

The challenge of diagnosing and treating patients with TB and TB/HIV at a regional/district hospital in an area with a high HIV prevalence

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Purpose of the Study

The purpose of the study was to identify and understand the health system constraints to providing effective care to patients with tuberculosis (TB) in a combined regional/district hospital and three of its feeder clinics in KwaZulu-Natal.



Aim

- **To determine the gap between the care recommended by the national TB guidelines for patients with TB and the care which is received by patients at a combined regional/district hospital and clinic level.**
- **To explore reasons for this gap and to identify factors which facilitate and/or constrain the ability of the hospital and clinics to provide the care outlined in the national guidelines.**



Aim

- **To identify factors which will need to be overcome for the national TB guidelines to be effectively implemented.**
- **To determine the potential for leakages from the system and to quantify these leakages where possible.**



Study Design

A multi-faceted retrospective descriptive case study designed to provide information about the diagnosis and treatment of patients with TB or TB/HIV at a regional/district hospital and three of its feeder clinics.



Study Objectives and Methods

Participant observation and key informant interviews:

- To review implementation of the SA NTCP at a regional/district hospital and to identify the potential for leakages from the system.

Self-administered structured questionnaires:

- To assess doctors' knowledge of the NTCP and consider how this might lead to leakages from the system. (n = 65)
- To assess nurses knowledge of the NTCP and consider how this might lead to leakages from the system. (n = 41)

Semi-structured interviews:

- To explore the experiences of patients on TB treatment (n= 92)
- To explore the experiences of patients who interrupted TB treatment (n = 27)



Study Objectives and Methods

Retrospective record review:

- **TB and Laboratory registers:** To examine the process of laboratory diagnosis of pulmonary TB (PTB) and extrapulmonary TB (ETB) to identify the potential for leakages and quantify them where possible.
- **Medical record review:** To review the hospital records in a sample of hospital patients to assess the implementation of the NTCP. (n = 77)
- **Hospital and clinic TB registers:** To review the implementation of the NTCP at clinic level and determine leakages from the system both when receiving and holding patients.

Focus Group Discussion:

To explore experiences of community support for patients with TB



Limitations

- **A case study conducted in 1 hospital – not representative of all hospitals;**
- **Looked at many components – not extremely rigorous for any one of the components;**
- **No common patient identifier;**
- **Missing context of TB within the sub-district.**



Findings:

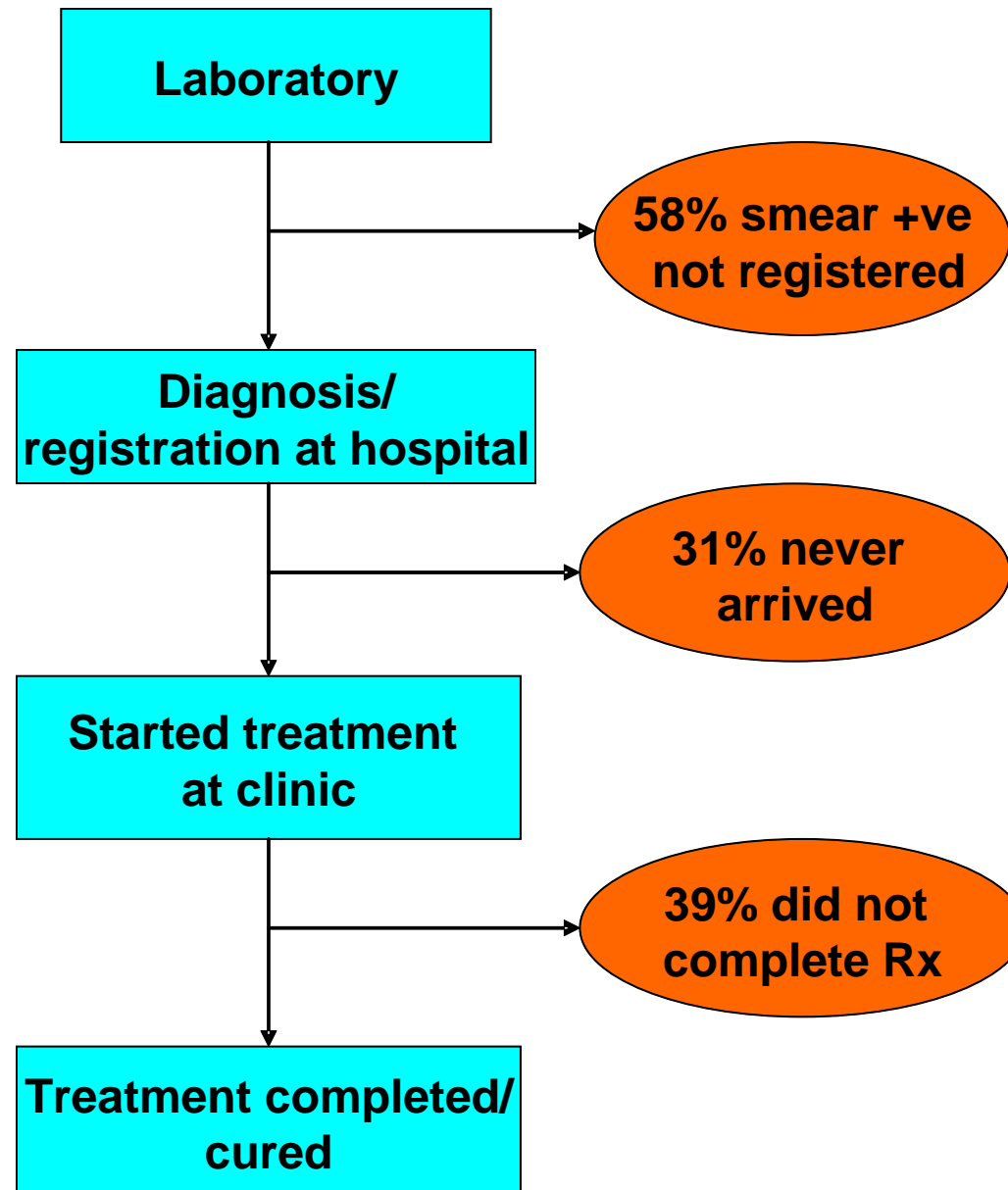
Leakages from the NTCP

Three major leakages identified during the patients' journey from diagnosis to completing treatment:

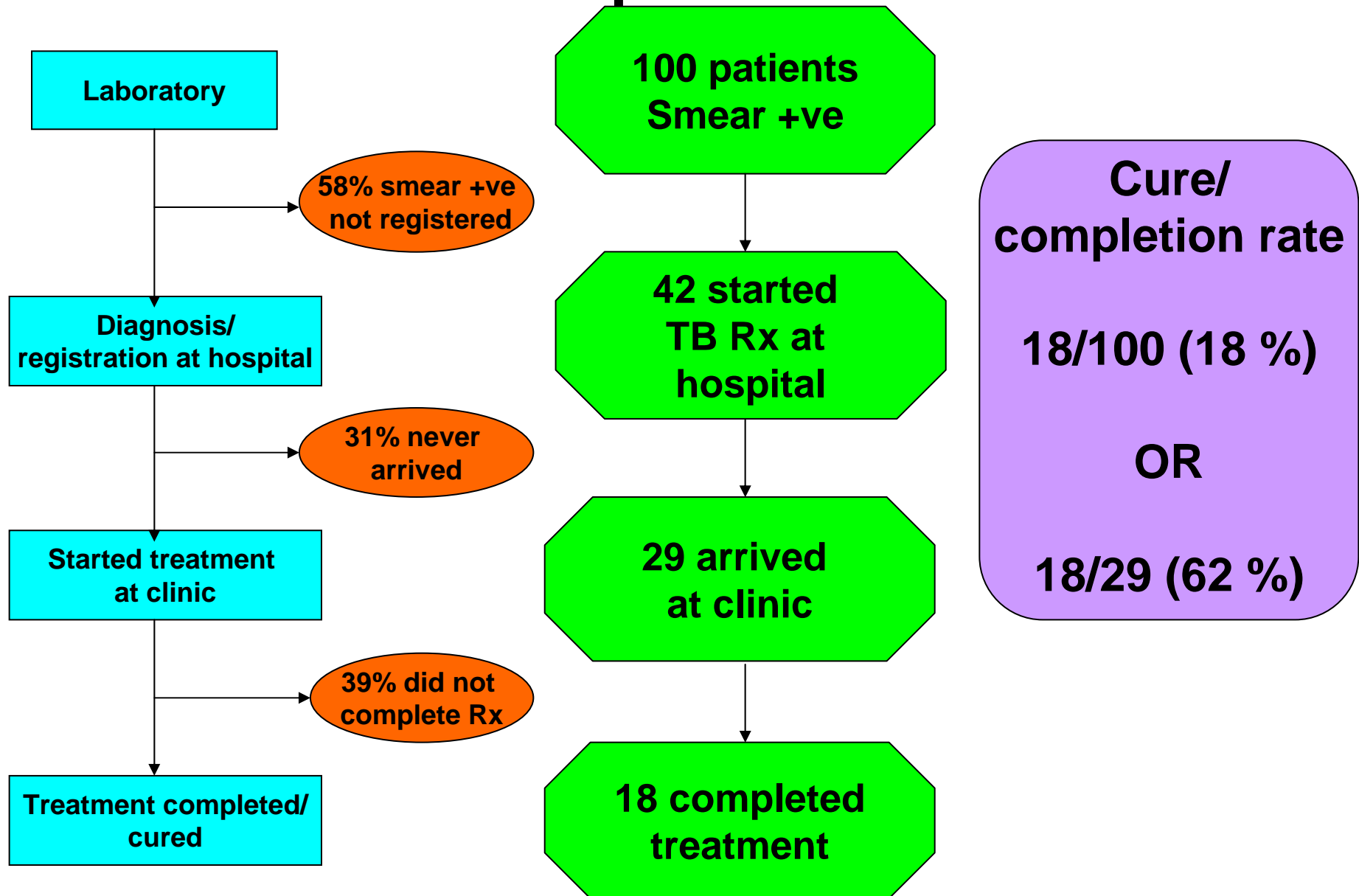
1. Between the laboratory support services, and clinicians in the wards and MOPD,
2. Between the hospital and clinic,
3. During treatment.



Losses in the diagnosis of smear positive PTB



Quantifying leakages in the diagnosis of smear positive TB



**1 April – 30 September 2005: Retrospective record review:
Laboratory and TB registers:**

Leakage of ETB patients between laboratory and TB services

Type of TB	Lab ETB patients	Patients in TB register	Leakage
TB pleura	233	197	36 (15%)
TBM	108	63	45 (42%)
Lymph nodes	48	45	3 (6%)
TB other organs	Unable to determine as only ascitic fluid counted.		
Total	389	305	84 (22%)

Investigation and diagnosis of TB

1. **Impact of the HIV epidemic;**
2. **Role of doctors;**
3. **Ward system for specimen investigation not functioning optimally;**
4. **Interface between the laboratory and wards not operational;**



Impact of the HIV epidemic

Huge impact:

Record review: 92% of those whose HIV status was known were HIV positive.

Diagnosis:

TB more difficult to diagnose as HIV increases the number of patients presenting with ETB and smear-negative TB.

Drug resistance:

Increasing drug resistance: MDR-TB present in 11% of sputum cultures sent off from study hospital.

Patient behaviour: - addressed in the section under patients



Role of doctors

- **2/3s doctors often worked with TB**

BUT:

- **Many doctors appear to be trained in clinical aspects of TB and have limited knowledge of epidemiology and the principles of the NTCP;**
- **Doctors do not adhere to NTCP guidelines and protocols.**

(Methodology: Doctors questionnaire, key informant interviews)



