0
Measles	0	2	2	0.1	0
Paraffin	2	0	2	0.1	0
RHD, Rheumatic fever	1	0	1	0	0
IDDM, DKA	1	0	1	0	0
Total	3776	2646	6422	100	100



## MODIFIABLE FACTORS

### Records

QualityOfRecords	Number	Percent
1. Folder not available	158	4.2
2. Folder present, records incomplete	819	21.7
3. Folder present, notes inadequate (quality of notes	173	4.6
4. Folder present, records incomplete AND notes inac	204	5.4
5. Folder available, records & notes OK	2297	60.8
Unknown	125	3.3
Total	3776	100

### Occurrence per death: WHERE

ModFactorPlace	Possible	Probable	Number	Deaths	MFs per Death
Ward	1890	351	2241	3776	0.6
A&E	1199	319	1518	3776	0.4
Referring Facility & Transit	58	23	81	3776	0
Clinic/Outpatients	1038	193	1231	3776	0.3
Home	2372	715	3087	3776	0.8
Total	6557	1601	8158	3776	2.2

### Proportion of all MFs: WHERE

ModFactorPlace	Possible	Probable	Number	Percent
Ward	1890	351	2241	27.5
A&E	1199	319	1518	18.6
Referring Facility & Transit	58	23	81	1
Clinic/Outpatients	1038	193	1231	15.1
Home	2372	715	3087	37.8
Total	6557	1601	8158	100

### Occurrence per death: WHO

ModFactorPlace	Possible	Probable	Number	Deaths	MFs per Death
Clinical Personnel	3139	746	3885	3776	1
Administrator	1112	125	1237	3776	0.3
Caregiver	2306	730	3036	3776	0.8
Total	6557	1601	8158	3776	2.2

### Proportion of all MFs: WHO

PersonType	Possible	Probable	Number	Percent
Clinical Personnel	3139	746	3885	47.6
Administrator	1112	125	1237	15.2
Caregiver	2306	730	3036	37.2
Total	6557	1601	8158	100



## Child PIP: Standard reports

## 101 Baseline Data - All Hospitals

**Run Report**

Limit To  
☒ All Hospitals ☐ My Hospital List  
☐ My Hospital Only

**0. All Reports**

- 1. Core**
  - 101 Baseline Data**
- 2. In-hospital Mortality Rates**
  - 201 Age
  - 202 Weight
  - 203 Illness
- 3. Characterise Deaths**
  - 301 Residential Subdistrict
  - 302 Ward Type
  - 311 Age Category
  - 312 Gender
  - 321 Re-admission
  - 322 When Death Occurred
  - 323 Length of Stay
  - 331 Referred
  - 332 Referred From
  - 333 Drainage Area
  - 334 Referring Hospital/Clinic
  - 341 Mother's Wellbeing
  - 342 Father's Wellbeing
  - 343 Primary Caregiver
  - 351 Weight Category
  - 361 HIV Laboratory Category
  - 362 HIV Clinical Stage
  - 363 Perinatal ARV
  - 364 Feeding Practice
  - 365 Cotrimoxazole Prophylaxis
  - 366 ART Child
  - 367 ART Mother
- 4. Causes of Death**
  - 401 Main Cause of Death: Individual
  - 402 Main Cause of Death: Group
  - 403 Underlying Condition
  - 404 Other Important Diagnoses: Individual
  - 405 Other Important Diagnoses: Group
  - 406 All Diagnoses: Individual
  - 407 All Diagnoses: Group
- 5. Modifiable Factors**
  - 501 Quality Of Records
  - 511 Where: Rate per Death
  - 512 Where: Proportion of all MFs
  - 513 Who: Rate per Death
  - 514 Who: Proportion of all MFs
  - 521 All MFs: Individual
  - 522 All MFs: Group
  - 531 Where: Ward
  - 532 Where: A&E
  - 533 Where: Referring Facility & Transit
  - 534 Where: Clinic
  - 535 Where: Home
  - 541 Who: Clinical Personnel
  - 542 Who: Administrator
  - 543 Who: Caregiver
  - 551 Was the Death Avoidable?
- 6. Location Of Death**
  - 601 Province
  - 602 District
  - 603 Subdistrict
  - 604 Hospital

**Filters** **Tabular** **Graphs** **Report Description** **Pivot**

**101 Baseline Data (January)**

Name	Number
1.TotalAdmissions	337776
2.TotalDeaths	17438
3.InHospitalMortalityRate	5.2
4.AuditedDeaths	18516
5.TotalModifiableFactors	53013
6.ModifiableFactorsPerDeath	2.9



## Child PIP: Design Own Report

### Options

Diagram illustrating the options available for the Cross Tab Tool, categorized by the selected radio button option:

- Patient Data**
  - Field list**
    - Age Category
    - Area Referred From
    - Caregiver
    - Child ART
    - Cotrimoxazole Category
    - Dead On Arrival
    - District
    - Facility Referred From
    - Fathers Wellbeing
    - Feeding Category
    - Gender
    - HIV Clinical Stage
    - HIV Lab Category
    - Hospital
    - Main Cause Of Death
    - Main Cause Of Death Category
    - Mother ART
    - Mothers Wellbeing
    - Other Cause Of Death
    - Patient Subdistrict
    - Perinatal ARV
    - Period
    - Population Served
    - Province
    - Quality Of Records
    - ReAdmission
    - Referral Level
    - Referred
    - Referred From
    - Subdistrict
    - Time Category
    - Underlying Condition
    - Ward
    - Ward Type
    - Was Death Avoidable
    - Weight Category
    - Year
- Monthly Tallies**
  - Field list**
    - Admission <3rd Centile
    - Admission >= 3rd Centile
    - Admission 0 - 28 days
    - Admission 1 - 5 Years
    - Admission 13 - 18 Years
    - Admission 28 days - 12 months
    - Admission 5 - 13 Years
    - Admission ARI
    - Admission DD
    - Admission Other Diagnosis
    - Admission Weight Unknown
    - Death <3rd Centile
    - Death >= 3rd Centile
    - Death 0 - 1 Month
    - Death 1 - 12 Month
    - Death 1 - 5 Years
    - Death 13 - 18 Years
    - Death 5 - 13 Years
    - Death ARI
    - Death DD
    - Death Other Diagnosis
    - Death Weight Unknown
    - In-hospital Mortality Rate
- Modifiable Factors**
  - Field list**
    - Age Category
    - Dead On Arrival
    - District
    - Gender
    - HIV Clinical Stage
    - HIV Lab Category
    - Hospital
    - Main Cause Of Death
    - MF Category
    - MF Code
    - MF Description
    - MF Person
    - MF Place
    - MF v3 Code
    - Period
    - Population Served
    - Province
    - Quality of Records
    - ReAdmission
    - Referral Level
    - Referred
    - Subdistrict
    - Ward
    - Ward Type
    - Was Death Avoidable
    - Weight Category
    - Year



## STARTING POINT: CHILD PIP DATA

[illegible]

## STARTING POINT: A QUESTION

**1) REFLECT ON A RECENT EXPERIENCE IN CHILD CARE AND A QUESTION IT RAISES FOR YOU.**

- Describe the question.

2) LOOK AT THE DATA TABLES TO SEE IF YOU CAN FIND SOME ANSWERS. WHAT REPORT WOULD YOU NEED TO DESIGN TO GET MORE INFORMATION?

- Use Child PIP set analyses list and 'Design your own report' options.



## Task 2: Completing the Checklist for Making Child PIP Happen

### Instructions for facilitators

The purpose of this task is assist participants to discuss the different components of the Child PIP process and delegate responsibilities amongst staff.

**This exercise is most worthwhile if all the healthcare workers caring for children at a particular site can meet together as a small group for discussion and completion of the checklist which can then be used as a REAL checklist for their own hospital**

- Participants to work in institutional groups
- Select a facilitator from the group (probably the person who will ultimately take responsibility for Child PIP in that institution)
- Ask the facilitator to read the first section of the Checklist for Making Child PIP Happen to the group and allow them to discuss the Child PIP principles for a few minutes
- Encourage discussion around quality of care issues
- Once everyone is familiar with and willing to be committed to the Child PIP principles, move to the second section of the form which lists the different tasks to be completed
- Ask the facilitator to lead the discussion around the practicalities of ensuring Child PIP can be sustainably implemented at the institution
- Finally ensure that a person has been identified to be responsible for each aspect of the Child PIP process and that the names have been recorded
- Check that the form has the hospital name and the date
- Make a copy for your records and ensure the facilitator keeps the original

### Materials

#### **1 CHECKLIST FOR MAKING CHILD PIP HAPPEN**

See overleaf

#### **2 ALL MEMBERS OF THE TEAM CARING FOR CHILDREN IN THE INSTITUTION**



# Checklist for Making Child PIP Happen

Child PIP v3.1



For Child PIP to be sustainably implemented, it is important to understand and recognise the fundamental components of the mortality audit process, to make a commitment to doing them the Child PIP way, and to assign responsibility to the key operational elements of the Child PIP process.

This checklist helps you assess whether your hospital is ready to do it the Child PIP way.

