

Data Collection

in preparation for
implementation



health

Department:
Health
REPUBLIC OF SOUTH AFRICA

Data collection process



DATA COLLECTION



FACILITY WALK
THROUGH



FACILITY DATA
COLLECTION



WAITING
TIME SURVEY



HUMAN RESOURCE
TRAINING AUDIT

Data collection process



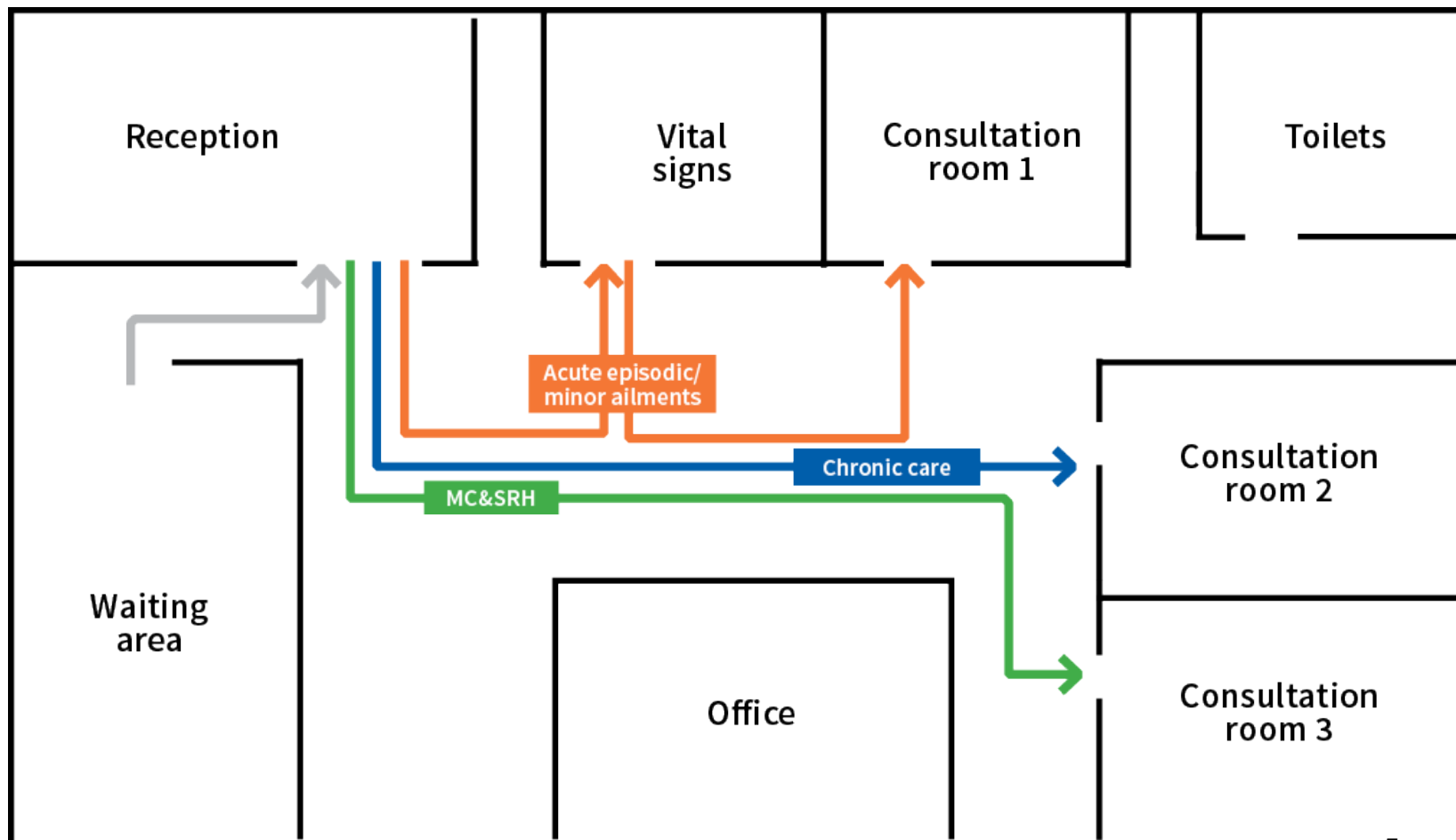
- It is important to understand how patients navigate through the care delivery system.
- The best way to achieve this is through process mapping. A process flow allows you to:
 - **Understand** what happens to the patient, where it happens and who is involved
 - **Examine** the process map to determine where there are problems (*analysis*)

