

# Emergency Intervention at Mthatha Depot



*The hidden cost of inaction*



Rural Health  
Advocacy Project



Mthatha, Eastern Cape, Republic of South Africa

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# Emergency Intervention at Mthatha Depot: *The hidden cost of inaction*

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# 1. Introduction

In recent years South Africa has seen many positive changes in the health system, including leadership, political will to address HIV/AIDS and a determination to address the historic inequalities in the health system. The National ministry of health has launched many progressive campaigns in 2012 to transform the public health system.

However, as this report illustrates, some of the reasons for the crisis that is crippling parts of our public health system are no secret. Reports of drug and medical supply shortages, staff shortages, corruption and the mismanagement of funds and healthcare facilities are familiar all over the country.

The Eastern Cape Province is one of several provinces that is suffering particularly acutely. This is illustrated by the problems at the Mthatha Medical Depot. The inevitable consequence of the collapse of the system is human loss: treatment interruptions that can lead to resistance and death, patients going without vital surgical procedures, and extended preventable – but unprevented – pain, illness and indignity.

This crisis is occurring in the context of a renewed focus on the improvement of the health system, particularly at the primary healthcare level, as part of the National Health Insurance policy and of the National Strategic Plan on HIV, TB and STIs that includes the target of over three million people on treatment by 2016. The bitter irony of the likely death of scores of people as a result of ARV treatment interruption following the problems at the Mthatha Depot in the year (2012) in which the new NSP was agreed cannot go unnoticed.

The recent breakdown in the delivery of services by the Mthatha Depot is a single, particularly severe episode that caused an immediate crisis in service delivery. However, it is merely a symptom of the Depot's longstanding inability to adequately serve its function. The problems at the Depot go deeper than issues of labour disputes and flooding which precipitated the recent crisis. Inadequate human resource capacity, corruption, mismanagement and a lack of oversight by the National and Provincial Departments of Health (despite knowledge of the extent of the problems) left the Mthatha Depot vulnerable and the recent breakdown was predictable, as were

its consequences.

It is important to note that the recent crisis was more than a breakdown in service delivery. It was also a violation of the Constitutional rights of patients and a breach of the obligations of the Eastern Cape Department of Health. The breakdown in constitutional rights include breaches of:

- Obligations under the Constitution to provide for access to healthcare and not to reduce the level of healthcare provided as well as to promote the efficient, economic and effective use of resources;
- Obligations under the National Health Act 61 of 2003 to provide healthcare services and to plan, manage and control the cost of doing so;
- Obligations under the Public Finance Management Act 1 of 1999 to ensure the proper and efficient use of public funds, including proper stock control and to prevent fruitless and wasteful expenditure; and
- Obligations under the Pharmacy Act 53 of 1974 to ensure the safe and effective storage of medicine.

This clearly leaves many of us wondering about Eastern Cape Department of Health's leadership and indicates that the health crisis is overwhelmingly one of management constraints, rather than a shortage of funds.

We need urgently National and Provincial Government to take the lessons of the Eastern Cape and seriously take measures to ensure that this is addressed in other Provinces as well. This will be in keeping with the government's promise to overhaul and improve the healthcare system in South Africa.

**Vuyiseka Dubula, General Secretary, TAC**

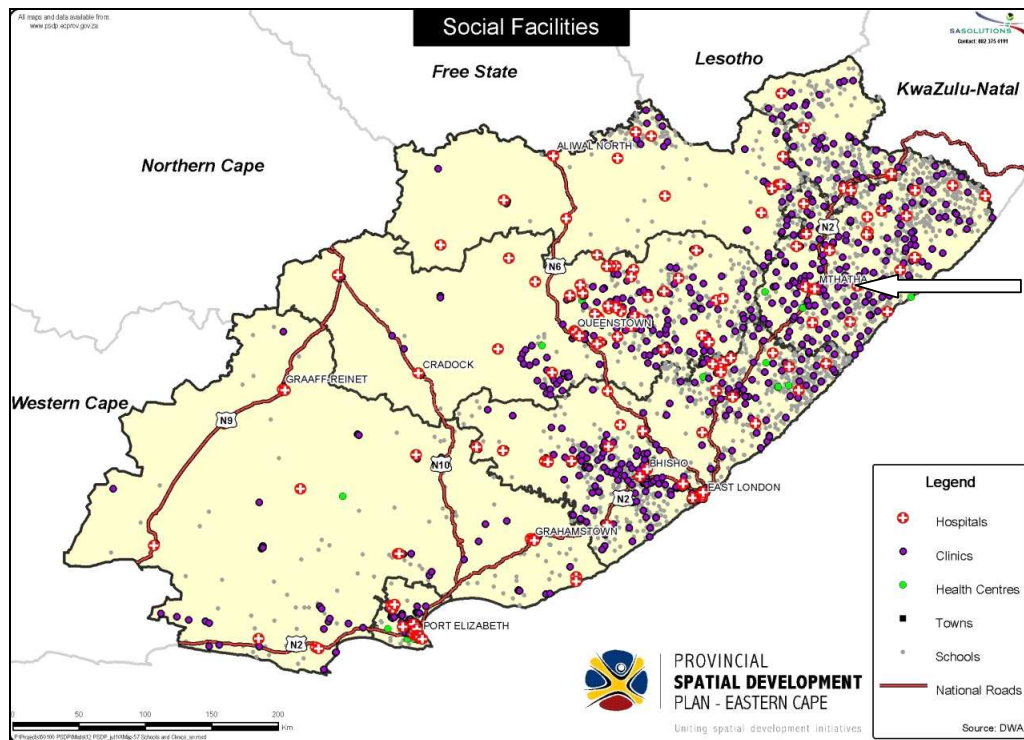
## 2. The Mthatha Depot & History of Intervention

### 2.1. The Mthatha Depot

The Mthatha Depot serves over 300 medical facilities with all their medical item needs in the Northeastern third of the Eastern Cape. This is a region popularly known as the “old Transkei area”, but in fact includes multiple municipalities of the Province and is detailed on the maps below in Figures 1a and 1b:

**Fig. 1a: Map of Medical Facilities in the Eastern Cape**

(White Arrow depicts the location of Mthatha)

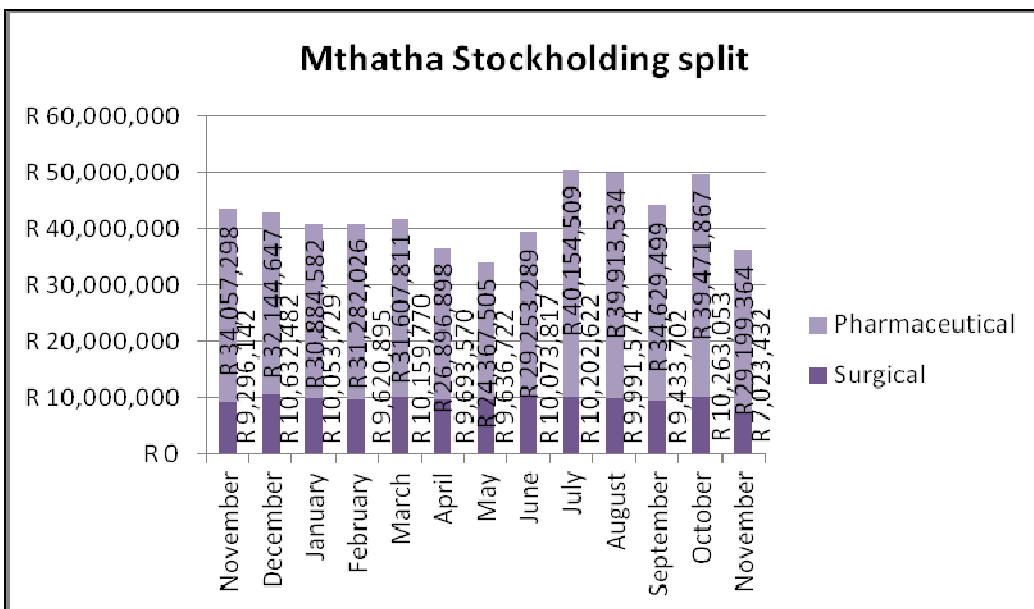


**Fig. 1b: Map of Area Serviced by the Mthatha Depot (Area Within the Red Line)**



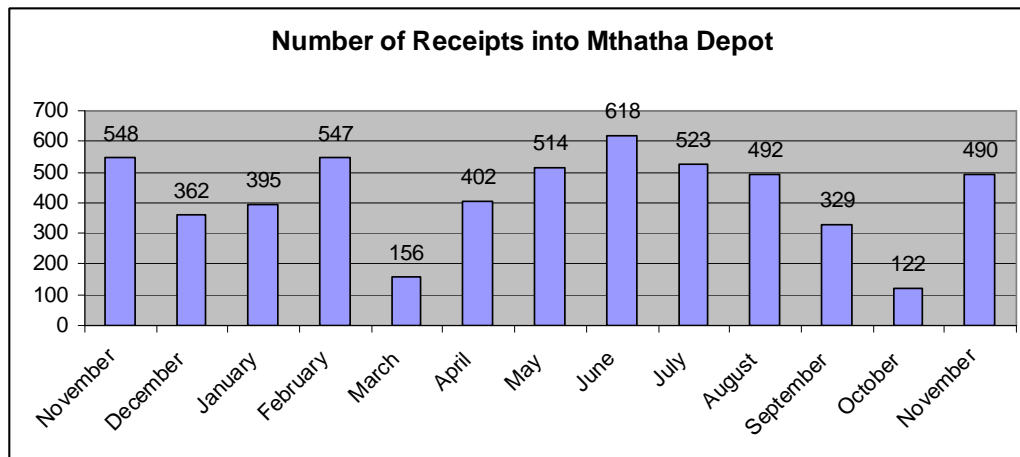
In 2012, the Mthatha Depot alone held, on average, between ZAR 40 million and ZAR 50 million of stock at any one time, processing approximately ZAR 30 million of orders each month. The graph below details its stock holdings from November 2011 to November 2012:

**Fig. 2: Stockholding at Mthatha Depot (November 2011 to November 2012)**

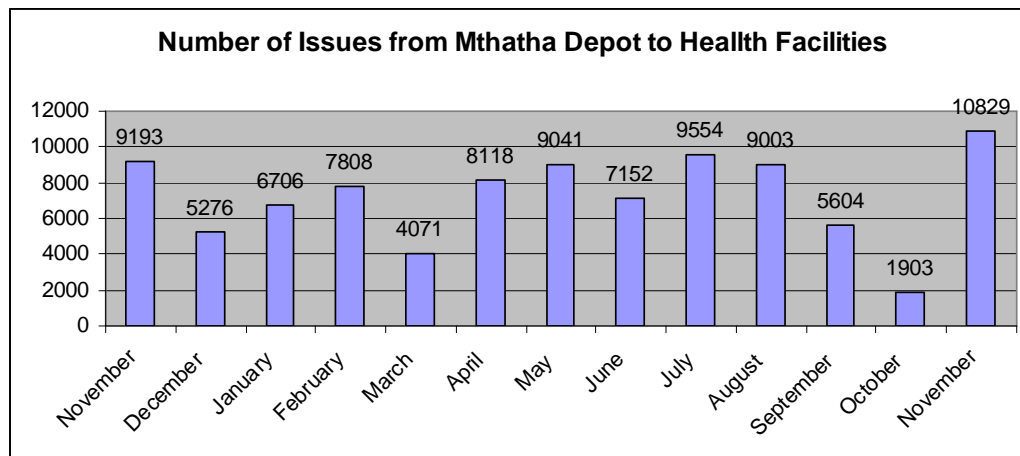


As part of its order processing, the Depot issues between 8,000 and 9,000 order items each month, while also receiving 400 to 500 deliveries from suppliers every month. Figures 3 and 4 illustrate this activity below:

**Fig 3: The Number of Deliveries Received Each Month (November 2011 to November 2012)**



**Fig 4: The Number of Items Issued Each Month (November 2011 to November 2012)**



In order to manage such large stocks and process so many orders, the Depot employs 40 staff members. However, that number is considered by some management as too small to regularly fulfill the needs of the warehouse, who cited funding restrictions

and a moratorium placed on new recruitment by the Department of Health as a block to growth.