Hospital Name: \_\_\_\_\_

Date: \_\_\_\_\_

Principles to which we are committed		
Systematic mortality review directed at improving the quality of care that children receive in the health system, is necessary		✓
Child PIP, and its structured mortality review framework, is what we will use in our hospital		✓
The Child PIP four-component mortality review process will be followed		✓
The Child PIP mortality review meeting agenda will be followed		✓
Data will be systematically gathered, entered and analysed		✓
Data will be forwarded to the SA Child PIP National Database in February and August		✓
There will be one dedicated computer for data entry in each site		✓
Review Process		Who
<b>24 hour review:</b>	All deaths and DOA's	
<b>Preparatory meeting:</b>	Task review Statistics Case selection	
<b>Mortality meeting:</b>	Chairperson Minutes Presenter	
<b>Report:</b>	Compiling & writing	
Data Management		
<b>Tracking:</b>	Outpatients/Casualty Inpatients	
<b>Paper:</b>	Monthly tallies Deaths	
<b>Software:</b>	Data entry Data export	
Name		Cell & email
<b>My provincial co-ordinator:</b>		
<b>In February and August, I send national data to:</b>		



## **APPENDIX 1 – CHILD PIP DATA CAPTURE FORMS**

- **Monthly Tally Sheet**
- **Monthly Deaths Register**
- **Death Data Capture Sheet**





Child Healthcare Problem Identification Programme

# TRAINING AND REFERENCE MANUAL

Child PIP v3.1

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# Monthly Tally Sheet

Child PIP v3.1



Hospital: \_\_\_\_\_

Year: \_\_\_\_\_

Ward: \_\_\_\_\_

Month: \_\_\_\_\_

		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
<b>Age</b>	0 - < 28 days			
	≥ 28 days - < 1 yr			
	≥ 1 yr - < 5 yrs			
	≥ 5 yrs - < 13 yrs			
	≥ 13 yrs - 18 yrs			
	Unknown			
	<b>Totals</b>			

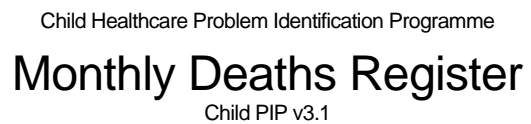
<b>Complete information below for children <u>&lt; 5 years only</u></b>				
		Admissions <sup>1</sup>	Deaths <sup>2</sup>	IHMRs <sup>4,5</sup>
<b>Weight</b>	Above or on 3 <sup>rd</sup> centile			
	UWFA			
	Severe malnutrition <sup>3</sup>			
	Unknown			
	<b>Totals (&lt; 5 years)</b>			
<b>Illness</b>	Acute respiratory infections (ARI)			
	Diarrhoeal disease (DD)			
	Other			
	<b>Totals (&lt; 5 years)</b>			

**Notes:**

1. Include **all** children admitted to your institution's paediatric/paediatric surgical/children's service
2. If age categories are not known, enter zero in age boxes and the total number admissions/deaths in 'Unknown'
3. Severe malnutrition includes marasmus, marasmic-kwashiorkor and kwashiorkor
4. Only enter one diagnosis per admission (choose the most appropriate if more than one applicable)
5. Shaded areas will be automatically calculated by the computer
6. In-hospital mortality rates can be manually calculated: 
$$\text{IHMR} = \frac{\text{deaths}}{\text{admissions}} \times 100$$

Compiled by: \_\_\_\_\_ (Print name) \_\_\_\_\_ (Sign)

Date: \_\_\_\_\_ Fax/Tel number: \_\_\_\_\_



Year: \_\_\_\_\_

Month: \_\_\_\_\_

[illegible]

# Child Death Data Capture Sheet

Child PIP v3.1

*Confidential document*

Patient name:				Folder no:				Residential Subdistrict:			
DoB	yyyy-mm-dd	Age	pc auto	Gender	M / F / U	Re-admission	Y / N / U	Dead on arrival	Y / N / U		
Date of Admission		yyyy-mm-dd		Time of Admission		hh : mm		When death occurred		Weekend / Public holiday	
Date of Death		yyyy-mm-dd		Time of Death		hh : mm		Weekday (07:00-19:00)		Weeknight (19:00-07:00) / Unknown	

**Records (include RTHC assessment)**

1. Folder not available	2. Folder present, records <u>incomplete</u>	3. Folder present, notes <u>inadequate</u> (quality of notes is poor)	4. Folder present, records <u>incomplete</u> AND notes <u>inadequate</u>	5. Folder available, records & notes OK
-------------------------	--	---	--	---

**Referred**

	Name of referring hospital/clinic:				
Y / N / U	If yes, from:	1. Another hospital	2. A clinic	3. Private practitioner	Unknown
	If yes, from:	1. Inside drainage area	2. Outside drainage area	Unknown	

**Social**

Mother	1. Alive and well	2. Dead	3. Sick	Unknown	Primary caregiver	1. Mother	2. Grandmother	3. Father
Father	1. Alive and well	2. Dead	3. Sick	Unknown		4. Other: _____	Unknown	

**Nutrition (tick one category box, then fill in actual weight)**

1. OWFA	2. Normal	3. UWFA	4. Marasmus	5. Kwashiorkor	6. M-K	Unknown	Weight _____ kg
---------	-----------	---------	-------------	----------------	--------	---------	-----------------

**HIV & AIDS (enter status at time of admission, not at time of audit: this is NOT a post-mortem assessment)**

Lab	1. Negative	2. Exposed	3. Infected	4. No result	5. Not tested (but indicated)	6. Not tested (not indicated)	Unknown
Clinical	1. Stage I	2. Stage II	3. Stage III	4. Stage IV	5. Not staged (but indicated)	6. Not staged (not indicated)	Unknown
Perinatal ARV	1. Prophylaxis given		2. Prophylaxis not given		3. Mother negative at delivery		Unknown
Feeding in first 6 months	1. Exclusive breast for 6/12		2. No breast, ever		3. Mixed, from birth		Unknown
Cotrimoxazole	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown
ART (child)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown
ART (mother)	1. Current		2. Ever		3. Never (but indicated)		4. Never (not indicated) / Unknown

**Cause of Death (insert codes)**

Main cause of death:				Underlying condition (if any):			
Other important diagnoses (max 4):							

**Modifiable Factors (insert codes)**

Code	Ward: Hospital		Comments	Code	Referring Facility & Transit		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Clinic/Outpatients		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible		Probable	Possible		
Code	Admissions & Emergency: Hospital		Comments	Code	Home		Comments
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	
	Probable	Possible			Probable	Possible	

**In your opinion, had the process of caring been different, would this death have been avoidable?**

1. Yes	2. Not sure	3. No	Unknown
--------	-------------	-------	---------

Case Summary/Comments (write summary at time of death, if possible)

Child's Details (age, weight, where from, admission date/time)

History of Presenting Complaint

Relevant Background History (including details of HIV and TB)

Examination

Problem List

Problem	Investigations	Progress	Outcome
1.			
2.			
3.			
4.			
5.			

Comments



## **APPENDIX 2 – CHILD PIP CODE LISTS**

- **Causes of Death**
- **Modifiable Factors**



Child Healthcare Problem Identification Programme

# TRAINING AND REFERENCE MANUAL

Child PIP v3.1

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# Causes of Death

Child PIP v3.1



Please note: The **nutritional** categories and the clinical and laboratory classifications concerning **HIV** do not appear here. They have to be captured in the relevant fields on the data sheet.

Category	Causes of Death	Code
<b>Infections and Parasitic Diseases</b>	Acute diarrhoea, hypovolaemic shock	101
	Chronic diarrhoea	102
	Dysentery	103
	TB: Pulmonary	110
	TB: Meningitis	111
	TB: Miliary, other extra-pulmonary	112
	Septicaemia, possible serious bacterial infection	120
	Congenital Infections (not HIV)	130
	Meningitis: Bacterial	140
	Meningitis: Viral (meningo-encephalitis)	141
	Other inflammatory disease of CNS (e.g. abscess)	142
	Measles	150
	Other possible serious infection (specify)	151
	Malaria	170
	Hospital-acquired infection	180
<b>Oncology, Haematology</b>	Leukaemias	201
	Tumours	204
	Anaemia	202
	Other Oncology/Haematology (specify)	203
<b>Endocrine, Nutritional, Metabolic</b>	IDDM, DKA	301
	Hypoglycaemia	304
	Other Endocrine, Nutritional, Metabolic (specify)	305
<b>Nervous System</b>	Status epilepticus	401
	Other Nervous System (specify)	402
<b>Circulatory System</b>	RHD, Rheumatic fever	501
	Heart failure, Pulmonary oedema	502
	Myocarditis	503
	Cardiomyopathy	504
	Congenital Heart Disease	507
	Endocarditis	505
	Other Circulatory System (specify)	506
<b>Respiratory System</b>	Croup	601
	Pneumonia, ARI	602
	PCP (suspected)	603
	PCP (confirmed)	608
	Pneumothorax, Pyothorax, Pleural effusion	604
	Asthma	605
	Congenital malformations of the respiratory system	606
	Other Respiratory System (specify)	607



Category	Causes of Death	Code
<b>Digestive System</b>	Cirrhosis, Portal Hypertension, Liver Failure, Hepatitis	701
	Surgical (appendix, hernia, intestines, peritoneum)	702
	Other Digestive System (specify)	703
<b>Genito-urinary System</b>	Acute nephritis	801
	Acute renal failure	802
	Chronic renal disease	803
	Other Genito-urinary System (specify)	804
<b>Ill-defined/Unknown Cause</b>	Ill-defined/Unknown causes of mortality	900
<b>Other Diagnosis</b>	Other diagnosis (specify)	901
<b>Burns</b>	Burns	1000
<b>Poisoning</b>	Paraffin	1101
	Corrosives	1102
	Other Poisoning (specify)	1103
<b>Bites and Stings, Toxic plants</b>	Bites and stings, Toxic plants	1200
<b>Inhalation/Aspiration</b>	Inhalation of foreign body or gastric contents	1300
<b>Accidents</b>	Transport-related accidents	1400
	Other accidents (incl. Drowning; specify)	1500
<b>Non-accidental injury, Abuse</b>	Non-accidental injury, Abuse-related, Neglect	1600
<b>Homicide</b>	Homicide	1700
<b>Suicide</b>	Suicide	1800