Mapping out the facility

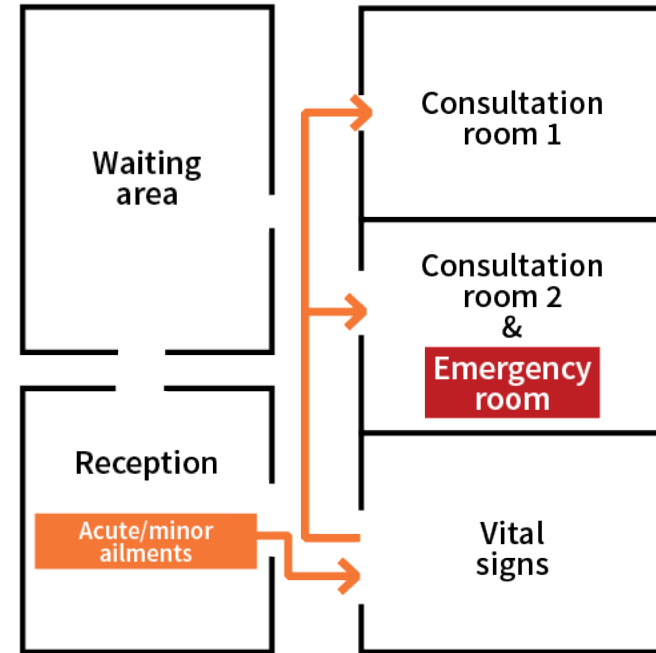
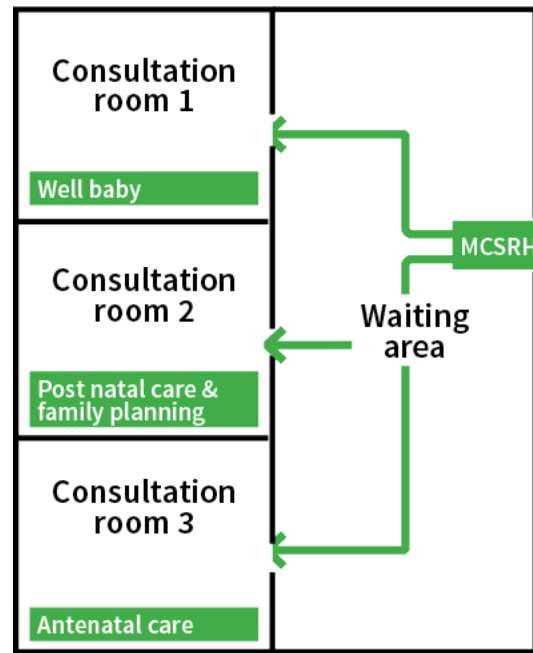
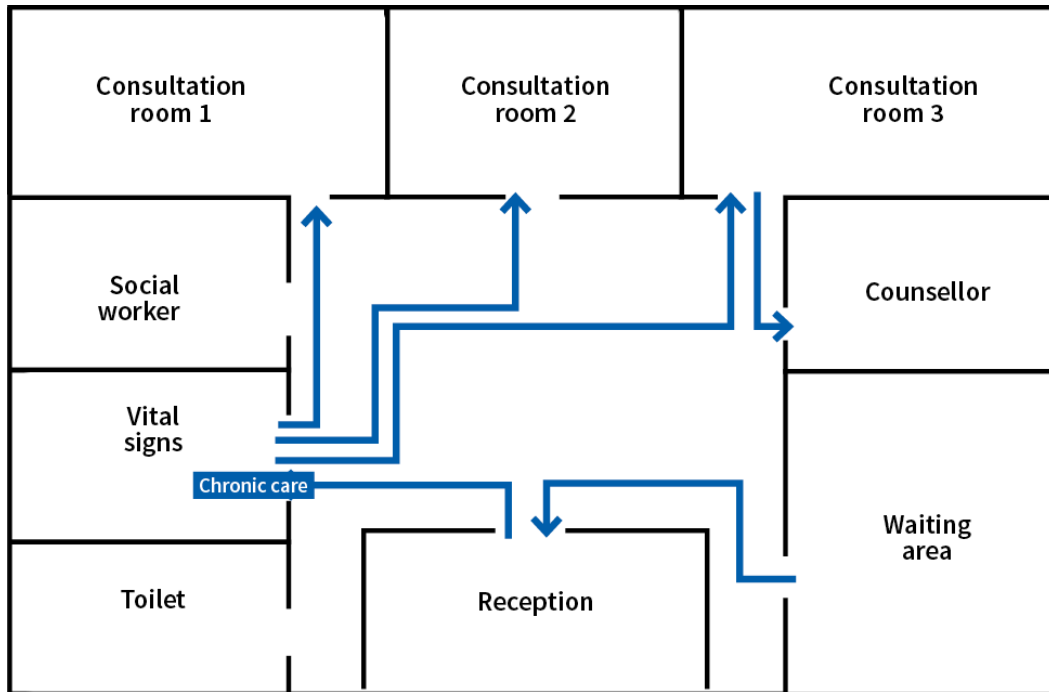