Due to major problems in the Mthatha Depot, (Including HR restrictions, arson in 2011 and an alleged theft of stock in 2012) the principal depot at Port Elizabeth has taken over many administrative functions centrally, including processing orders with suppliers and financial management. As a result, Mthatha has become more of a logistical hub, rather than a fully functional depot.

## **2.2. The Current Crisis**

Notwithstanding the ongoing problems experienced by the under resourced Depot, the present crisis began in September 2012, with the national transport strike reducing orders delivered, in addition to a planned warehouse closure for stock counting purposes. Both events meant the Depot received far less deliveries from suppliers than usual, impacting its stock holding capacity.

Subsequently, on 10 October 2012, Depot staff went on an *unprotected* strike, which ended on 5 November 2012, after intervention from the Provincial MEC. However, staff only returned to work on a “go-slow” and eventually 29 were suspended by the Depot’s management on 04 December 2012. This left the Depot with only 10 working employees, most of whom were contract staff only.

Consequently, there were a number of factors that lead to an unprecedented reduction of stocks in both the Depot and the medical institutions it services, with supplies not received into the warehouse, orders not processed, items not issued to the medical facilities and, ultimately, drugs not dispensed to patients in need.

This can be seen in Figures 2 and 3 above, which detail stock holdings falling to ZAR 36,222,796 in November 2012 from an average of 40 to 50 million in the months leading up to September 2012. Additionally, the number of issues to medical facilities fell from an average of 9,000 before September to 1,903 in October. This picked up to 10,000 in November, but did not make up the short fall experienced by facilities in the previous two months.



As a result, the potential that medical institutions would face ruptures in medical stock was extremely high. In turn, the potential for the interruption in treatment of patients with chronic diseases, such as HIV and TB, was also high, with over 100,000 patients currently receiving ARV therapy supplied to health facilities by the Mthatha Depot. Additionally, the risk that medical institutions would be unable to increase their demand on supply, in order to initiate new patients on treatment, was also likely to occur, leaving many vulnerable patients unable to start life-saving treatment.

After extensive and regularly unanswered correspondence to the National and Provincial DoH about this, South African civil society movements *SECTION27*, *Rural Health Advocacy Project* (RHAP) and *Treatment Action Campaign* (TAC) contacted *Medecins Sans Frontieres* (MSF) to request urgent support to prevent massive treatment interruption of patients on ARVs. The crisis – and the request for support – was subsequently confirmed by Dr. Siva Pillay, outgoing Superintendent General (SG) of the Eastern Cape Province Department of Health (DoH).

In response, the four organisations sought approvals from the National DoH, through Dr. Anban Pillay and the Minister of Health Dr. Pakishe Aaron Motsoaledi, for MSF to intervene and, ultimately, MSF commenced operations in Mthatha Depot on 7 December 2012, with the specific objectives of assisting stock reception, order processing and deliveries to affected medical facilities. In parallel, TAC set up and maintained a stock-out monitoring network to help prioritize the issuing of essential drugs to the institutions in most need.

### **2.3. The MSF & TAC Intervention**

MSF and TAC began joint operations and swiftly identified the following issues upon arrival:

- i. No staff were on the ground to unload trucks, check supplier invoices against orders and capture receipt of stocks.
- ii. Capturing orders from medical facilities had not been completed, meaning the stock needs of all health institutions were unknown.

- iii. Once stock is posted in the Depot and orders captured, picking lists are produced for medical items to be packed for each facility. However, as there were no pickers, there was a large backlog of unpacked pallets for delivery, which in turn meant health facilities had not received their orders.
- iv. Delivery itself was not a major problem, as this activity is outsourced. However, as orders had not been packed, no items could be issued for delivery.
- v. The depot was suffering ruptures in ARV and TB items, especially TDF 300mg, EFV 600mg, Lamivudine (3TC) 150mg (The standard first line antiretroviral regimen) and paediatric TB treatments.

As a result, MSF and TAC implemented the following support:

- i. 2 staff members to action receiving and 1 data capturer to update the capturing of supplies received.
- ii. 2 data capturers for capturing orders from the medical facilities.
- iii. 24 pickers to pack deliveries.
- iv. Increased management capacity, with 1 Coordinator, 1 Logistician and 1 Senior Pharmacist.
- v. MSF hired an additional pick-up vehicle to expedite deliveries.
- vi. MSF coordinated with the National and Provincial DoH to contact suppliers of the missing ARV and TB items, in order to expedite their delivery to the Depot.
- vii. Through monitoring the stock-out hotline provided by TAC, the Depot was able to map ART priorities and compiled a database of facilities along already established transport routes, in order to determine where critical shortages existed and prioritize delivery accordingly. NB: After coverage on SABC, the hotline received many calls that proved invaluable in mapping ART priorities.
- viii. Additionally, by mobilizing the TAC office in Lusikisiki, which opened throughout the December holidays, the organisation used its local treatment monitors to produce daily reports of stock-outs of essential medicines, while also distributing hotline posters at local spaza shops and village spaces. A number of TAC volunteers also went door-to-door in the Lusikisiki area to encourage people to return to their clinic for medication, once supplies had

been delivered. The volunteers also confirmed deliveries to facilities back to the Depot and any new stock shortages arising were also immediately reported.

The Department of Health also increased activities to complement MSF and TAC's intervention, including sending three experienced pharmacists from the National DoH for one week, which bolstered management capacity greatly.