Underlying Conditions	Code
Cerebral palsy	1
Hydrocephalus	2
Birth defect (preconception = chromosomal/genetic, or post conception e.g. foetal alcohol syndrome)	3
Ex-low birth weight/preterm infant	4
Twin/Multiple pregnancy	5
Other Underlying Condition (specify)	10

## Categorising Modifiable Factors

### Who is responsible

Where they occur

	Clinical Personnel	Administrators	Family/Caregiver
<b>Ward</b>	Clinical Methods Assessment Management Monitoring	Infrastructure Staff Consumables	Growth & development Disease prevention Home treatment Care seeking & compliance
<b>Emergency &amp; Admission</b>	Clinical Methods Assessment Management Monitoring	Infrastructure Staff Consumables	Growth & development Disease prevention Home treatment Care seeking & compliance
<b>Referring Facility &amp; Transit</b>	Pre-transit care in referring facility In-transit care	Pre-transit care in referring facility In-transit care	Growth & development Disease prevention Home treatment Care seeking & compliance
<b>Clinic and Outpatient Care</b>	Clinical Methods Assessment Management Monitoring	Infrastructure Staff Consumables	Growth & development Disease prevention Home treatment Care seeking & compliance
<b>Home</b>	Promotion Prevention Social support	Transport Community development	Growth & development Disease prevention Home treatment Care seeking & compliance

### Notes on codes:

The coding format has changed to enable more efficient data sorting and analysis. The modifiable factors are grouped against priority conditions and activities as described in IMCI, ETAT, and the WHO Pocketbook on Hospital Care for Children.

PLEASE note that although the categories of modifiable factors are presented beginning at home, the order of the code list has been reversed, starting with the ward, to avoid undue caregiver-blaming.

- First letter applies to “**place**”: **W** = **Ward**; **E** (admission and **Emergency**) = the place of entry to the hospital and admission; **T** = **Transit** (Referring facility and ambulance); **C** = **Clinic** and Outpatient care (i.e. ambulatory); **H** = **Home**
- Second letter applies to the “**who**”: **P** = clinical **Personnel**; **A** = administrator; **F** = **Family/** caregiver
- Third letter or digit applies to the priority condition or activity. **R** = **Records**; **M** = **Clinical Methods**; **O** = **Other** and has “COMMENT” fields (If you use this code, you should add the modifiable factor in the ‘Comment’ box); **X** = **Cross-cutting**; **1** = **Danger Signs**; **2** = **ARI**; **3** = **DD**; **4** = **Fever**; **5** = **Nutrition**; **6** = **PSBI** (Sepsis); **7** = **HIV**; **8** = **TB**; **9** = **Immunisation**
- Please note: a **Referral** hospital is a higher level hospital you refer your patients to; and a **Referring** hospital is a lower level hospital where your patients come from
- Acronyms used in the code list include:

A&E	Admissions and Emergency	IV	Intravenous
APLS	Advanced Paediatric Life Support	LP	Lumbar puncture
ARI	Acute Respiratory Infection	NGT	Nasogastric tube
BLS	Basic Life Support	PSBI	Possible Serious Bacterial Infection
CDG	Child Dependency Grant	OPD	Outpatients Department
CSG	Child Support Grant	RTHC	Road to Health Chart
DD	Diarrhoeal Disease	SIRS	Systemic Inflammatory Response Syndrome
ETAT	Emergency Triage, Assessment and Treatment	TB	Tuberculosis
FCG	Foster Care Grant	WHO	World Health Organisation
HIV	Human Immunodeficiency Virus		



# Modifiable Factors

Child PIP v3.0.2



## Ward

Priority Condition or Activity	Category	v3 Code	Modifiable factor
<b>Ward - Clinical Personnel</b>			
Records	Notes	WPR01	Insufficient notes on clinical care in ward (assess, manage, monitor)
Clinical methods	Problem List	WPM01	Inadequate case assessment and management at previous admission to ward
	History	WPM02	Inadequate history taken in ward
	Examination	WPM03	Inadequate physical examination in ward
	Investigation	WPM04	Inadequate investigations in ward
		WPM05	Results of investigations inadequately documented (including x-rays) in ward
	Problem List	WPM06	Inadequate daily 'Problem List' in ward
	Plan	WPM07	Inadequate daily 'Care Plan' in ward
Emergency & Priority Conditions	Assess	WP101	New danger signs inadequately identified while in ward
	Manage	WP102	Inadequate response to new danger signs
	Monitor	WP103	Danger signs missed due to inadequate monitoring in ward
ARI	Assess	WP201	Inadequate review of severe ARI in ward
	Manage	WP202	Inadequate oxygen therapy in ward
	Monitor	WP203	Inadequate response to non-responding ARI/pneumonia
		WP204	Inadequate monitoring of respiratory rate and/or oxygen saturation in ward
DD	Assess	WP301	Inadequate review of child with severe dehydration
	Manage	WP302	Inadequate revision of fluid management plan, despite child's changing condition in ward
	Monitor	WP303	Inadequate blood chemistry review in child with shock and/or dehydration
		WP304	Inadequate monitoring of shocked child in ward
Convulsions/ Coma	Assess	WP401	Inadequate assessment of fitting and/or comatose child in ward
	Manage	WP402	Convulsions not managed according to standardised protocol in ward
		WP403	Inadequate referral to higher level of care for child with coma, from ward
	Monitor	WP404	Inadequate monitoring of blood glucose in ward
		WP405	Children's coma score and/or 'neuro-obs' not done in ward
		WP406	Inadequate monitoring of convulsions in ward
Nutrition/ Intake	Assess	WP501	Child not categorised as having severe malnutrition in ward
	Manage	WP502	Too much/too little, incorrect type of IV fluids given in ward
		WP503	Inadequate prescription for IV fluids in ward
		WP504	NGT feedings not prescribed when indicated in ward
		WP505	WHO '10 Steps' not followed for child with severe malnutrition
		WP506	Prescribed NGT feeds not given in ward
		WP507	Prescribed feeds not given in ward
		WP508	Inadequate NGT feeding technique causing problems, e.g. cough, cyanosis
	Monitor	WP509	Inadequate monitoring of IV fluids and/or drip sites
		WP510	Inadequate intake-output charting in ward
PSBI	Assess	WP601	Possible serious bacterial infection (including nosocomial infection) not considered in ward
		WP602	Inadequate 'septic workup' in ward
	Manage	WP603	Inadequate antibiotics prescribed in ward
	Monitor	WP604	Child with 'septic shock'/SIRS inadequately monitored in ward



# Modifiable Factors

Child PIP v3.0.2



Priority Condition or Activity	Category	v3 Code	Modifiable factor
HIV	Assess	WP701	Inadequate HIV assessment in ward
		WP702	HIV-infected but not adequately screened for TB
		WP703	Inadequate HIV review (testing and staging) in ward
	Manage	WP704	Delayed initiation of ART in ward
	Monitor	WP705	HIV results (including serology, PCR and viral load) not obtained in ward
TB	Assess	WP801	Inadequate TB assessment in ward
		WP802	TB-infected child, but not screened for HIV
		WP803	Inadequate TB review in ward
	Manage	WP804	Inadequate initiation of TB treatment
		WP805	Incorrect TB regimen prescribed in ward
	Monitor	WP806	TB not notified
Immunisation	Manage	WP901	Immunisations not brought up to date in ward
Cross-cutting	Communication	WPX01	Doctor not called for critically ill child in ward
		WPX02	No hand-over of critically ill child in ward
		WPX03	Doctor called, but did not respond and/or did not come
		WPX06	Junior doctor did not call more senior doctor to ward
		WPX07	Doctor at peripheral hospital did not call referral hospital
		WPX08	Inadequate advice from higher level facility
		WPX09	Unable to contact responsible doctor at higher level facility
		WPX10	Critical clinical information inadequately communicated between ward staff
		WPX11	Ward staff inadequately communicated with caregiver
	Monitor	WPX12	Critically ill child not reviewed by doctor during weekend/public holiday in ward
	Manage	WPX04	Essential prescribed treatment not given in ward
		WPX05	No team decision for terminal care
		WPX13	Appropriate blood product not prescribed
		WPX14	Essential treatment not prescribed
Other	Other	WPO	Other clinical personnel modifiable factor in ward (COMMENT)
<b>Ward - Administrator</b>			
Records	Notes	WAR01	Inadequate record keeping system for children in ward
		WAR02	Inadequate notes on administrator problems in ward
Emergency & Priority Conditions	Consumables	WA101	Inadequate blood product supply to ward
	Equipment	WA102	No functioning pulse oxymeter in ward
		WA103	Inadequate oxygen supply to ward
		WA104	Inadequate suction in ward
		WA105	Inadequate resuscitation area and/or trolley in ward
	Buildings/Beds	WA106	Lack of High Care and/or ICU facilities for children in own and higher level facility
ARI	Equipment	WA201	Inadequate oxygen delivery equipment in ward
Nutrition/ Intake	Care Seeking & Compliance	WA501	Inadequate supply of food/milk to ward
PSBI	Consumables	WA601	Inadequate antibiotic supply to ward