- The facility manager/ICRM champion or a designated member of the ICRM team should **sketch out the layout of the facility**
- This sketch should indicate entrances, exits, toilets, waiting areas and all service delivery areas available in the facility
 - The sketch should also be **labelled to depict which service is offered** in the respective consulting rooms
 - Does not have to be exact or to scale

Mapping sketch plan of a single building facility



Sketch plan of multiple building facility



Facility walk through



- The ICRM team should plan a **facility walk through**
- The walk through does not need to be done on a **single day** but can be done per service.
- The walk through needs to be done from a **patient's perspective** and should start from point of entry of the patient to the exit (main security gate)

As you walk through the facility address the following points

- Identify points of entry and exit
- Identify each step of the process
- Describe the activities of the process
 - *What is the nature of the service?*
 - *Is all services provided or patients referred or transferred?*
 - *Who provides the service?*
 - *Determine availability of equipment*
 - *Identify infection control practices*
 - *Medication storage and stock order levels*
- Identify possible areas of challenges from both patients and providers perspective
- Identify potential areas of waste

Facility walk through

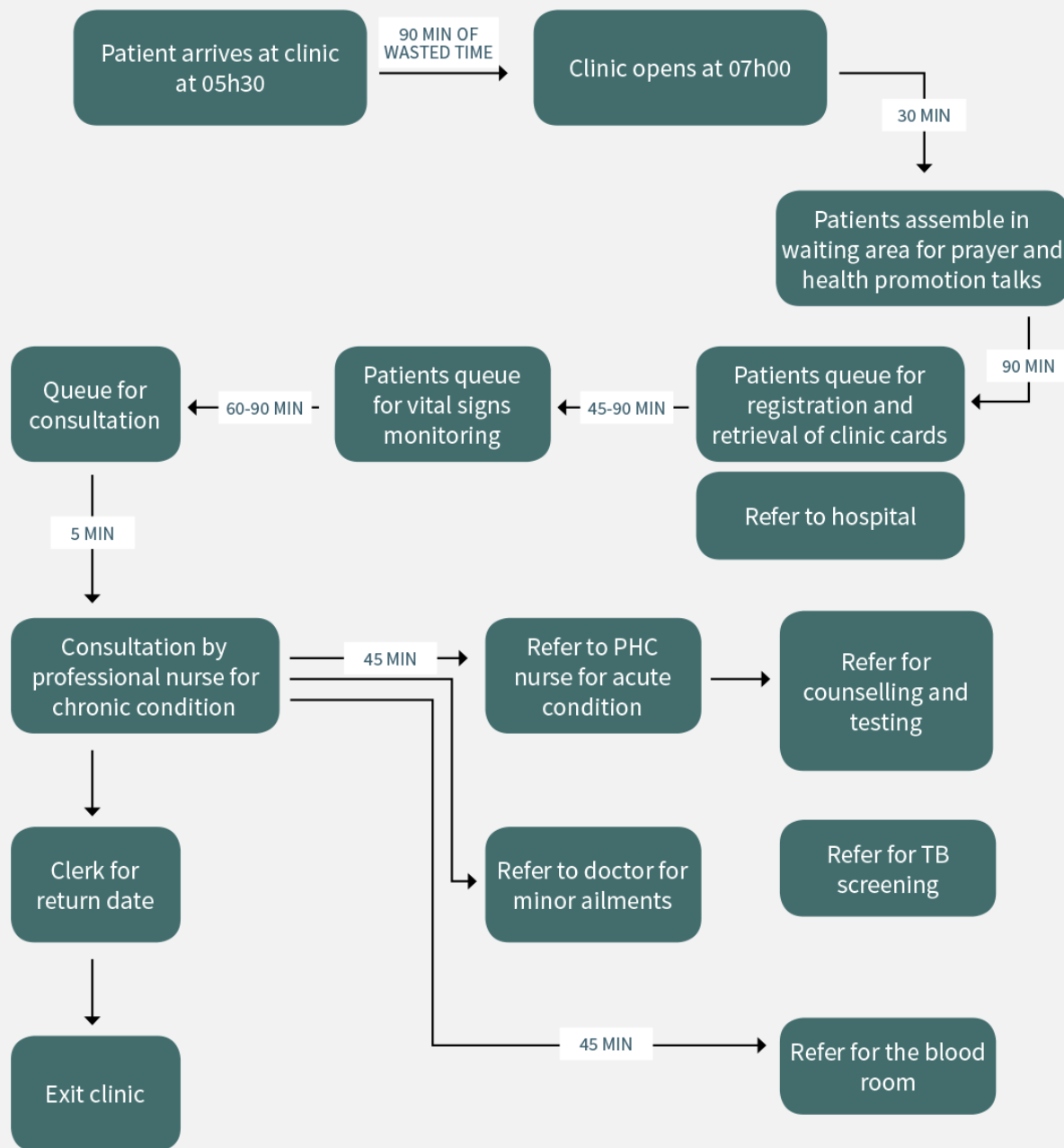


- **Map the patient's journey** for each service package category from start to finish
- **Map what actually happens** in the current process rather than what you would like to be happening, or what should be happening according to the book
- Start with a **high level process map**



Current patient process flow and waiting times

EXAMPLE OF CURRENT PATIENT PROCESS FLOW AND WAITING TIMES (PRIOR TO ICSM RE-ORGANISATION)



Waiting time survey



- Patient waiting time is **'the time that the patient spends waiting for service/s in a facility'** per visit and is calculated from **the time the patient enters the facility** (taking into consideration the official opening time of a facility) **to the time the patient leaves the facility**