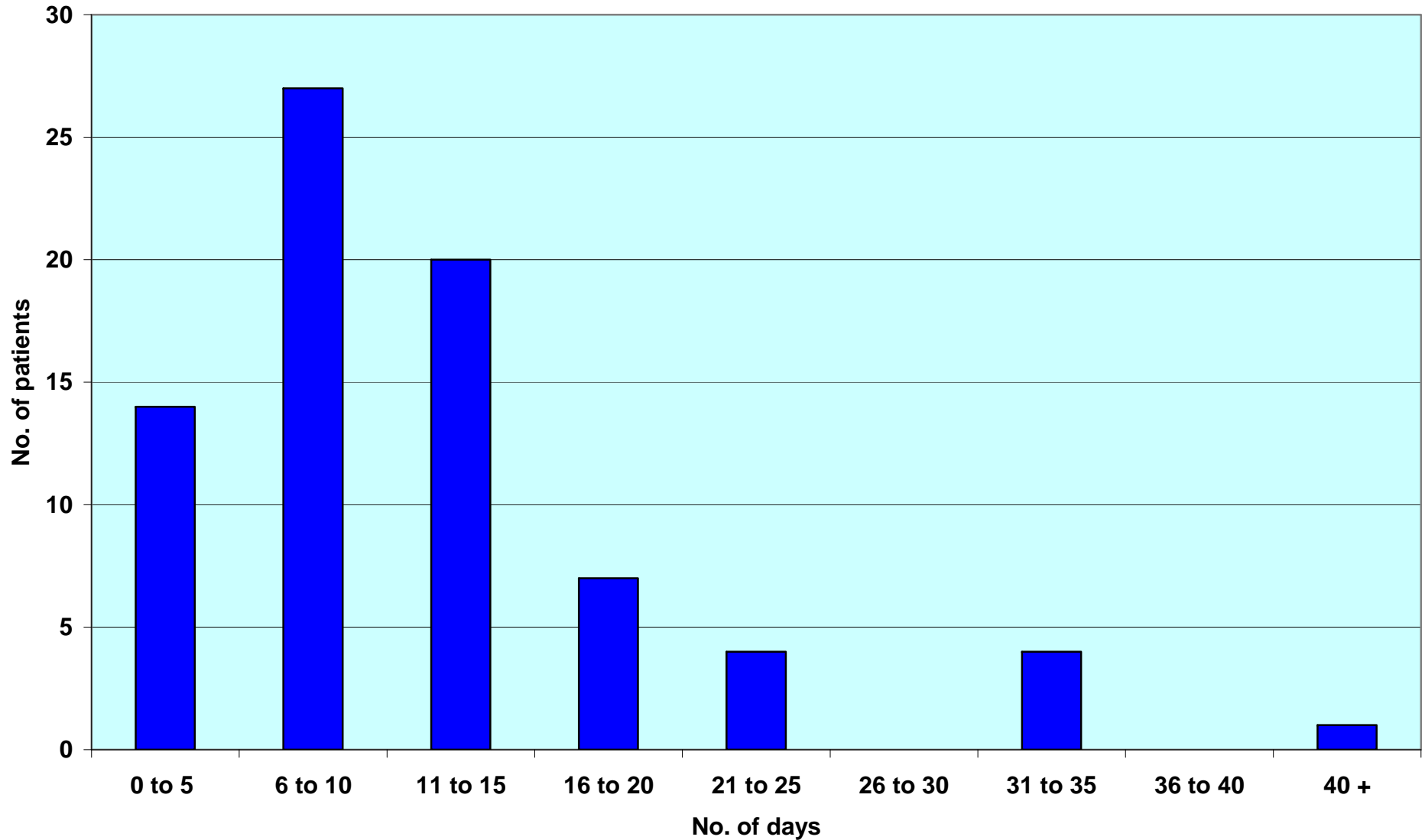
Doctors' role: Impact on PTB diagnosis

- **PTB diagnosed in the absence of positive smear microscopy** (22% PTB diagnosed had a + ve smear);
- **Reliance on chest x-rays for diagnosis (45%);**
- **TB diagnosed in the absence of a documented clinical history suggestive of TB** (In 49% of the records reviewed no mention of night sweats/fever, in 1 record history of TB contact);
- **Sputum culture not used** (In 1/77 records reviewed was a specimen sent for culture.