# Modifiable Factors

Child PIP v3.0.2

Priority Condition or Activity	Category	v3 Code	Modifiable factor
Cross-cutting	Staff	WAX01	Inadequate number of doctors assigned to children's ward
		WAX02	Doctors in children's ward inadequately supervised
		WAX03	Inadequate number of nurses assigned to children's ward
		WAX04	Inadequate supervision of nurses in children's ward
		WAX05	Lack of professional nurse in children's ward 24 hours a day
		WAX06	Lack of experienced doctors (post Community Service), for children's ward
	Consumables	WAX08	Inadequate ward stock of essential consumables
		WAX09	Inadequate hospital stock of essential consumables
	Laboratory	WAX10	Basic laboratory investigations not available to ward 24 hours a day
	Buildings/Beds	WAX11	Lack of hospital beds and/or ward overcrowded
	Policy	WAX12	Lack of standardised case management protocols in ward
		WAX13	No policy or system for weekend and/or public holiday ward rounds
Other	Other	WAO	Other administrator modifiable factor in ward (COMMENT)
<b>Ward - Family or Caregiver</b>			
Records	Notes	WFR01	RTHC information not present in child's folder
	Care Seeking & Compliance	WFR02	Child's 'patient held records' left at home
		WFR03	Previous folder number and/or discharge letter not available
Danger signs	Care Seeking & Compliance	WF101	Caregiver declined consent for life-saving intervention in ward
HIV	Care Seeking & Compliance	WF701	Caregiver declined HIV test in ward
Other	Other	WFO	Other caregiver modifiable factor in ward (COMMENT)



# Modifiable Factors

Child PIP v3.0.2



## Admissions and Emergency Care

Priority Condition or Activity	Category	v3 Code	Modifiable factor
<b>Admissions and Emergency Care - Clinical Personnel</b>			
Records	Notes	EPR01	Inadequate notes on clinical care (assessment, management, monitoring at A&E)
		EPR02	Admission records incomplete or inappropriate
Clinical methods	History	EPM01	Inadequate history taken at A&E
	Examination	EPM02	Inadequate physical examination at A&E
	Investigation	EPM03	Inadequate investigations (blood, x-ray, other) at A&E
		EPM04	Results of urgent investigations not obtained at A&E
	Problem List	EPM05	Inadequate problem list compiled at A&E
	Plan	EPM06	Inadequate emergency care plan in A&E
Emergency & Priority Conditions	Assess	EP101	Emergency signs not recognised at A&E
		EP102	Priority signs not recognised at A&E
		EP103	Not classified as critically ill despite presence of danger signs at A&E
	Manage	EP104	Child not triaged at A&E (spent time in a queue)
Airway	Assess	EPA01	Airway obstruction not recognised or correctly classified at A&E
	Manage	EPA02	Inadequate management of airway obstruction in A&E
	Monitor	EPA03	Critical airway not monitored at A&E
Breathing	Assess	EPB01	Respiratory rate not taken, respiratory distress not noticed in A&E
	Manage	EPB02	Correct oxygen therapy not prescribed or not given at A&E
	Monitor	EPB03	Oxygen saturation not monitored at A&E
		EPB04	Respiratory rate not monitored at A&E
Circulation	Assess	EPC01	Inadequate assessment of shock at A&E
	Manage	EPC02	Inadequate treatment for shock in A&E (fluid type, amount, rate; intraosseus line)
	Monitor	EPC03	Shock not monitored while awaiting admission, at A&E
DD	Assess	EP301	Inadequate assessment of dehydration at A&E
	Manage	EP302	Inadequate rehydration plan at A&E
	Monitor	EP303	Hydration not reviewed at A&E
Convulsions/ Coma	Assess	EP401	Convulsions not recognised at A&E
	Manage	EP402	Convulsions not managed according to accepted protocol at A&E
	Monitor	EP403	Convulsions not monitored at A&E
	Assess	EP411	Inadequate assessment of level of consciousness at A&E
	Manage	EP412	Inadequate management of child with depressed LOC at A&E
	Monitor	EP413	Blood glucose not monitored in child with danger signs at A&E
		EP414	Level of consciousness not monitored at A&E
PSBI	Assess	EP601	Possible serious bacterial infection not considered at A&E
	Manage	EP602	Appropriate antibiotics not prescribed at A&E
	Investigation	EP603	Important cultures (blood, CSF, urine) not sent at A&E
	Monitor	EP604	LP result not obtained at A&E
HIV	Assess	EP701	Inadequate HIV assessment at A&E
Cross-cutting	Communication	EPX01	Inadequate communication by staff to caregiver at A&E
		EPX02	Doctor not called for critically ill child at A&E
		EPX03	Doctor called for A&E, but did not respond or did not come
		EPX04	No hand-over of critically ill child from admitting doctor to ward doctor at A&E
Other	Other	EPO	Other clinical personnel modifiable factor at A&E (COMMENT)



# Modifiable Factors

Child PIP v3.0.2



Priority Condition or Activity	Category	v3 Code	Modifiable factor
<b>Admissions and Emergency Care - Administrator</b>			
Records	Notes	EAR01	Inadequate notes on administrator problems at A&E
		EAR02	Inadequate record keeping system for A&E
Emergency & Priority Conditions	Policy	EA101	Barriers to entry to A&E service
	Staff	EA102	Insufficient professional nurses allocated to A&E
		EA103	No A&E staff trained in ETAT/BLS/APLS
	Consumables	EA104	Inadequate blood product supply at A&E
		EA105	Inadequate emergency drugs at A&E
	Buildings/Beds	EA106	Inadequate paediatric resuscitation area in casualty/OPD
Airway	Equipment	EAA01	Inadequate suction capability in A&E
Breathing	Equipment	EAB01	No pulse oxymeter at A&E
	Consumables	EAB02	Inadequate oxygen supply and/or equipment at A&E
Circulation	Consumables	EAC01	Inadequate IV fluid supply at A&E
Dehydration	Equipment	EA301	No mechanical intravenous flow controller available at A&E
Convulsions/Coma	Consumables	EA401	Intravenous phenobarbitone not available at A&E
	Equipment	EA402	No children's coma score sheet available at A&E
PSBI	Consumables	EA601	Inadequate antibiotic supply at A&E
Cross-cutting	Staff	EAX01	Lack of experienced doctors at A&E
	Transport	EAX04	Inadequate transport from home to A&E
	Laboratory	EAX05	24 hour emergency laboratory investigations not available to A&E
	Buildings/Beds	EAX06	Lack of ward beds, delaying movement out of Emergency Room
		EAX07	Lack of beds in the resuscitation area/Emergency Room in A&E
		EAX08	Lack of Intensive and High Care beds in own, or higher level hospital
	Policy	EAX09	No formal, structured triage system for A&E
		EAX10	Lack of standardised case management protocols at A&E
Other	Other	EAO	Other administrator modifiable factor at A&E (COMMENT)
<b>Admissions and Emergency Care - Family or Caregiver</b>			
Danger signs	Care Seeking & Compliance	EF101	Did not arrive at A&E on day of referral
		EF102	Declined consent for life saving procedure in A&E
HIV	Care Seeking & Compliance	EF701	Caregiver declined HIV test in A&E
Records	Notes	EFR01	Caregiver did not bring RTHC and/or referral letter to A&E
Cross-cutting	Care Seeking & Compliance	EFX01	Primary caregiver not present at A&E
		EFX02	Accompanying caregiver knew little about the child at A&E
Other	Other	EFO	Other caregiver modifiable factor at A&E (COMMENT)





# Modifiable Factors

Child PIP v3.0.2



## Referring Facility and Transit Care

Priority Condition or Activity	Category	v3 Code	Modifiable factor
Referring Facility and Transit Care - Clinical Personnel			
Referring facility	Notes	TPR01	Inadequate notes on transit care
		TPR02	Inadequate referral letter from referring facility
	Assess	TPP01	Severity of child’s condition incorrectly assessed at referring facility
		TPP02	Child not re-assessed at time of departure from referring facility
	Manage	TPP03	Emergency or priority care not provided at referring hospital
		TPP04	Referring pathway and/or procedure not followed by referring facility
		TPP05	No or delayed referral to higher level
	Monitor	TPP06	Child with life-threatening condition not monitored at referring facility while awaiting ambulance
	Manage	TPP07	No plan for transporting caregiver to receiving facility
TPP08		Inappropriate care or late referral from private sector/GP	
In-transit care	Assess	TPI01	Child not assessed properly by ambulance crew at time of entry into ambulance
		TPI02	Major complications (e.g. blocked or dislodged ETT) in ambulance not identified
	Manage	TPI03	Child not managed correctly in ambulance
	Monitor	TPI04	Child not monitored correctly in ambulance
Other	Other	TPO	Other clinical personnel modifiable factor in transit care (COMMENT)
Referring Facility and Transit Care - Administrator			
Records	Notes	TAR01	Inadequate record keeping system for proper transit care
Pre-transit care	Staff	TAP01	No nurse assigned responsibility for monitoring the child while awaiting the ambulance
Referring facility	Staff	TAP02	No doctor assigned responsibility for monitoring the child while awaiting the ambulance
Referring facility	Consumables	TAP03	Inadequate critical care consumables (e.g. volume expander, ETT, ICD) in referring facility
	Equipment	TAP04	Inadequate monitoring and critical care equipment (e.g. ventilator) in referring facility
	Buildings/Beds	TAP05	No high care bed in referring facility for pre-transfer care of critically ill child
	Policy	TAP06	Referral pathways and/or procedures not clear to referring and/or receiving facility
In-transit care	Transport	TAI01	Inadequate ambulance service from health facility to receiving hospital
		TAI02	No ambulance available for transfer from referring to receiving hospital
		TAI03	Delayed arrival of ambulance at referring facility
		TAI06	No or inappropriate grade of ambulance (i.e. vehicle) available
	Staff	TAI04	Grade of ambulance crew (i.e. personnel) inappropriate for child's condition
	Consumables	TAI05	Inadequate in-transit consumables (e.g. volume expanders, dextrose, anticonvulsant) in ambulance
	Equipment	TAI07	Inadequate monitoring and critical care equipment in ambulance
	Policy	TAI08	No known/available policy on child transfers in ambulance service (EMRS)
Other	Other	TAO	Other administrator modifiable factor in transit care (COMMENT)
Referring Facility and Transit Care - Family or Caregiver			
Danger signs	Care Seeking & Compliance	TF101	Caregiver not available to accompany child on transfer
Other	Other	TFO	Other caregiver modifiable factor in transit care (COMMENT)