- To obtain a baseline measurement of the median **total waiting time** that patients spend in the clinic across all conditions

Waiting time survey



- To be conducted prior to implementation if **waiting time** not conducted in last quarter or not in line with the national policy
- The **patient waiting time tool** for monitoring outpatient visits should be utilised in order to **measure the patient waiting** and **service times**
- The tool must be **attached to the patient's file**
- Staff members at every service area must **record time of the commencement of service** and exit in the respective areas as outlined

Waiting time survey



- Waiting time must be **monitored** quarterly
- **Select a day in the month** of the quarter in which the waiting time will be monitored (*pre-determined for specific clinic*)
e.g. Second Monday of the month.
- Select the **first 100 patients** attending the facility, irrespective of diagnosis, on the day that the quarterly waiting time survey will be conducted
- In small clinics continue the survey over **2 to 3 days** until 100 patients have been surveyed

Do not
select the
least busy
day of a
week!



Waiting time survey tool



Acute		Chronic				Mother and Child		
Minor Ailments	Children (IMCI)	HIV	TB	NCD	Mental health	Well-baby/ EPI	Family planning	ANC /PNC
	Adult							
24 hour Emergency Unit	24 hour MOU							

Area	Enter time			
Time patient enters clinic ¹	Hours		Minutes	
Time patient registers at reception desk	Hours		Minutes	
Time patient is allocated patient record	Hours		Minutes	
Time patient completes vital signs	Hours		Minutes	
	Start time		End time	
1 st consultation	Hours	Minutes	Hours	Minutes
2 nd consultation (² if referred)	Hours	Minutes	Hours	Minutes
3 rd consultation (if referred)	Hours	Minutes	Hours	Minutes
The Pharmacy (if applicable)	Hours	Minutes	Hours	Minutes
Time patient departs clinic ³	Hours		Minutes	

- When the patient enters the door of the facility, the queue marshal (or designated staff member) should **record the time**
- If referred from doctor or nurse** to lay counsellor or allied health services (rehab, social worker, nutritionist, etc)
- The **last point of contact** with service provision