(Methodology: Record Review)



1 April – 30 September 2005: Medical Record Reviews: Length of hospital stay in 5 day intervals



Doctors' role: Impact on ETB diagnosis

- **A third of the ETB was diagnosed in the absence of appropriate investigations;**
(CSF: 1499 specimens for AFB microscopy: 0.3% + ve
Lymph node biopsies : 94 specimens for cytology: 50 arrived after 3 – 5 days and could not be analysed.
- **Sputum microscopy was done simultaneously in only 7% of ETB to exclude PTB,**
- **ETB diagnosed in the absence of a documented clinical history suggestive of TB**

(Methodology: Record Review)



Ward systems for sputum investigation not functioning optimally

In 1/3 records reviewed sputum microscopy was ordered, but no results were documented. Four possible reasons:

- Sputum specimens not collected as ordered by doctors.
- Patient unable to produce sputum.
- No systematic system to link returning results to patient records.
- TB cultures not ordered at appropriate times.

(Methodology: Record Review and key informant interviews)



Interface between laboratory and wards/MOPD

- “Transport system” between wards/MOPD and laboratory not functioning optimally.
- No specimen or suspect register in wards/ MOPD - no monitoring possible.
- TAT up to a week.

(Methodology: Record review and key informant interviews)



1 April – 30 September 2005: Retrospective record review:

Uncollected laboratory results from MOPD

47 uncollected AFB results: half positive

37 uncollected DST results: 10 showing resistance to TB drugs

4 MDR-TB

Specimen	No. specimens	No. drugs resistant to	Type of drugs
Sputum	2	1	INH
	3	3	INH, R, S
	1	4	INH, R, S, E
CSF	1	3	INH, R, S
Pus	1	1	INH
	1	3	INH, R, E
Fluid	2	1	INH
Total	10		

Patient's experiences: Patients DID know

- **TB/HIV**
 - “I have TB and HIV.”
 - “HIV increases the chance of getting TB.”
 - “HIV causes TB.”
- **TB curable (92%)**
- **TB managed at a clinic level (92%)**
- **TB infectious (82%)**
- **Taking medication cured TB (90%)**
- **Treatment must be finished (90%)**



(Methodology: Patient interview)

Patients did not know

- Length of TB treatment;
- Contact tracing.

(Methodology: Patient interview)



Health seeking behaviour

- **Home remedies**

Half patients took a home remedy before TB diagnosed.
Only 8% took home remedies after they knew they had TB.