# Modifiable Factors

Child PIP v3.0.2



## Clinic and Outpatient Care

Priority Condition or Activity	Category	v3 Code	Modifiable factor
<b>Clinic and Outpatient Care - Clinical Personnel</b>			
Records	Notes	CPR01	Inadequate notes on clinical care (assess, classify, treat) at clinic
		CPR02	RTHC inadequately documents child's health history
		CPR03	Inadequate referral letter from clinic to hospital
Clinical methods	Assess	CPM01	IMCI not used for patient assessment at clinic/OPD
		CPM02	Incorrect IMCI assessment at clinic/OPD
		CPM03	Insufficient assessment for chronic illness at clinic/OPD
		CPM04	Insufficient investigations done at clinic/OPD
	Classify	CPM05	Inadequate IMCI classification at clinic/OPD
	Treat	CPM07	IMCI not used for case management at clinic/OPD
		CPM08	IMCI not used to guide patient referral from clinic/OPD
Danger signs	Assess	CP101	Danger signs missed at clinic/OPD
	Treat	CP102	Inadequate response to danger signs at clinic/OPD
		CP103	Delayed referral of child with danger signs, from clinic/OPD
	Monitor	CP104	Child with danger signs not monitored at clinic/OPD
ARI	Assess	CP201	Inadequate assessment for ARI at clinic/OPD
	Treat	CP202	Oxygen not prescribed or given at clinic/OPD
		CP203	Bronchodilator not given to child with wheeze, in clinic/OPD
	Manage	CP204	Delayed referral for ARI from clinic/OPD
	Monitor	CP205	Oxygen saturation not monitored at clinic/OPD
DD	Assess	CP301	Severity of dehydration incorrectly assessed at clinic/OPD
	Manage	CP302	Inadequate fluid management for diarrhoeal disease with dehydration
		CP303	Delayed referral for child with severe dehydration from clinic/OPD
		CP304	Delay in referring chronic diarrhoea from clinic/OPD
	Monitor	CP305	Inadequate review of child with dehydration at clinic/OPD
Fever	Assess	CP401	Meningitis not considered in child with fever at clinic/OPD
		CP402	Malaria not considered in child with fever at clinic/OPD
	Treat	CP403	Antipyretic measures not taken at clinic/OPD
		CP404	Appropriate anti-meningitis treatment not initiated at clinic/OPD
		CP405	Appropriate anti-malarial treatment not initiated at clinic/OPD
Nutrition/ Intake	Assess	CP501	Growth not plotted correctly on RTHC
		CP502	Child's growth problem (severe malnutrition, not growing well) inadequately identified or classified
	Manage	CP503	Inadequate response to growth faltering or failure, at clinic/OPD
		CP504	Delayed referral for severe malnutrition, weight loss, or growth faltering from clinic/OPD
	Monitor	CP505	No follow up for child's nutritional problem at clinic/OPD
PSBI	Assess	CP601	Possible serious bacterial infection (PSBI) not considered at clinic/OPD
	Manage	CP602	Appropriate antibiotics not given for PSBI at clinic/OPD
HIV	Assess	CP701	No documentation of mother's antenatal HIV status
		CP702	Inadequate assessment for HIV (IMCI not used) at clinic/OPD
		CP703	No clear documentation of child's HIV status at clinic/OPD
		CP704	Inadequate response to HIV classification at clinic/OPD
	Manage	CP705	Not referred for ART from clinic/OPD, though indicated
		CP706	Referred for ART but ART not initiated
	Monitor	CP707	HIV result not obtained/documented at clinic/OPD



# Modifiable Factors

Child PIP v3.0.2



Priority Condition or Activity	Category	v3 Code	Modifiable factor
TB	Assess	CP801	Inadequate assessment for household TB contact at clinic/OPD
	Manage	CP802	No response to/delayed referral of chronic cough (>2 weeks) at clinic/OPD
		CP803	INH prophylaxis not initiated in child with household TB contact
		CP804	Child had household TB contact, but no contact tracing was done
Immunisation	Disease Prevention	CP901	Missed vaccines despite clinic/OPD attendance
Cross-cutting	Communication	CPX01	Communication problems: Staff to caregiver
		CPX02	Staff to staff communication problem at clinic or between clinic & hospital
	Assess	CPX03	Insufficient assessment for non-IMCI condition at clinic/OPD
	Manage	CPX04	Delay in referring other acute problem from clinic/OPD
Other	Other	CPO	Other clinical personnel modifiable factor at clinic/OPD (COMMENT)
<b>Clinic and Outpatient Care - Administrator</b>			
Records	Notes	CAR01	Inadequate record keeping system in clinic
Clinical methods	Policy	CAM01	Lack of standardised case management protocols in clinic/OPD
		CAM02	Inadequate IMCI implementation at clinic/OPD
Danger signs	Transport	CA101	No transport from home to clinic
		CA102	No emergency transport from clinic to hospital
	Equipment	CA103	No pulse oxymeter at clinic/OPD
		CA104	No suction at clinic/OPD
	Buildings/Beds	CA105	Lack of high care beds and/or resuscitation area in clinic/OPD
		CA106	No clinic within reach of child's home or limited opening times
	Policy	CA107	No policy on short-stay for paediatric patients at clinic/OPD
		CA108	Barriers to entry to clinic/OPD
	Laboratory	CA109	Basic laboratory investigation not available (e.g. blood glucose)
ARI	Consumables	CA201	No oxygen or oxygen delivery system at clinic/OPD
		CA202	No bronchodilators at clinic/OPD
	Equipment	CA203	No spacer or nebuliser for bronchodilators at clinic/OPD
DD	Consumables	CA301	No oral rehydration solution at clinic/OPD
		CA302	Inadequate intravenous sets or solutions at clinic/OPD (incl. intra-osseous)
PSBI	Consumables	CA601	Inadequate antibiotics at clinic (as per IMCI/EDL)
HIV	Consumables	CA701	No ART drugs available at clinic/OPD
	Laboratory	CA702	Delayed or lost laboratory results (especially HIV) at clinic/OPD
		CA703	Initiation of ART at clinic/OPD delayed due to lost or delayed laboratory investigations
	Buildings/Beds	CA704	No ART service provided at clinic/OPD
Cross-cutting	Staff	CAX01	No professional nurse at clinic/OPD
Other	Other	CAO	Other administrator modifiable factor at clinic/OPD (COMMENT)
<b>Clinic and Outpatient Care - Family or Caregiver</b>			
Records	Care Seeking & Compliance	CFR01	Caregiver did not bring RTHC and/or referral letter to clinic
Danger Signs		CF101	Caregiver refused treatment at clinic
Cross-cutting		CFX01	Did not arrive at clinic/OPD on day of referral/did not keep appointment
Other	Other	CFO	Other caregiver modifiable factor at clinic/OPD (COMMENT)



# Modifiable Factors

Child PIP v3.0.2



## Home Care

Priority Condition or Activity	Category	v3 Code	Modifiable factor
<b>Home Care - Clinical Personnel</b>			
Records	Notes	HPR01	Insufficient notes on home circumstances or child's health history
Danger signs	Disease Prevention	HP101	Caregiver not advised about danger signs at previous visit
		HPX02	Caregiver not advised about home treatment at previous visit
Nutrition/ Intake	Growth & Development	HP501	Never referred to integrated nutrition programme (INP)
HIV	Assess	HP701	Caregiver not assessed and managed for HIV&AIDS
	Disease Prevention	HP702	Sibling of child with HIV&AIDS, but never traced and assessed
TB	Disease Prevention	HP801	TB not notified
		HP802	No TB contact tracing or treatment at home
Cross-cutting	Growth & Development	HPX01	Not referred for social grant, though eligible
Other	Other	HPO	Other clinical personnel modifiable factor in home/community (COMMENT)
<b>Home Care - Administrator</b>			
Records	Notes	HAR01	Lost RTHC not replaced (facility 'policy' not to replace cards)
Danger signs	Transport	HA101	Inadequate transport from home to nearest health facility
DD	Disease Prevention	HA301	No tap water at home
		HA302	No electricity
Cross-cutting	Growth & Development	HAX01	Referred for grant (CSG, CDG, FCG) but never received
		HAX02	Primary caregiver unemployed, or no household breadwinner
		HAX03	Child came from child-headed household
	Policy	HAX05	No home/community IMCI in health subdistrict
Other	Other	HAO	Other administrator modifiable factor at home (COMMENT)
<b>Home Care - Family or Caregiver</b>			
Records	Disease Prevention	HFR01	RTHC not used or lost by caregiver
	Care Seeking & Compliance	HFR02	Caregiver unaware of child's health history
Danger signs	Care Seeking & Compliance	HF101	Caregiver did not recognise danger signs/severity of illness
		HF102	'Traditional remedy' given from traditional healer, with negative effect on child
		HF104	Caregiver delayed seeking care
	Home Treatment	HF103	Inappropriate treatment given at home with negative effect on the child, e.g. enema
Nutrition/ Intake	Growth & Development	HF501	Child not provided with adequate (quality and/or quantity) food at home
HIV	Care Seeking & Compliance	HF701	Caregiver declined HIV test for the child
Immunisation	Care Seeking & Compliance	HF901	Caregiver did not take child to clinic for vaccines as scheduled
Accidents	Home Treatment	HFA01	Child accessed poison/drug
		HFA02	Unsafe home environment (e.g. open flames)
		HFA03	No adult supervision at home
Cross-cutting	Care Seeking & Compliance	HFX01	Caregiver took child to clinic infrequently
Other	Other	HFO	Other caregiver modifiable factor at home/in community (COMMENT)