Data Collection



In order to match the services and further analyse the process flow, **the following data for the past 3 months should be extracted** from the registers or obtained from the facility information officer



Data collection

DATA ELEMENT	MONTH 1	MONTH 2	MONTH 3	TOTAL FOR 3 MONTHS	AVERAGE PER MONTH	AVERAGE PER DAY
Total headcount						
< 5 years						
> 5 years						
Acute Services						
Emergencies						
Minor ailments (Adults)						
Children (IMCI)						
Chronic Services						
HIV Pre-ART						
HIV on ART						
HIV stable						
TB initiation phase (1st 2 months)						
TB maintenance						
NCD						
Hypertension						
Diabetes						
Epilepsy						
Asthma/COPD						
Mental Health						
Other						
Preventive and Promotive Services						
ANC 1st booking						
ANC subsequent visits						
Well baby						
Immunisation						
Family planning						
Male medical circumcision						
MOU						
Deliveries						
Health support services						
Occupational therapist						
Physiotherapist						
Speech and audiology						
Nutrition						
Social Services						
Eye Health						

Data collection



Preventive/promotive services	Month 1	Month 2	Month 3	Total for 3 months	Average of 3 months	Average/day
ANC first booking						
ANC subsequent visits						
Well-baby						
Immunisation						
Family planning						
Male medical circumcision						
MOU						
Deliveries						
Health support services	Month 1	Month 2	Month 3	Total for 3 months	Average of 3 months	Average/day
Occupational therapist						
Physiotherapist						
Speech and audiology						
Nutrition						
Social Services						
Eye Health						
Oral Health						