Subsequently, by 19 December 2012 the backlog of orders had been cleared and the Depot was able to move to its regular functioning, with deliveries reverting to its planned rotation, rather than responding to the stock-out hotline priorities. Therefore, in two weeks it was possible with a relatively small team and low financial investment to both halt the decline in service delivery to the medical facilities and clear the backlog of orders sitting in Mthatha Depot. In total, MSF and TAC spent less than ZAR 220,000 on its response in the Mthatha Depot to do this.

It is hoped that by doing so, many existing patients were not forced to interrupt their treatment. However, there are still concerns that new patients waiting to initiate ARV therapy continue to be affected by unpredictable and erratic supply to the facilities. This is especially the case for HIV/TB co-infected children, who are still awaiting paediatric TB treatment and, consequently, cannot yet be initiated on ARV therapy.

The question then is why was such a situation not avoided and how did the slow response of both the Eastern Cape DoH and National DoH to this impending crisis affect mortality and morbidity rates in the Province? In short, what was the human cost of inaction?

### 3. The Human Cost in Eastern Cape of Erratic Supply & Inaction to Respond

As detailed above, the acute HR crisis in the Mthatha Depot caused deliveries of essential medical items to be disrupted, with supply erratic throughout September, October, November and December 2012. It is therefore expected that disruptions at the Depot severely impacted the ability of health facilities to maintain, as well as initiate, both TB and HIV/AIDS patients on treatment. In order to examine the human impact of this break in regular supply, MSF, in collaboration with TAC, conducted a short survey of affected facilities, held patient interviews and corroborated results against other available data sources at the Depot.

#### *Results of the Survey*

In total, 72 health facilities supplied by the Mthatha Depot were surveyed, to establish whether they had experienced stock outs during the period September 2012-January 2013. The survey also investigated whether clinics were able to mitigate the impact of stock outs for patients, or whether patients were sent home without treatment, and if so how many. Data held on the Depot's drug information system was also reviewed to compare reported stock outs by medical facilities with the Depot's records of outstanding drug orders.

From responses to the survey, it was possible to generate estimated numbers of patients affected separately for facilities receiving direct drug supplies from the Depot and those dependant upon other facilities for their supply, in order to take account of the potential differential impacts of supply disruption on different levels of facilities.

We found that **24%** of those facilities surveyed had to send away more than one regular ARV dependent patient without treatment. Had drug supply not been re-established, this situation would have quickly deteriorated further, with **53%** of facilities surveyed also reporting stock outs of one or more HIV or TB drugs. However, some facilities remained able to mitigate the impact of supply disruptions by either borrowing drugs from neighboring facilities, or reducing the duration of treatment provided to patients. How long this contingency plan implemented by

facilities could have been continued is unclear, but it obviously placed many patients in a highly vulnerable position and increased the patient-cost of accessing treatment.

In total, it can be estimated that at least **5,494** adults taking ARVs went for at least one day without any ARV treatment due to this disruption. It is also estimated that **561** children were sent home without treatment. Depot data systems, although lacking patient level data, show that many facilities still have outstanding drug orders, particularly for tenofovir, for which **34** facilities still await supplies.

Based on academically-accepted published data<sup>1</sup> on the impact of unplanned drug interruptions upon drug resistance, it can also be estimated that at least **714** patients may have developed some form of drug resistance as a result of this period of supply disruption.

Given the numbers affected, it is also possible to estimate excess mortality attributable to this period of unplanned treatment interruption. The estimate is approximately **20 – 80** patients over the year; the range being dependant on which assumption for the excess mortality of treatment interruption is used<sup>1</sup> and the normal death rate among the affected population.

The ability of medical facilities to provide their patients with TB treatments was also affected by the crisis at Mthatha Depot. The numbers affected are more difficult to quantify, as at the time the survey was conducted, it was not possible to reliably ascertain the number of TB patients treated at affected facilities. It must be noted though that pediatric TB drugs were particularly affected.

The survey found that **22%** of facilities reported that they were completely unable to provide pediatric TB treatments, often for many months, and in many cases this was an ongoing problem. This was confirmed by the Depot's order data, which showed that large volumes of pediatric TB treatments had not yet been received by the Depot and have, in turn, not been supplied to facilities in need, with **20** facilities still having outstanding orders at the time of this report. Long interruptions of TB treatment in

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<sup>1</sup> Katharina Kranzer and Nathan Ford. *Unstructured treatment interruption of antiretroviral therapy in clinical practice: a systematic review*. Tropical Medicine and International Health. volume 16 no 10 pp 1297–1313 October 2011.

children is likely to have a much higher proportional impact on mortality of these children than short interruptions of ART.

### ***Patient Interviews***

The cost of the disruption in ARVs and TB drugs can be measured not only in terms of patient morbidity and mortality rates, but also in terms of financial hardship and emotional distress inflicted upon those who depend upon continuous ARV supplies in order to survive.

To illustrate this further a number of patients affected by the drug disruption were interviewed. Patients selected for interview had already reported to TAC that they had been unable to obtain ARVs during the period of the Depot disruption and therefore were directly affected by this specific crisis. Some selected quotes are detailed below:

NB: Responses are anonymous and all of those interviewed provided informed consent for use of their quotes in this document.

***“In November I was told there was no TDF at my clinic so I went for one week without any treatment. I felt terrible ARVs are a lifelong treatment, I thought maybe I am going to die”***

(Patient 2, 32 year unemployed female, Goso Forest)

***I am afraid to die, every time they tell me there is no treatment I think of dying”***

Patient 1, 36 year old unemployed male on ARVs since 2008.

- It was also clear that disruption to ARV supply had placed individuals under serious financial pressure:

***“It (ARV supply disruptions) causes me a lot of problems financially to come to town, it breaks my heart that some other people who run out cannot afford taxi fares into town”***

Patient 1, 36 year old unemployed male on ARVs since 2008.