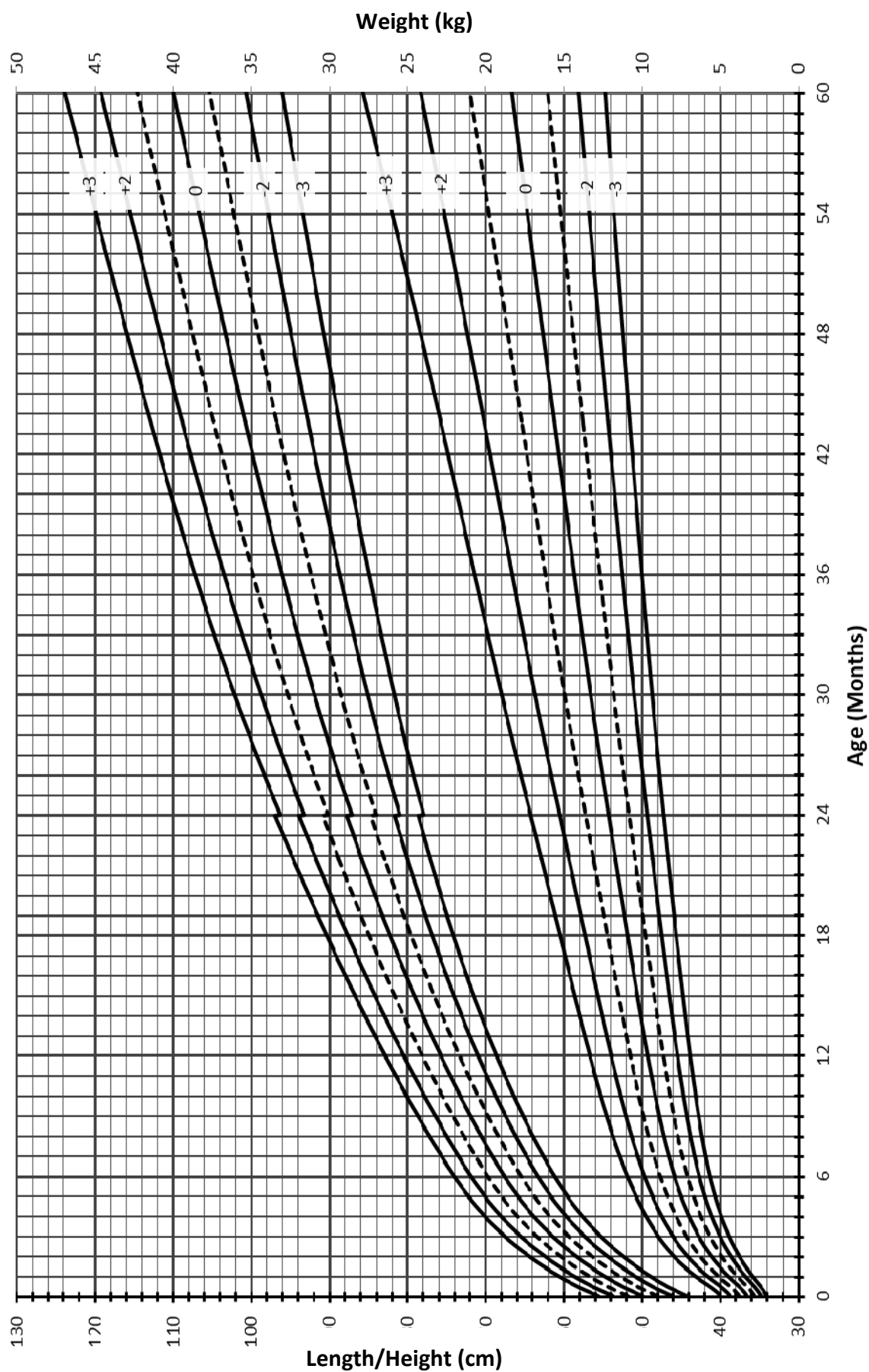


## **APPENDIX 3 – GROWTH CHARTS**

- **Boys:**
  - 0 to 5 years    Length/Height- & Weight-for-Age (z-scores)**
  - 5 to 19 years    Height-for-Age (z-scores)**
  - 5 to 10 years    Weight-for-Age (z-scores)**
  
- **Girls:**
  - 0 to 5 years    Length/Height- & Weight-for-Age (z-scores)**
  - 5 to 19 years    Height-for-Age (z-scores)**
  - 5 to 10 years    Weight-for-Age (z-scores)**

## BOYS Length/Height- & Weight-for-Age

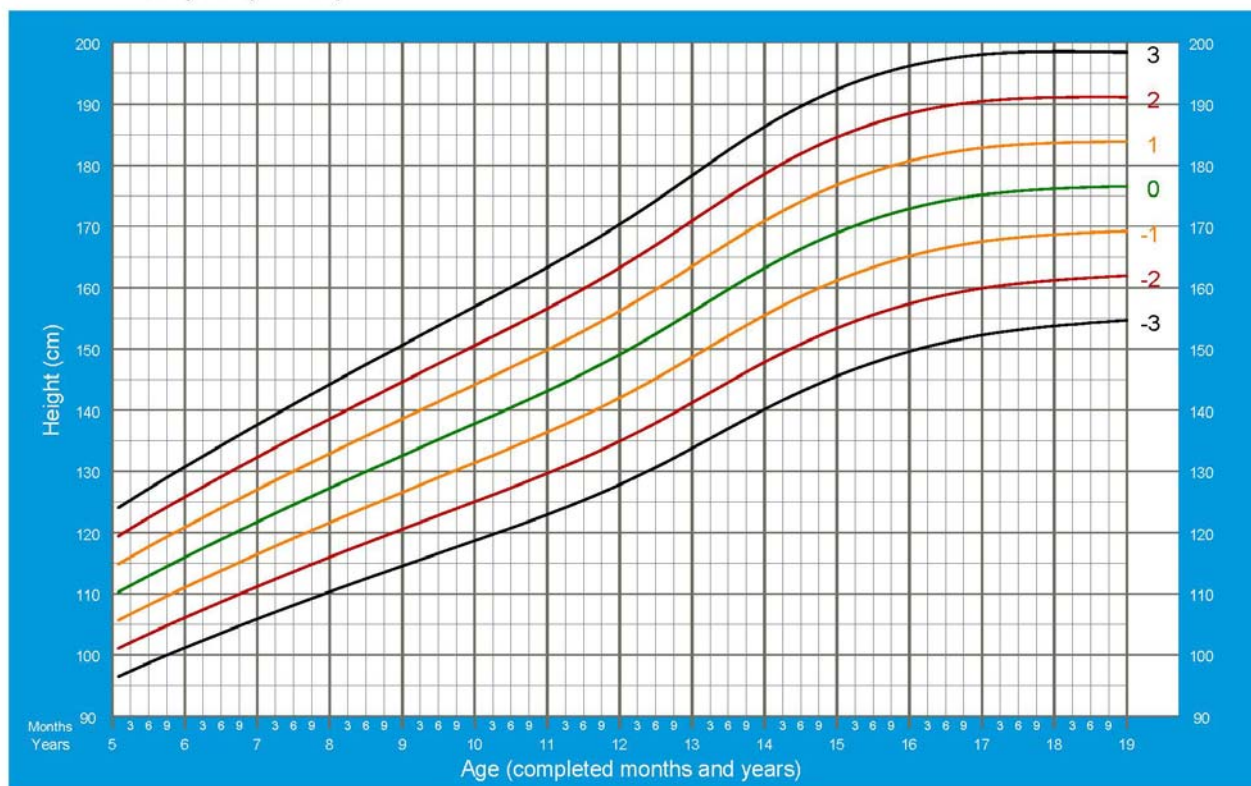
0 to 5 years (z-scores)