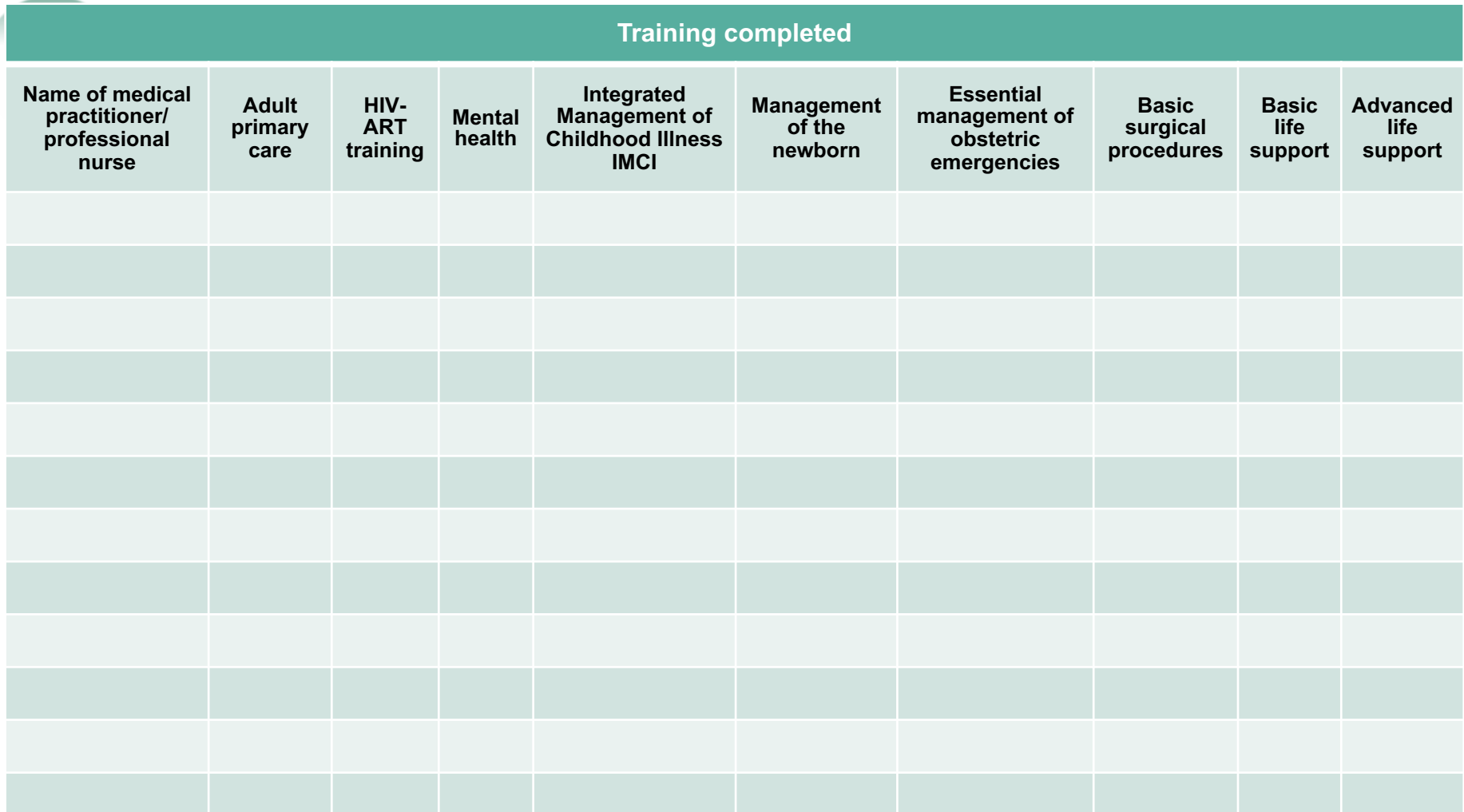
Human resource audit



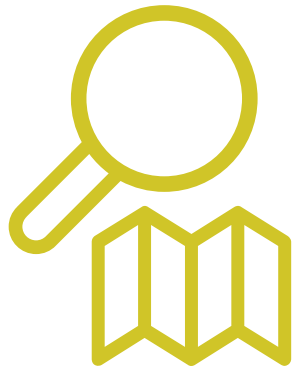
Obtain the following information from the **operational manager** or **human resource managers** at the district

Category of staff	Number employed full time	Number employed Sessional work	If sessional- no of hours per week
Medical Practitioner – includes Medical officers, Community Service Dr and general practitioners			
Operational manager			
Professional nurses			
Advanced mid-wife's			
Enrolled/Staff nurses			
Enrolled nursing assistants			
Pharmacist			
Pharmacy assistants			
Health Promoters			
Counsellors- VCT & Adherence counsellors			
TB tracers			
Admin clerks			
Facility information officer			
Physiotherapist			
Occupational therapist			
Speech and Audiologist			
Dietician			
Nutrition Advisor			
Optometrist			