***“In November 2012 I went to the clinic and they gave me just one ARV tablet, for the next two days I had nothing. I had to go back to the clinic, its painful to spend my money on this. In my support group there are fifteen other people who had no treatment for a few days.”***

Patient 3, 31 year unemployed female from Goso Forest

***“In November I went to the clinic to get my ARVs but they couldn’t give me any, so I went one day without any ARVs. After one day with no treatment I went back to the clinic and they gave me just one tablet for one day only and told me to come back the next day. When I went back they gave me enough tablets for seven days, so I had to go back again when that had run out.....after that they gave me one month supply..... I get the money from my mother but sometimes she doesn’t have any so has to borrow.”***

Patient 4, 22 year old student from Goso Forest

- Disruption to ARV supplies also compromised PMTCT services and may have led to avoidable infant HIV infections. Reports included:

***“In November I couldn’t get any Nevirapine for my baby who is eight months old, I am still breastfeeding. The child had no Nevirapine for one week..... I still breastfed.”*** Patient 3, 31 year unemployed female from Goso Forest

- Disruption to ARV supply is a chronic problem as this quote illustrates:

***“Each year it happens at least six times, I go and they tell me there is no medication for me”***

Patient 1, 36 year old unemployed male on ARVs since 2008.

In conclusion, it is expected that many current patients, who depend on Mthatha Depot for their supply of ARVs, suffered greatly from the HR crisis that hit the institution from September 2012 onwards.

While the figures produced by this survey are only estimates, they are startling in their magnitude. It can therefore be affirmed that thousands of regular patients were directly affected by the emergency, with hundreds of people now facing a lifetime of resistance to first line treatments and scores of excess deaths caused by this acute and avoidable break in service delivery.



## **4. The Economic Cost in Eastern Cape of Erratic Supply & Inaction to Respond**

### ***4.1. The Economic Cost of Treatment Interruption***

As detailed in the previous section, we estimate that 714 people may have developed drug resistance to first line treatment as a result of the disruption in deliveries from the Mthatha Depot. This not only has a human cost, but also has a negative economic impact on the budget of the Eastern Cape DoH, as patients will be switched to second line treatments.

Assuming that most patients on first line ARV regimens are taking Tenofovir, Lamivudine and Efavirenz, and that those moving to second line regimens would be switched to Zidovudine, Lamivudine and Lopinavir/Ritonavir, we estimate the excess cost of treating drug resistance caused by this episode to be **ZAR 1.1 million** per year, for as long as those patients remain alive and on treatment.

### ***4.2. The Economic Cost of a Dysfunctional Supply System***

While the HR crisis at the Mthatha Depot was sudden in its onset and effect on supply in the region, it is clear from four weeks of work in the Depot that many more chronic, long-term, problems are impacting the Supply System as a whole.

#### ***4.2.1. Excess Expired Items***

The Mthatha Depot is a transit stock warehouse, meaning items are supposed to be quickly distributed to the medical facilities and stock should not stay on its shelves for long. In theory, this enables easier expiry date management by the Depot, with the FEFO (First Expiry First Out) system enabling efficient management of stocks.

However, during the clean up process of the warehouse a number of pallets of expired items were uncovered and, additionally, a locked room at the side of

the building was opened, where a large stock of expired ARVs and TB treatments could be found. The photo below shows this informal “store”:

*Photo 1: Expired Drug Store at Mthatha Depot (January 2013)*



The most concerning issue regarding this discovery was that it remains unclear whether these stock numbers have been removed from the Stock Management figures on the computer system, possibly indicating that the current stock values held by the Depot are actually lower than presently reported. This not only could lead to unnecessary ruptures of treatment in the future, but could also impact the validity of financial asset management at the Depot, making accountability to the Province almost impossible.

As the expired drugs were poorly managed, with no inventory of the store held, it is impossible to quantify the actual numbers of lost stock and a corresponding cost. However, as many items in Photo 1 are ARV and TB treatments, it can be assumed that millions of Rands are sitting unmonitored and unaccounted for in the Mthatha Depot.

It is therefore recommended that an inventory of all expired items in the store is made immediately, with drugs subsequently taken for safe destruction. The stock figures of the Depot must then be reviewed and audited to properly reflect true numbers and values.

#### **4.2.2. Order Management Excesses and Ruptures**

While attempting to identify how many clinics suffered ruptures caused by the current crisis, it swiftly became clear that many medical facilities did not have a good understanding of their current stock levels, or actual consumption figures. As a result, according to many medical institutions we spoke to, this has made the basic activity of ordering supplies problematic, which has led to some facilities holding excess stock, while others rupture.

Hence, it can be assumed that many facilities in the region are also holding hundreds of thousands of Rands of excess stock, which is difficult to manage, especially when consumption estimates are generally unknown. As a result, it is expected that many medical facilities also produce high values of expired items.

From extended interviews with all stakeholders, it became clear that many medical institutions also did not trust the supply system as a whole and therefore often over-ordered essential items, in order to avoid stock-outs. Additionally, if a certain medical order was not completely fulfilled by the Depot, rather than wait for existing outstanding orders to be delivered, many facilities would continue to place new, supplementary, orders. From a quick paper review of the “Dues Out” data of the Mthatha Depot, it is easy to see what impact this has on the supply system. For instance, the “Dues Out” figures for HIV Rapid Tests is a good example.

The system shows that from 01 November 2012 until 11 January 2013, there are 37,800 units of HIV Rapid Test orders outstanding (One unit is made up of 100 tests), which equates to 3,780,000 tests currently outstanding for delivery by Mthatha. This is enough to test over half of the population of the entire Province of the Eastern Cape, never mind the small proportion of the population that Mthatha services. Furthermore, no clinic that we spoke to was

actually suffering a stock-out of Rapid Tests. It can therefore be assumed that if all these outstanding orders were to be completed, the Province would hold significantly large values of excess stock of HIV Rapid Tests.

Such over-ordering is an indicator of a dysfunctional supply system and is usually accompanied with ruptures in other items. As a result, supply can be described as “erratic”. It must be noted that at the hospital level that we spoke to, the general understanding of how supply worked and should be managed was quite good, with hospitals seemingly rarely over-ordering. The problems came more at the primary healthcare level, where individuals responsible for supply often did not fully understand supply protocols, or how the system worked as a whole. Consequently, improper and inefficient ordering was usually carried out by the smaller facilities.