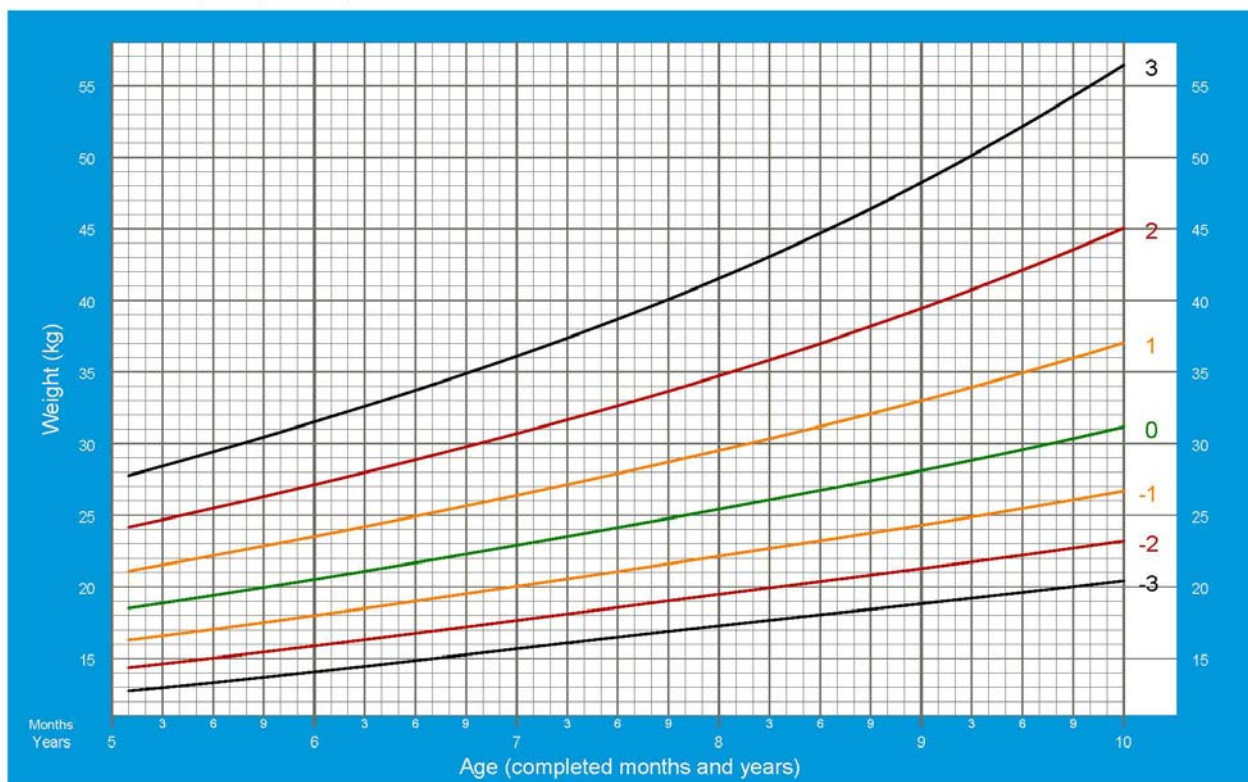


### BOYS Height-for-Age 5 to 19 years (z-scores)



2007 WHO Reference

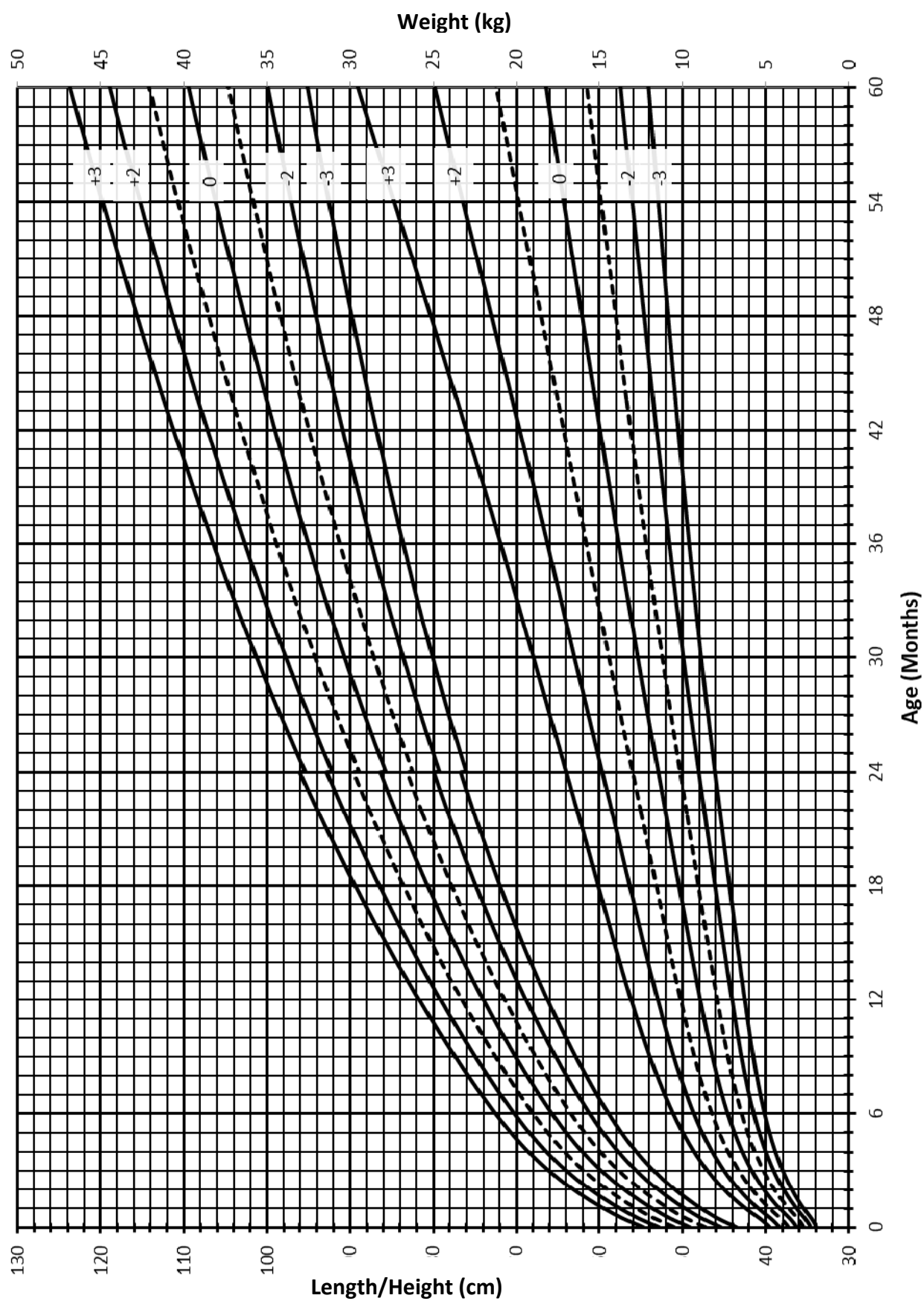
### BOYS Weight-for-Age 5 to 10 years (z-scores)



2007 WHO Reference

## GIRLS Length/Height- & Weight-for-Age

0 to 5 years (z-scores)

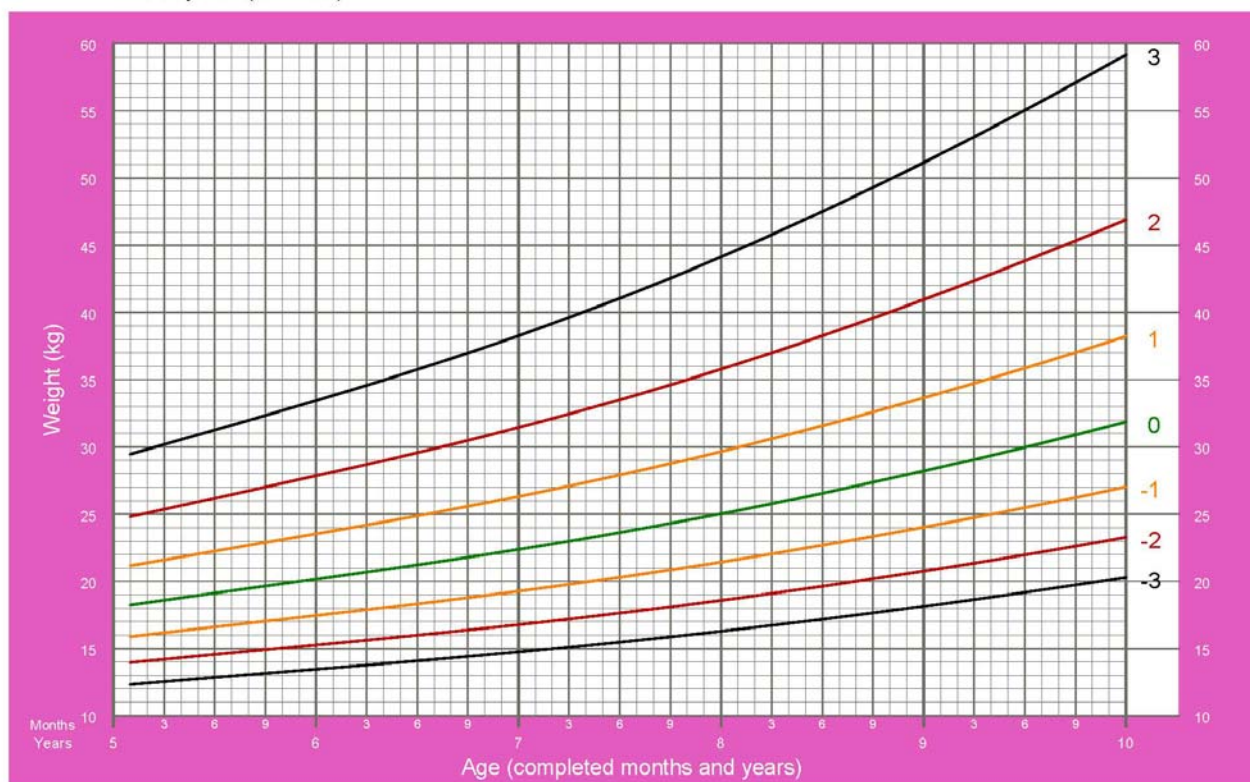




## GIRLS Height-for-Age 5 to 19 years (z-scores)



## GIRLS Weight-for-Age 5 to 10 years (z-scores)







## **APPENDIX 4 - HIV CLINICAL STAGING**

- **Revised WHO Clinical Staging of HIV/AIDS - Infants & Children**

# REVISED WHO CLINICAL STAGING OF HIV/AIDS - INFANTS & CHILDREN

NB: Interim African region version for persons under 15 years of age with confirmed laboratory evidence of HIV infection (WHO, 2005)

## Stage I

- Asymptomatic
- Persistent generalized lymphadenopathy

## Stage II

- Hepatosplenomegaly
- Papular pruritic eruptions
- Extensive human papilloma virus infection
- Extensive molluscum contagiosum
- Fungal nail infections
- Recurrent oral ulcerations
- Lineal gingival erythema (LGE)
- Parotid enlargement
- Herpes zoster
- Recurrent or chronic RTIs (otitis media, otorrhoea, sinusitis)