Data analysis process



DATA ANALYSIS



NUMBER OF PATIENTS
TO BE BOOKED DAILY



NUMBER OF
CONSULTATION
ROOMS PER STREAM



PROCESS FLOW



HUMAN RESOURCE
TRAINING
REQUIREMENTS



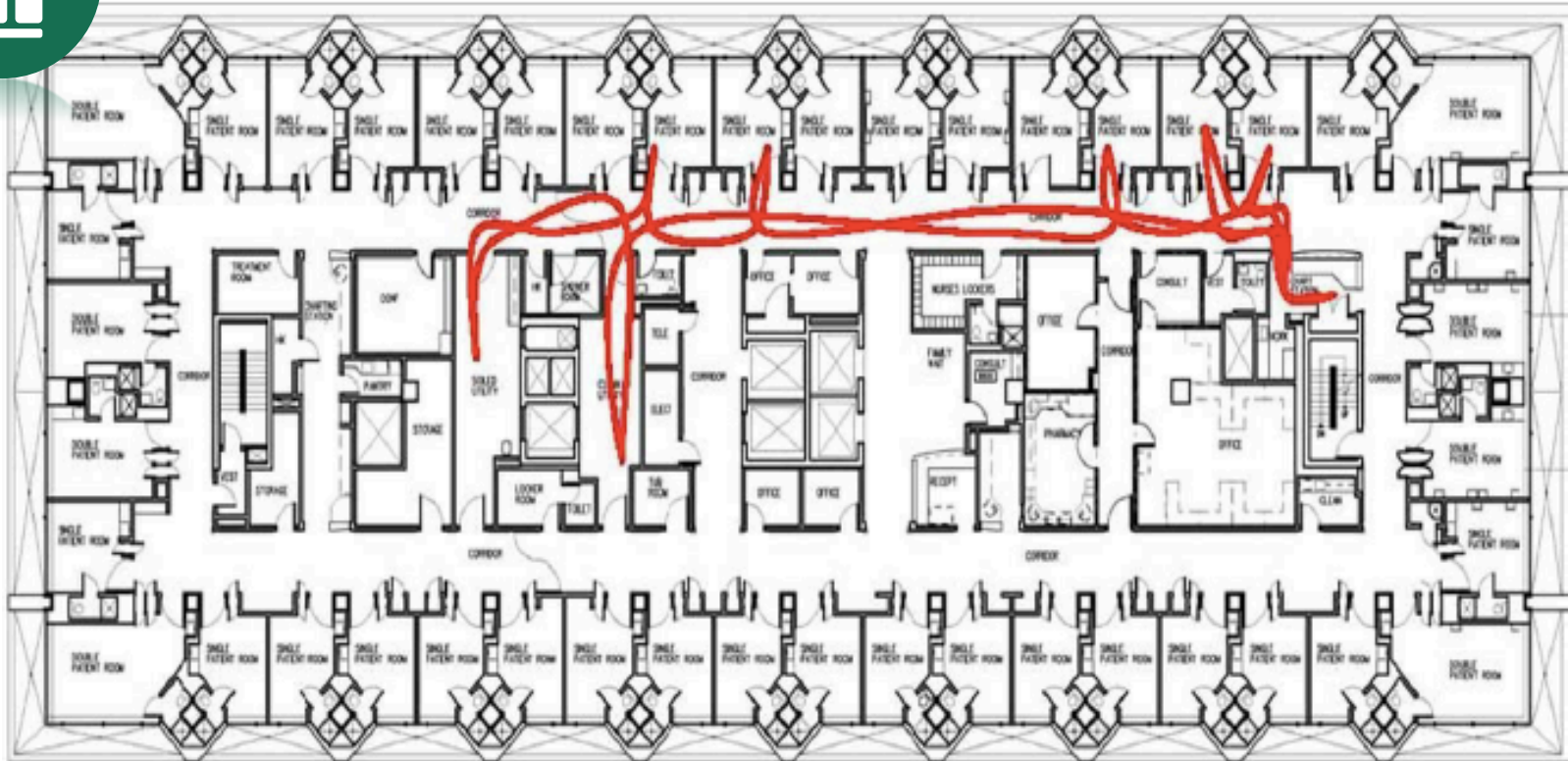
MANAGEMENT OF
PATIENT RECORDS

Process flow analysis



- Use your facility sketch plan and the current process flow map to analyse the **current patient flow**
- Draw the lines representing the flow of the patients for a service from the various streams
- At most facilities it will resemble a **spaghetti map**

Spaghetti map



Analyse the processes at the facility to **identify potential sources of waste** that affect the patient's experience

Potential areas of unnecessary waste



Source of waste	Definition	
Defect	All the errors that compromise quality, safety, cost and staff time	Repeated checking and medication errors
Over production	Doing too much, too soon or 'just in case'	Results sent in both electronic and paper formats
Waiting	Time	When there is an imbalance of process steps, which all take different timings or the batch sizes are different in each process step
Under utilised people	Not using appropriate skills for relevant task	Highly skilled staff undertaking duties that do not reflect their skills
Transportation	Movement	Unnecessary movement of items and materials
Inventory	Work in progress and stock	Overstocked medication
Motion	Unnecessary movement by people	Poor layout of wards/surgeries/departments
Excess processing	Things we do that don't add any value to the process producing excess	Duplicate data entry

Determining projected workload



For each of the services listed in the **facility data collection tool**:

- Add the total of column 1, 2 and 3 to obtain a total for 3 months
- Obtain the **average number of patients consulted per month** by dividing the total number for each condition by 3

Five day 8-hour clinic (Monday-Friday)



- A **20-working-day cycle** will be used to determine the number of patients to be consulted to cater for pension days, public holidays as well as weekends.
- The booking is determined on a Monday - Friday
- **Determine the number of patients** to be consulted per diagnostic condition by taking the average and **dividing it by 20**.
- This will then provide the **workload per day** and projected number of patients to be scheduled
- For **Health Support Services** it is likely that this is an outreach service and possible five consultation days for the month

Extended hours service - 6 days a week (Mon to Fri: 07h00-19h00 & Sat: 07h00-13h00)