The erratic nature of supply in the Mthatha region is not only expensive, with drugs more likely to expire before they are prescribed, but the impact on individual patients interrupting treatment is also high and has the potential to lead to excess mortality rates in the Province. It is therefore recommended that National and Provincial DoH send additional experienced pharmacists to relevant clinics and sub-facilities to train each site on how to monitor stock levels, patient numbers and actual consumption figures more effectively. Only then will facilities be able to make cost-effective and correct orders each week, avoiding both ruptures in treatment for the individual patient and costly destruction of medicines for the Province.

#### **4.2.3. Poor Security Resulting in Probable “Leakage”**

It must be noted that standard security protocols in the Mthatha Depot remain unimplemented. While the warehouse has facilities to cage off specific areas for high value items and drugs that can be abused, all cage doors were left open during the working day and there was no control of who could enter the building, never mind high value stores. Cars are allowed to drive in and out of the facility, without check or control, and virtually anybody can access the stores.

As a result, the opportunity to steal from the site is clear and with ZAR 50 million of stock on hand, the temptation must be high also. Therefore, the implementation of security controls must be effected immediately. This will not only stop any leakage of assets from the site, saving large sums of money to the Province each year, but would also protect staff from potentially false accusations, as currently anybody can enter the site and take high value items with ease.

## **5. Conclusion & Recommendations**

Through coordination of MSF and TAC activities, the organisations showed that it is possible to intervene in a supply crisis and avert a public health failure that had the potential to cause unnecessary suffering and death across the region. Lessons therefore must be drawn from this experience and both the Province and National Departments of Health must be prepared to intervene in future crises of this nature.

Recommendations for immediate implementation in Mthatha and for a renewed focus on supply by the National and Provincial DoH are detailed in the following sections:

### ***5.1. Recommendations for Immediate Implementation***

#### **1) Additional Technical Support Required from EC DoH and National DoH**

Both the Eastern Cape and National DoH must send experienced Pharmacists and Depot Managers to Mthatha immediately, in order to implement the basics of stock management and supply back into the institution.

The current order backlog has now been cleared, with the Depot presently processing orders placed by facilities in the second week of January. This offers management an opportunity to step away from daily “fire fighting” of tasks and re-implement basic protocols.

We would therefore recommend that at least one experienced Pharmacist is sent from National and the Province send at least one senior Depot Manager to work on site until usual stock management and supply protocols are implemented in Mthatha Depot. This will require a senior manager to be placed on ground for several months, rather than just a few weeks, to ensure proper governance in the institution and effective implementation of protocols.

## **2) The HR disciplinary processes to be expedited and temporary replacements hired immediately**

A speedy resolution of the ongoing disciplinary process is a necessity and would enable the depot to reinstall certain staff immediately, while also appointing new recruits, where appropriate.

In parallel to the ongoing disciplinary process, the Eastern Cape DoH must commit to the immediate substitution of affected staff by temporarily recruiting pickers and packers. A failure to do so will result in the immediate collapse of supply to the medical facilities once more, which is unacceptable.

## **3) Immediate Supply of Ruptured Stock to the Depot**

The DoH must ensure the immediate supply of all ARVs and TB treatments that are still out of stock in the Depot, either through regular tender supply channels or allowing an appropriate deviation process, in order to access an alternative supplier. Additionally, all medical items on the “dues out list” in the Depot must be immediately actioned and followed up weekly with the relevant suppliers.

This recommendation, while specifically for the Mthatha Depot, is relevant across the nationwide health service, with numerous reports from DoH staff that there is a shortage of some key life-saving items nationally. This was attributed to certain suppliers not meeting their manufacturing targets and certain Provinces not submitting correct projections. As a result, many depots in the country are yet to receive their full orders. This must therefore be resolved immediately at a national level.

## **5.2. Recommendations Going Forward**

As detailed in Sections 2 and 3 of this report, the cost of inaction in responding to the HR crisis of a medical supply depot has the potential to be huge in both human and economic terms. It is therefore recommended that the National Department of Health builds capacity to respond swiftly to a failure in its medical supply chain. As shown here, the MSF intervention cost less than ZAR 220,000 and only required two

“managers” to coordinate operations on the ground. This is well within the means of the National DoH and we strongly call on the Department to build additional capacity immediately to ensure an emergency response team is available to intervene anywhere in the country at any given time. If a Pharmacist, HR Administrator and two Stock Managers, with a readily accessible budget to hire temporary workers, had been sent to Mthatha in November, no clinic in the area supplied by the Depot would have suffered excess ruptures caused by the current HR problems.

The HR crisis at Mthatha Depot also illustrates ongoing problems with the supply chain in the Province, which should be considered as a case study for the Department. While attempting to identify how many clinics suffered ruptures caused by the crisis, it became clear that many medical facilities did not have a good understanding of their current stock levels, or actual consumption figures. This has made the basic activity of ordering supplies problematic and has led to some facilities holding excess stocks, while others rupture. The erratic nature of supply is not only expensive, with drugs more likely to expire before they are prescribed, but the impact on individual patients interrupting treatment is high and can even lead to excess mortality in the Province. It is therefore recommended that either the Eastern Cape or National DoH send additional Pharmacists to the Province to train relevant staff at a clinic and sub-facility level (Hospitals appear to be managing their needs relatively well) on how to monitor stock levels, patient numbers and actual consumption figures more effectively. Only then will the facilities be able to make cost-effective and correct orders each week, avoiding both ruptures in treatment for the individual patients and costly destruction of medicines for the Province.