## Stage III

- Moderate unexplained malnutrition not adequately responding to standard therapy
- Unexplained persistent diarrhoea (14 days or more)
- Unexplained persistent fever (intermittent or constant, for longer than 1 month)
- Oral candidiasis (outside neonatal period)
- Oral hairy leukoplakia
- Acute necrotizing ulcerative gingivitis / periodontitis
- Pulmonary TB
- Tuberculous lymphadenopathy (axillary, cervical or inguinal)
- Severe recurrent presumed bacterial pneumonia
- Unexplained anaemia ( $< 8 \text{ g/dl}$ ), &/or neutropenia ( $< 0.5 \times 10^9/\text{l}$ ) &/or thrombocytopenia ( $< 50 \times 10^9/\text{l}$ ) for  $> 1$  month
- Chronic HIV-associated lung disease including bronchiectasis
- Symptomatic lymphoid interstitial pneumonitis (LIP)

## Stage IV

- Unexplained severe wasting or severe malnutrition not adequately responding to standard therapy
- Pneumocystis pneumonia
- Recurrent severe presumed bacterial infection (eg empyema, pyomyositis, bone/joint infection, meningitis, but excluding pneumonia)
- Chronic herpes simplex infection (orolabial or cutaneous of more than 1 month's duration, or visceral at any site)
- Extrapulmonary TB
- Kaposi's sarcoma
- Oesophageal candidiasis, or *Candida* of trachea, bronchi or lungs
- CNS toxoplasmosis (outside the neonatal period)
- HIV encephalopathy
- CMV infection (CMV retinitis or infection of organs other than liver, spleen or lymph nodes; onset at age of  $\geq 1$  month)
- Extrapulmonary cryptococcosis including meningitis
- Any disseminated endemic mycosis (e.g. extrapulmonary histoplasmosis, coccidiomycosis, penicilliosis)
- Cryptosporidiosis
- Isosporiasis
- Disseminated non-tuberculous mycobacterial infection
- Visceral herpes simplex infection
- Acquired HIV-associated rectal fistula
- Cerebral or B cell non-Hodgkin's lymphoma
- Progressive multifocal leukoencephalopathy (PML)
- HIV-associated cardiomyopathy or HIV-associated nephropathy



## **APPENDIX 5 – ADDITIONAL FORMS**

- **Paediatric Ward Admissions and Discharge Register**
- **Paediatric Patient Admission Sheet**

Paediatric Ward Admissions and Discharge Register

Year: \_\_\_\_\_ Month: \_\_\_\_\_ Ward: \_\_\_\_\_ Hospital: \_\_\_\_\_

No.	Surname Name Folder Number	Caregiver Name Telephone Street, Town	DoB	Age	DoA ToA	From?	Weight & Gender	Nutrition status: o/n/u/k/m/m-k	Diagnosis	DoD ToD	To?	Child PIP register y/n
Totals												

**DoB** = date of birth; **DoA** = date of admission; **ToA** = time of admission; **From?** = enter where patient came from (e.g. another ward, home, clinic, another hospital); **Nutrition status** = **o/n/u/k/m/m-k** = overweight/normal/underweight for age/kwashiorkor/marasmus/marasmic-kwashiorkor; **Dx** = admission diagnosis (enter main reason for admission but update if diagnosis changes or child dies); **DoD** = date of discharge OR death; **ToD** = time of discharge OR death; **To?** = enter where patient was discharged to (e.g. another ward, home, clinic, POPD, another hospital, died); **Child PIP register y/n** = yes/no for entry on the Child PIP death register

# Paediatric patient admission sheet (to be completed by admitting doctor after usual clerking notes)

Name:				Date of Birth:			DoA:		ToA:	
Admitted from						Admitting Doctor (print)				
Admitting to		ICU	High care	Medical	Surgical	Mixed	Receiving Doctor (print)			

## Referred

	Name of hospital/clinic:				
Y / N / U	If yes, from:	Another hospital	A clinic	Private practitioner	Unknown
	If yes, from:	Inside drainage area	Outside drainage area	Unknown	

## Social

		Caregiver Name:			Telephone:		
Mother	Alive and well	Dead	Sick	Unknown	Primary caregiver	Mother	Grandmother
Father	Alive and well	Dead	Sick	Unknown		Father	Other: _____

## Nutrition

OWFA	Normal	UWFA	Marasmus	Kwashiorkor	M-K	Unknown	Weight: _____ kg
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## HIV & AIDS

Laboratory test	Negative	Exposed	Infected	No result	Not tested (but indicated)	Not tested (not indicated)	Unknown
Clinical	Stage I	Stage II	Stage III	Stage IV	Not staged (but indicated)	Not staged (not indicated)	Unknown
Perinatal ARV	Prophylaxis given		Prophylaxis not given		Mother negative at delivery		Unknown
Feeding in 1 <sup>st</sup> 6 months	Exclusive breast for 6/12		No breast, ever		Mixed, from birth		Unknown
Cotrimoxazole	Current	Ever	Never (but indicated)	Never (not indicated)			Unknown
ART (child)	Current	Ever	Never (but indicated)	Never (not indicated)			Unknown
ART (mother)	Current	Ever	Never (but indicated)	Never (not indicated)			Unknown

## Main diagnosis/reason for admission

Illness/Condition	ICD 10

## Basis for diagnosis (tick relevant)

Previous diagnosis	Symptoms	Signs
Current Rx:		

## Reasons for admission

1. Life-threatening problems (tick applicable)

Airway	Critical	Narrow		Normal
Breathing	Needs IPPV	Needs oxygen	Hyperventilation	Normal
Circulation	Shock (cap refill>3s)	Hypovolaemia	Hypervolaemia	Normal
Consciousness (AVPU)	Unconscious	Response to Pain	Response to Voice	Alert
Convulsions	In hospital	Before arrival	Past	Never
Dehydration	10%	5%	Oedema	Normal
IMCI classification	"Red"	"Yellow"		"Green"
Infection	SIRS ("toxic shock")	Needs IV agent	Needs oral agent	No

2. Diagnostic workup (e.g. tuberculosis):

3. Social (e.g. poverty, distance, caregiver):

4. Specialist review/opinion:

5. Other:

**Priority problems / Red flags** (circle applicable)

<b>3 'T's</b>	Tiny (< 2 months); Temperature (> 38°C or < 36°C); Trauma		
<b>3 'P's</b>	Severe Pain; severe Pallor; Poisoning		
<b>3 'R's</b>	Restlessness (or irritability or lethargy), Respiratory distress; urgent Referral		
<b>'M', 'O', 'B'</b>	Malnutrition; Oedema; Burns		
<b>readmission</b>	admitted within past 28 days for the same condition		
<b>last vaccine</b>	BCG / polio / diphtheria / pertussis / HiB / HepB / measles	Given on:	
<b>hypoglycaemia</b>	blood glucose < 2.6 mmol/l	Record actual blood sugar level:	

**Significant biochemical problems** (record sats in room air FOR ALL ADMISSIONS & circle others applicable)

SpO <sub>2</sub> in RA:	pH < 7.2	K <sup>+</sup> < 2.0	K <sup>+</sup> > 6	Na <sup>+</sup> < 120	Na <sup>+</sup> > 150	Albumin < 20
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**Urgent management**

	Specific Rx	Other Rx
<b>Airway</b>	ETT:	Bag/Mechanical IPPV:
<b>Breathing</b>	Oxygen:	Continue on way to ward:
<b>Circulation/Shock</b>	Volume expand:	Continue on way to ward:
<b>Dehydration</b>	Rehydrate:	Check Na <sup>+</sup> :
<b>Consciousness</b>	Protect airway:	Coma position:
<b>Infection</b>	IV antibiotic stat:	Steroid/antipyretic:

**Initial investigations** (tick for "done", circle for "to do")

<b>Chemistry</b>	acid-base	renal FT's	liver FT's	blood glucose	urine Na <sup>+</sup> , K <sup>+</sup>	Urine protein:creatinine
<b>Haematology</b>	FBC	diff	INR/PTT	retics	smear	factor VIII/IX
<b>Microbiology</b>	blood culture	CSF	urine dipstix	urine MC&S	stool MC&S	syphilis
<b>Radiology</b>	chest X-ray	abdo X-ray	CT Brain	MRI	U/S	Echo
<b>TB</b>	skin test	CSF	sputum AFB's	GW AFB's	<b>Started TB R<sub>x</sub>:</b>	yyyy/mm/dd
<b>HIV</b>	rapid	ELISA	PCR	CD <sub>4</sub>	<b>Started ART:</b>	yyyy/mm/dd
<b>Other Virus:</b>			<b>Toxins/Drugs</b>			

**Parameters for monitoring on arrival in ward** (circle "to do")

<b>Nurse</b>	Temperature	Respiratory rate	Sats/O <sub>2</sub> requirement	Respiratory pattern	Heart rate	Blood pressure	Glucose
	Weight	Urine volume	Stools	<b>Other:</b>			
<b>Doctor</b>	Perfusion	Acid-base	Urea, creatinine	Serum Na <sup>+</sup> , K <sup>+</sup>	Hydration		

**Problem list and plans**

#1:	#4:
Plan:	Plan:
#2:	#5:
Plan:	Plan:
#3:	#6:
Plan:	Plan:

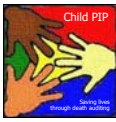
**Pain Assessment**

No pain	Mild pain	Moderate pain	Severe pain
<b>Analgesia plan:</b>			

Sign: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_



Child Healthcare Problem Identification Programme

# TRAINING AND REFERENCE MANUAL

Child PIP v3.1

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