- A **22-working-day cycle** will be used to determine the number of patients to be consulted to cater for pension days, public holidays as well as weekends.
- **Determine the number of patients** to be consulted per diagnostic condition by taking the average and **dividing it by 22**.
- This will then provide the **workload per day** and projected number of patients to be scheduled
- For **Health Support Services** it is likely that this is an outreach service and possible five consultation days for the month and no weekend services

Twenty four hour emergency services/ Maternity Unit and extended hour services for non-emergencies



- A **24-working-day cycle** will be used to determine the number of patients to be consulted to cater for pension days, public holidays as well as weekends
- **Determine the number of patients** to be consulted per diagnostic condition by taking the average and **dividing it by 24**
- This will then provide the **workload per day** and projected number of patients to be scheduled
- For **Health Support Services** it is likely that this is an outreach service and possible five consultation days for the month and no weekend services



Example

Data Element	Month 1	Month 2	Month 3	Total for 3 months	Average per month	Average per day
Total headcount	9360	10002	10168	30069	11009	550,45
< 5 years	1500	2250	1650	5400	1800	90
> 5 years	6500	7250	7100	20850	6950	348
Acute Services	3150	3230	3050	9430	3143	157
Emergencies	300	180	225	705	235	12
Minor ailments (A	2350	2650	2200	7200	2400	120
Children (IMCI)	500	400	625	1525	508	25
Chronic Services	5900	6455	6740	19095	6365	318
HIV Pre-ART	600	700	750	2050	683	34
HIV on ART (new and not yet stable)	350	350	350	1050	350	18
HIV stable	1600	1800	2000	5400	1800	90
TB initiation phase (1st 2 months)	175	190	210	575	192	10
TB maintenance	300	320	320	940	313	16
NCD				0	0	0
Hypertension	1800	2000	2000	5800	1933	97
Diabetes	750	750	750	2250	750	38
Epilepsy	50	50	50	150	50	3
Asthma/COPD	140	150	155	445	148	7
Mental Health	80	90	100	270	90	5
Other	55	55	55	165	55	3



Example



Data element	Average per day
Total headcount	550
Acute episodic care/minor ailments	157
Emergencies	12
Chronic care services	318
Preventive/promotive (MC&SRH) services	50
Health support services	25

The hypothetical example above indicates that this facility on average consults about **550 patients per day**.

Number of consultation rooms



- Using the nature of services and the facility infrastructure you will match **number of consultation rooms** to the services.
- Although, it will be ideal to use a **ratio of 35 patients to 1 consultation room**, this will not always be possible.
- Using the above hypothetical example and the ratio of 1: 35 patients we will require a total of **16 consultation rooms**
- However, certain services require their own consulting rooms and therefore a total of **16 consultation rooms are required**

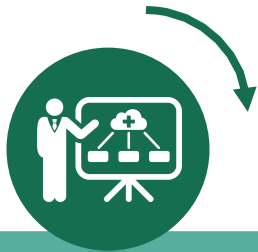
Consultation rooms and service providers



	Number to be scheduled daily	Number of Consulting Rooms to be allocated	Number of Service Providers to be allocated
Acute episodic care/minor ailments	157	4	4
Emergencies	318	9	9
Chronic care services	50	1	1
Preventive/promotive (MC&SRH) services	25	Individualised	Individualised
Total headcount	550	16	16

- **Using the sketch map** - allocate consulting rooms to the various services and consider the implications
- Obtain **input from staff** and **develop a consensus**

Human resource training needs



Training gap

Nature of training	Medical practitioner/doctors	Professional nurses	Staff nurses
Adult primary care (APC/PC101)			
HIV-ART training			
Mental health			
Integrated management of childhood illness (IMCI)			
Management of the newborn			
Essential management of obstetric emergencies			
Basic surgical procedures			
Basic life support			
Advanced life support			

Group tasks



Using your own data and the operating hours of your facility:

Determine the number of patients per category of service that are required to be scheduled daily:

- **Minor ailments** - adults and sick children (IMCI)
- **Chronic care services** - NCDs, HIV, TB
- **Maternal services** - ANC follow-up visits and well-baby (post natal care)
- **Children** - immunisation and growth monitoring
- **Family planning**
- **Health Support Services**
- **Other services**

Group tasks



Using the calculated patient numbers:

- Match the services with the available consulting rooms
- Decide on an appropriate **patient flow**



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