In essence, the failure in supply caused by the acute HR crisis and also the chronic failings of the supply process in the Province, are due more to ineffective governance than any one-off incident. Therefore, in order to find durable and sustainable solutions to the supply problems in the Mthatha region, the Depot and health system as a whole must become more accountable to the patients they serve. It is clear that affected patients must have the possibility to report problems in their clinics and hold institutions accountable when they fail in delivering much needed services. Linking the community to their home medical facility and even the supply depots would help



the Department of Health in the long-term, as the community could then act as regulators to oversee service delivery.

Accordingly, we would recommend that in at least in the short term, community members and affected patients join the Provincial and National DoH on an Oversight Committee for the Mthatha Depot, in order to ensure its restructuring is implemented effectively and efficiently. Hopefully then, local medical facilities will no longer fear medical stock outs and patients will not interrupt lifelong, life-saving treatments.

For the longer term, a capacity to monitor treatment ruptures is required at a local, Provincial and National level. The Rural Health Advocacy Project, the Southern African HIV Clinicians' Society, SECTION27, TAC and MSF are currently planning the set up of a Drug Stock Out Monitoring Project to monitor stock outs of essential drugs for South Africa, with a focus on antiretrovirals and TB drugs. The aim of this network is to organise feedback on stock ruptures by both patients and health staff into a centralised database, in order to make mapping of clinics requiring emergency supplies possible. Information will then be fed back to the Department of Health and made public to increase efficiency and transparency. As yet, the initiative is only in its initial stages of planning, but it is recommended that National DoH coordinate with civil society, in order that they might create an effective monitoring tool together.

Additionally, it must be reiterated that non-medical functions in the national health system cannot be ignored, or considered less important than frontline activities. While new hospitals and trained staff are integral to the success of healthcare provision in South Africa, support activities, such as logistics and supply, are just as essential to delivering a functioning health service.

An inability to address these chronic, structural, problems now will have a high cost in the future, both to the Eastern Cape Department of Health, but also to individual patients, many of which may pay, through no fault of their own, the ultimate price of inaction.

## Annexes

### **A. Recommendations for the Daily Management of Mthatha Depot**

- A well trained team for pharmacy management needs to be put in place, with a knowledge of good pharmaceutical distribution practices, with standard operating procedures implemented.
- Cold chain training is a strong priority – both in the Depot and in facilities receiving deliveries. In the Depot: a spring is needed to close the cold room door; systematic placement of temperature monitoring devices, monitoring and temperature registration on delivery; training on packing cold chain materials (to avoid both high temperatures and freezing of vaccines by inappropriate use of ice packs).
- Security is a major issue at Mthatha Depot. The institution holds ZAR 50 million worth of stock, yet doors remain open during the day, cages are not locked and nobody is searched when leaving the premises. As a result, the opportunity to pilfer is all too easy and “leakage” of stocks is a very high probability. It is recommended that additional controls are implemented immediately to prevent future loss of stock.
- Psychotropic drugs need to be placed under stricter control (currently on shelves in general stores), in a locked room with closer management by a pharmacist (e.g. Ketamine, Propofol, Diazepam etc.).
- The Depot must create and maintain an up to date contact list of the relevant supply responsible at each medical facility it supplies. The Depot should then contact each facility before an order is shipped to arrange reception. These contact details should also be shared with SkyNet, so that any delivery problems can be resolved easily.
- The existing and incoming stock must be reorganized by ICN codes, and identifying labels, detailing both product description and code, need to be placed on the shelves.

- Some broken shelves need repairing and the premises requires painting to enable easy cleaning.
- Expired products need to be placed in a quarantine zone, and proper disposal/destruction organized with urgency.
- Proper follow up to follow the batch (in case of recall) and expiry dates, including FEFO (first expiring, first out) system needs to be put in place. A stock card system may be appropriate.
- An implementation of an electronic ordering system, similar to that operated at the Port Elizabeth Depot, versus the current manual system, would reduce general errors. The manual system was found to be prone to human error when we spoke to pharmacists in the area.
- Deliveries from the Depot to facilities are accompanied by a printed invoice and the delivery drivers are supposed to return the signed invoices to the Depot as proof of delivery. According to reports at facility level, this invoice frequently contains handwritten amendments, where staff members at the Depot have changed the quantity of certain medicines to be delivered. Naturally, this change is not necessarily reflected in the Depot's computer system, which leaves the supply chain open to corruption. Additionally, RHAP frequently receive reports of invoices not being returned to the Depot, meaning that there can be little follow up about what stock actually leaves the Depot, compared to what is eventually delivered.
- Consideration should be given to creating internal access from level 2 of Depot to level 1 Skynet distribution warehouse, to avoid the transportation of material around the exterior of the Depot by forklift.
- A stock card system should be implemented to properly manage medications and medical items on the shelves.
- Many products are stored in high shelves. This means pallets are difficult to access, making quick and safe packing problematic. Alternative locations in the Depot for bulky items should be identified and utilized.

## **B. Handover Action Plan from MSF to the DoH**

### **1) Additional Support Required from EC DoH and National DoH**

Both the Province and National DoH need to send experienced Pharmacists and Depot managers to Mthatha, in order to implement the basics of stock management and supply back into the institution. The current order backlog has now been cleared, which offers an opportunity to re-implement basic protocols.

### **2) The disciplinary processes to be expedited.**

A speedy resolution of the ongoing disciplinary process is a necessity, which would allow the depot to reinstall certain staff and recruit new appointments, where appropriate.

While the disciplinary process is ongoing, the Province must commit to temporarily replacing the affected staff.

### **3) Immediate Supply of Ruptured Stock**

The Depot must ensure the immediate supply of any ARVs and TB treatments that are still out of stock, either through regular tender supply channels or allowing appropriate deviation process to access an alternative supplier.

Additionally, all medical items on the “dues out list” must be immediately actioned and followed up weekly with the relevant suppliers.

### **4) Route Schedule for Delivery**

Due to the nature of the emergency, a compressed route schedule was implemented in the period 07 – 21 December 2012. In January, all routes were printed every day, relying on SkyNet to group deliveries by route and process.