- **Traditional healers**

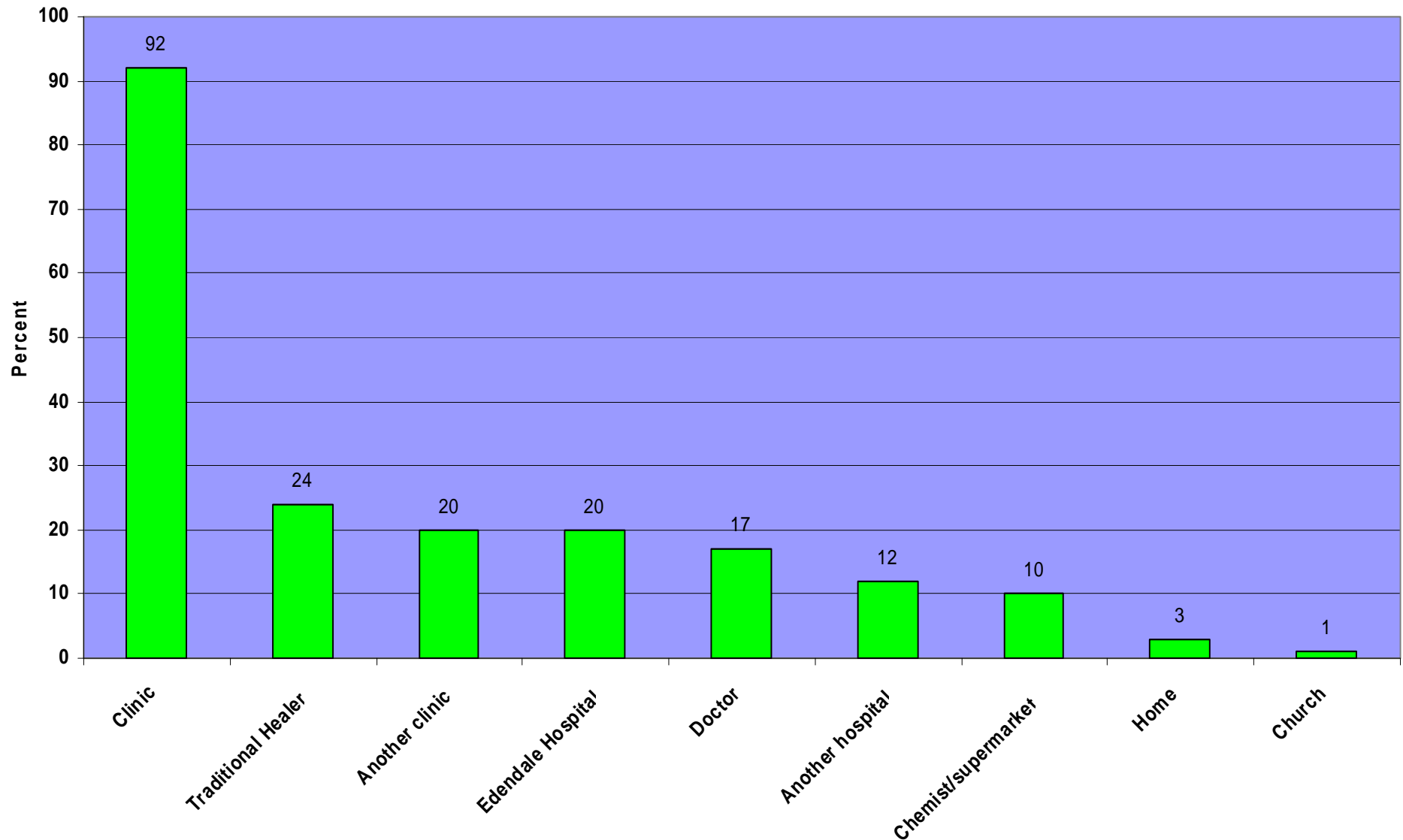
Visited by 25% of the TB patients: 72% males, 15% went knowing they had TB.

- **Where patients sought help**

(Methodology: Patient interview)