*It is recommended:*

1. All routes are covered within one calendar week

2. The depot to implement a system where orders are captured on day 1 and printed on the same day in the evening, to allow store managers to plan their resources accordingly;
3. Where possible, the picking of orders on day 2 should start at the beginning of the working day, irrespective of the number of orders, and to continue until all orders are completed. The orders can then be moved to the transfer-out area the same day. This would free time for emergency/special orders to be prioritized.
4. Orders can then be delivered by SkyNet on day 3, in terms of their route schedule.

### **5) Working with SkyNet**

It has been identified that sometimes parts of or whole orders remain undelivered at the SkyNet warehouse. This can include life-saving medication, such as ARVs. In addition, some deliveries are then returned to the depot, because there wasn't anybody appropriate to receive them at the facility, or because they were delivered to medical facilities after working hours.

*It is recommended:*

1. A strict control over SkyNet is implemented.
2. A managing depot pharmacist work with the Skynet manager to:
  - a. Weekly: review the delivery schedule for the next week including any expected deviations from the regular weekly schedule
  - b. Daily: on the afternoon of the day prior to the delivery date review the proposed allocation of trucks for the following day based on stock levels per route/facility in Skynet warehouse area.
  - c. If despite previous day planning, parts of orders remain in SkyNet's warehouse for technical reasons (e.g. order too big and unable to fit in vehicle) determine clear priorities for amending the following day's delivery schedule based on which items have to be delivered first should be set (e.g. ARVs before examination gloves).

3. People responsible for reception at facility level have to be informed that a delivery is on its way and have to be requested not to leave the facility before the arrival of a delivery.
4. The number of vouchers issued are to be compared to the number of vouchers returning from the facilities.

## **6) Stock allocation**

One of the biggest challenges during the intervention was the poor implementation of Stock Allocation system. Some items have no assigned “Bin Location” and are free-standing in the store rooms; others are not placed in the correct “Bin Location”. This leads to slow picking of orders and created a long lead time for new pickers to identify the items needed.

*It is recommended:*

1. All stores to be re-arranged to reflect the assigned “Bin Locations” as per the Depot IT system;
2. Items with no “Bin Location” must to be assigned one;
3. As the IT system allows, bulk stock should have an alternative “Bin Location” assigned;
4. Store managers should follow-up transfer of stock from bulk “Bin Location” to main “Bin Location” on a daily basis.

## **7) Inventory**

It has been identified that some items printed by the IT system as available, are either not in sufficient amount, or not available at all. Changing a printed order is a time consuming process and is only possible with a specific set of rights on the IT system.

*It is recommended:*

1. A full inventory of all stock to be performed, after allocating all items to their correct “Bin Location”;
2. During the inventory, expired stock should be identified and written off;

3. The IT system is to be updated with the actual stock, as per inventory;
4. Regular inventory system and spot checks are to be implemented and executed on a regular basis.

#### **8) Emergency Temporary Staff**

The emergency response team had a positive experience in engaging temporary workers from the student pool of various tertiary institutions in Mthatha. The temporary staff showed sufficient knowledge, skills and dedication for the tasks at hand.

*It is recommended:*

1. In any future similar crises, the Provincial DoH could also engage students as daily workers to assist in picking and packing goods. In particular, nursing students have excellent knowledge of medical items and are a good resource to target.

### **C. Survey Calculations to Estimate Numbers of Patients Affected**

The following two Tables detail the calculations made, in order to estimate the number of patients affected by the current HR crisis at the Mthatha Depot.

**Table 1:** Summary by type and volume of TB drugs which are currently outstanding at facilities served by Mthatha Depot, based on interrogation of Depot data system, as of 10/01/2013

<b>ITEM</b>	<b>unit size</b>	<b>No. facilities with outstanding orders</b>	<b>units demanded</b>	<b>% Outstanding</b>
Pyrazinamide 500mg	84	9	550	87.3%
Rifampicin Isoniazid Pyrazinamide 60mg, 30mg, 150mg	28	8	2405	100%
Ethambutol Rifampicin Isoniazid Pyrazinamide 275mg, 150mg, 75mg, 400mg	84	13	7712	59.3%
Ethambutol Rifampicin Isoniazid Pyrazinamide 275mg, 150mg, 75mg, 400mg	140	5	376	97.1%
Rifampicin Isoniazid Pyrazinamide 60mg 30mg	100	14	5569	100%
Rifampicin Isoniazid Pyrazinamide 60mg 30mg 150mg-dispersible	100	7	320	90.3%
Isoniazid, 300mg	28	1	400	95%
Rifampicin Isoniazid 60mg, 30mg, paediatric	28	16	8970	91.2%
Rifampicin Isoniazid 60mg, 30mg, paediatric	56	4	5620	98.7%
Pyrazinamide 150mg, dispersible	150	22	1575	98.4%



**Table 2:** Summary by type and volume of ARV drugs which are currently outstanding at facilities served by Mthatha Depot, based on interrogation of Depot data system, as of 10/01/2013

<i>ITEM</i>	<i>unit size</i>	<i>No. facilities with outstanding orders</i>	<i>units demanded</i>	<i>% Outstanding</i>
HIV rapid test kit	100	18	37800	100%
Lamivudine oral solution 10mg/ml 240ml	1	8	738	98.1%
Nevirapine tablets, 200mg	60	12	4650	95.3%
HIV test confirmation	1	5	2050	87.3%
Ritonavir oral solution, 80mg/ml, 90ml	1	8	742	100%
Abacavir oral solution 20mg/ml, 240ml	1	34	5886	83.2%
Test kit, tri-line HIV rapid test	1	22	2917	100%
Tenofovir tablets 300mg	30	34	105934	67.6%
Lamivudine capsules 300mg	30	3	105934	42.2%
Emtricitabine & Tenofovir 200mg + 300mg	30	20	1380	100%
Didanosine capsules, 400mg	30	3	30	0.8%
Lamivudine tablets, scored, 150mg	60	1	5184	1.0%
Zidovudine capsules, 100mg	100	2	1120	82.1%

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