1 April – 30 September 2005: Patient Interviews: Where did patients seek help?



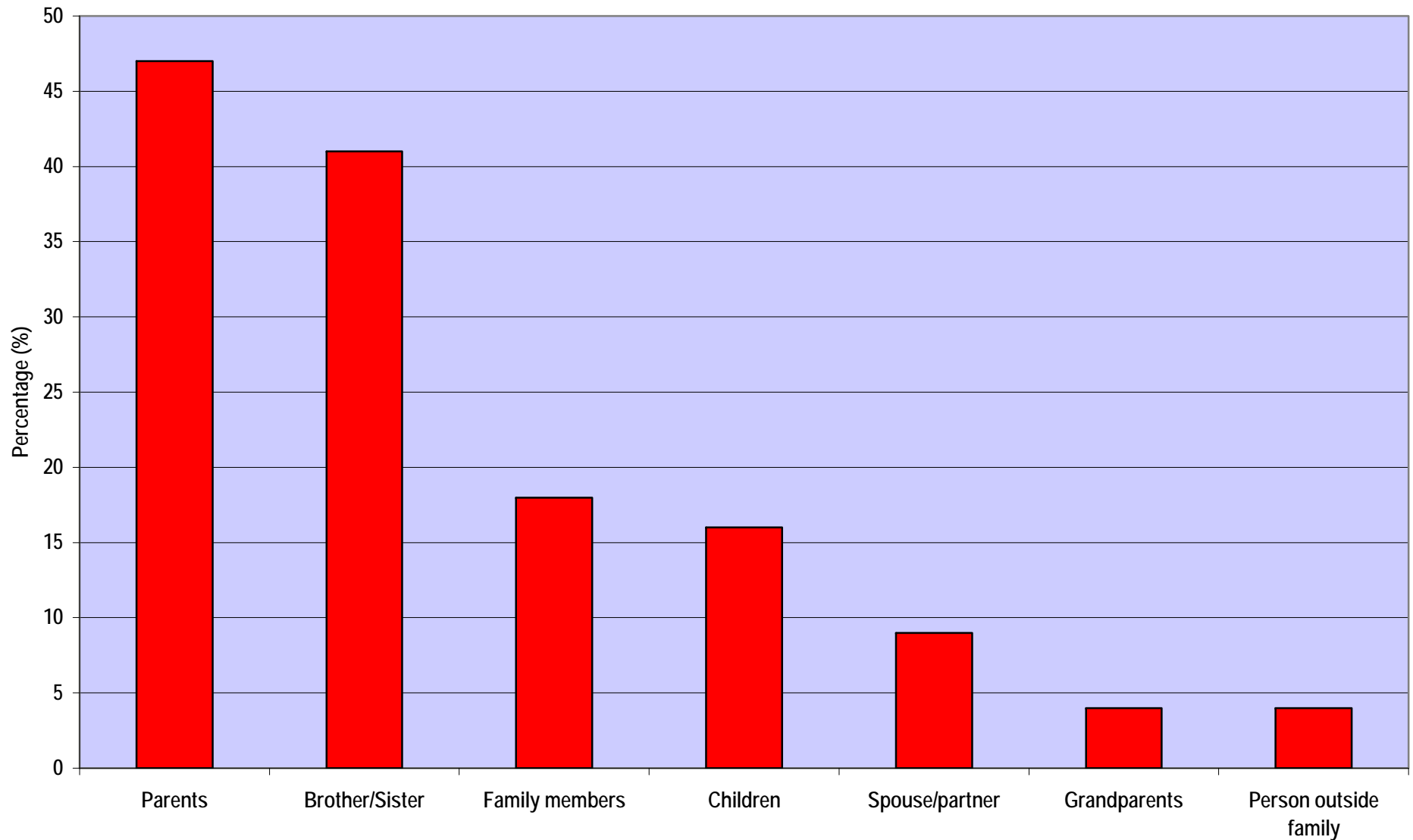
Association with HIV

- **Stigma – double stigma**
- **Delay in accessing services**
Median no. of days patients ill before seeking help was 21.
- **Access to health services**
Too ill to get to the clinic and too ill to wait to be attended to.
- **Increased morbidity due to HIV**
(presumed)

(Methodology: Patient interview)



1 April – 30 September 2005: Patient Interviews: Who did you tell you had TB?



Sources of information on TB

- **Role of female relatives**
80% of the patients were advised by a female relative to access health services from a health facility.
- **Nurses most useful source of information**
75% chose nurses as they are most knowledgeable.



(Methodology: Patient interview)

Management of TB patients at a clinic level

- **Four factors impacted on case management at a clinic level:**
 - **Impact of HIV/AIDS**
 - **Functioning of the clinics**
 - **Individual nurses**
 - **Community level support**

(Methodology: Patient interviews and nurses questionnaires)



Functioning of the clinics

Strengths:

- ***Drug supplies are continuous and uninterrupted.***
- ***TAT < 72 hours***
- ***Specimens/results are not lost***
- ***TB registers filled in***

Challenges:

- ***Long queues of patients***
- ***District support***
- ***Using information for management***
- ***Data capturing on ETR very slow***

(Methodology: Participant observation, key informant interviews, record reviews, patient interviews)



Individual nurses

- **Positive experiences:** A number of patients had positive experiences of nurses.
- **Negative experiences:** Some patients experienced nurses as not respecting their confidentiality, uncaring and insensitive.

“The only thing they know is to shout at us and they forget that we also have hearts and we are people.”



(Methodology: Patient and treatment interrupter interviews)

Individual nurses

Many of the nurses lacked in-depth knowledge of the NTCP:

- **No nurses were able to define the DOTS strategy,**
- **Only 40% of the nurses knew the targets of the NTCP,**
- **Only a third of the nurses could define smear conversion rate,**
- **Less than a fifth of the nurses knew the target turn around time.**

BUT:

3/4s of the patients rated information given to them by nurses about TB as the most valuable information as they felt nurses were most knowledgeable about TB.



(Methodology: Nurses questionnaire)

Role of Community Support

TB/HIV co-infection: Increasing need for effective community support, but:

- A number of different cadres of CBHWs;
- Selection and recruitment processes inconsistent and did not comply with basic HR practises;
- Remuneration was inconsistent;
- Inadequate support systems to provide support, M & E;
- No uniform system of training;
- No integration of TB and HIV services at a community level;
- Patients did not trust CBHWs.

(Methodology: Nurses questionnaire)



Suggest the following interventions

To promote adherence:

- Knowledge about the length of treatment is a key message which must be passed onto all TB patients;
- Given the levels of stigmatisation, all levels of health workers have to respect the confidentiality of patients;
- Supportive family and community members need to be co-opted to assist in promoting adherence;
- NTCP mechanisms for the referral of TB patients from the hospital to the clinic need to be instituted and tracing teams dispatched by the clinic if the patient has not arrived a week after discharge from the hospital.



Interventions within the hospital

Appoint a TB medical team to ensure:

- Standardised investigations for PTB and ETB based on NTCP guidelines;
- Laboratory results are entered into all medical records;
- Suspect registers are used to monitor the interface between the laboratory and MOPD/wards;
- Standardised management of TB patients according to NTCP guidelines;
- The details of how the TB and TB/HIV guidelines are implemented at the hospital and the procedures which must be followed must be documented and made available to all medical personnel;
- New doctors to be made aware of the national guidelines and procedures for TB patients and the need to adhere to these;
- Transfer letters must be written out in triplicate, as recommended by the NTCP, and one copy with the patient's contact details (preferably a cell phone number) must be sent directly to the clinic.



Interventions to promote TB/HIV integration

- All TB patients to be encouraged to have an HIV test;
- All HIV patients to be taught the signs and symptoms of TB and be encouraged to report these to a clinician if they develop in the patient;
- TB and HIV status to be documented on referral letters and patients' note;
- The NTCP guidelines and the DoH guidelines for TB/HIV management must be available throughout the hospital.



Interventions - Within the district and clinics

1. Appoint dedicated district TB co-ordinators who do regular supervisory visits to:
 - Provide educational outreach training combined with supervisory visits;
 - Ensure all health workers are aware of the targets of the NTCP and the importance of achieving these;
 - Assist clinic level staff in breaking down provincial/district level tasks into clinic specific activities which are regularly monitored.
2. A uniform consistent system of case holding for the co-infected TB/HIV patient is needed to assist in the management of both diseases.
3. If there are sufficient personnel, fast queues should be established for patients who are on “clinic DOT” or who are coming to collect TB medication for the month.



Interventions within the community

- Standardised conditions of service, training, and protocols for the different cadres of CBHWs;
- Support: Regular meetings between clinic staff and CBHWs to discuss problems, report on progress and provide ongoing training;
- Integration of TB and HIV services at a community level must be addressed by the National TB and HIV directorates.



Interventions at an undergraduate level

Both doctors and nurses need to be exposed to:

- The principles of infectious disease control and how disease control programmes work so that they understand the guiding principals and targets of the NTCP;
- The importance of adhering to national guidelines and protocols;
- The role of monitoring and evaluation in achieving these targets;
- The role each individual plays in the process.



Conclusion

- At a regional/district hospital level the NTCP guidelines need to be implemented to ensure effective diagnosis and treatment of TB patients.
- The NTCP has effectively decentralised TB services to a clinic level. But there are points of weakness which need to be addressed.
- Particular attention needs to be paid to the interface of the different components of the NTCP where patients tend to leak from the system.
- The recommendations suggested do not require huge financial or human resources, but effective management, planning and support of all levels of health workers.



Conclusion 2

- **This study has highlighted the complexity of the all the different components of the health system that have to function together for an effective TB service.**
 - Certain components may need more in-depth research to isolate problems.
 - It may be necessary to repeat in other provinces.
- **With the outbreak of XDR-TB in South Africa effective implementation of the NTCP at all levels of the health care system is a matter of urgency, particularly in KwaZulu-Natal.**



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Thank you

