

IN THE CONSTITUTIONAL COURT OF SOUTH AFRICA

Case CCT 20/12

In the application of:

TREATMENT ACTION CAMPAIGN

First Applicant for admission
as *amicus curiae*

WITS JUSTICE PROJECT

Second Applicant for
admission as *amicus curiae*

CENTRE FOR APPLIED LEGAL STUDIES

Third Applicant for admission
as *amicus curiae*

In re: Application for leave to appeal in the matter between:

DUDLEY LEE

Applicant

and

THE MINISTER OF CORRECTIONAL SERVICES

Respondent

EXPERT AFFIDAVIT OF PROFESSOR ROBIN WOOD

I, the undersigned

ROBIN WOOD

Do hereby make oath and state as follows:

1. In 1986, I registered with the then named South African Medical and Dental Council (now the Health Professions Council) as a medical practitioner and again as a Specialist of Internal Medicine in 1990 and again as a Specialist in Infectious Diseases in 2009. My registration number is MP 282162. I am still so registered.
2. Between 1967 and 1992, I obtained the following degrees and diplomas: Bachelor of Science in Biophysics (1st Class Hons), London University; Bachelor of Medicine and Bachelor of Surgery, Oxford University; Masters in Medicine, University of Cape Town; Diploma of Tropical Medicine & Hygiene, Liverpool University; and Infectious Diseases Fellowship at Stanford University Medical School, CA, USA. I am also a fellow of the College of Physicians (South Africa).
3. Currently, I am a Professor of Medicine at the University of Cape Town (UCT) and the Director of the Desmond Tutu HIV Centre at the Institute of Infectious Disease and Molecular Medicine at UCT.

4. I have worked in the area of TB and HIV infections and have published more than 300 scientific articles. My Curriculum Vitae is attached hereto marked **Annexure RW1**.

5. I am the senior author of the study entitled *Tuberculosis in a South African prison – a transmission modelling analysis* [Johnstone-Robertson *et al* (2011) 101 SAMJ] (“the Pollsmoor study”). The study was undertaken using data from the trial in the Western Cape High Court in this matter. [*Lee v Minister of Correctional Services* 2011 (6) SA 564 (WCC)]. The article is attached hereto as **Annexure RW2**.

6. The Pollsmoor study has been published in the South African Medical Journal (SAMJ), which was established in 1884. The SAMJ conducts peer review, which means that it calls for scrutiny of potential publications by other experts in the field. This Pollsmoor study has been so peer-reviewed. In addition, I can attest that the data that is contained in the Pollsmoor study, and upon which the findings are based, emerge from the record of the hearing before the Western Cape High Court in this matter and are accurately stated.

7. The facts deposed to in this affidavit are true and correct, and save where the context indicates otherwise, are within my personal knowledge. To the extent that I rely on the information received from others, I believe that such information is true and correct. I respectfully submit that I am by my

training and experience duly qualified to express the views and opinions that I express in this affidavit.

8. There are two key aspects to this affidavit:

8.1. That identifying the source of a TB infection is currently impossible;
and

8.2. The introduction of the Pollsmoor study.

THE SCIENTIFIC IMPOSSIBILITY OF PROVING THE SOURCE OF A TB INFECTION

9. Bacteria known as *mycobacteria tuberculosis* cause pulmonary tuberculosis ('TB'). Transmission occurs by the inhalation of the bacteria in droplets of sputum that are carried through the air when expelled from the lungs through breathing, coughing, spitting or sneezing.

10. I am advised that the Supreme Court of Appeal (SCA) cited Mr Lee's inability to identify the "source" of his infection as the reason for his claim being rejected, as shown in this excerpt:

"The difficulty that is faced by Mr Lee is that he does not know the source of his infection. Had he known its source it is possible that he might have

established a causal link between his infection and specific negligent conduct on the part of the prison authorities.” (Judgment, para 64)

11. For these reasons, I use the word “source” as the SCA has used it. The SCA requires that the applicant identify the precise source of his infection and attribute it to specific negligent conduct on the part of the prison authorities in order to establish a causal link.

12. As stated above, TB is caused by bacteria. While the quantity of bacteria to which one is exposed and the length of exposure, among other factors, are relevant to the risk of infection, one single bacterium is capable of causing infection. It would be impossible to determine with certainty whether that bacterium came from any specific individual because tuberculosis is highly prevalent among prisoners at Pollsmoor. I explain why this is the case below.

13. Identifying the source of a TB infection is rendered impossible by a number of limitations.

14. First, while advancements in diagnosis technologies and methods have made it possible, to an extent, to identify certain strains of bacteria, such technologies have remained in the research field and are not routinely used by the South Africa national TB control programme.

15. Furthermore, it is not possible to determine with certainty the precise time and location where infection occurred.
16. Second, approximately 5% of prisoners at Pollsmoor develop active tuberculosis in a year. As there are therefore many potential sources of TB infection, it is not possible to identify the source of the individual bacterium that caused a given infection.
17. One might, given adequate time, resources and cooperation, be able to trace the spread of a strain of TB within a prison. Thus, while one may, provided a number of preconditions, be able to identify the likely individual from which a certain TB infection came, one could never tell with absolute precision the source of the bacterium.
18. Third, TB genotyping, even if it can help to narrow the realm of possible sources of infection in some instances, cannot be used at all in many cases for several reasons, including the limitations of existing diagnosis technologies and methods, practical limitations in being able to test all of the necessary individuals, and the fact that in order to genotype an isolate, a sputum sample containing living bacteria is required.

THE RISK OF TRANSMISSION AND INFECTION

19. The SCA found as follows:

“[I]n the absence of proof that reasonable systemic adequacy would have altogether eliminated the risk of contagion, which would be a hard row to hoe, it cannot be found that but for the systemic omission he probably would not have contracted the disease. On that ground I think that the claim ought to have failed.” (Judgment, paragraph 64; emphasis added)”

20. The Pollsmoor study confirms that the risk of transmission of TB in a prison context can never be wholly eliminated even with the highest international standards.
21. The two main factors that will determine an individual’s risk of transmission through exposure to TB bacteria are the concentration of bacteria in contaminated air and the quantity of contaminated air rebreathed from an infective TB case.
22. The findings of the Pollsmoor study show that conditions prevailing in Pollsmoor Prison are extremely conducive to the ongoing transmission of TB, including drug-resistant TB, and result in exceptionally high annual TB transmission risks of 90% per annum.
23. Crowding, long lock-up times (up to 23 hours per day) and inadequate ventilation result in prisoners rebreathing contaminated air for prolonged periods of time.

24. The failure to identify infectious TB cases entering the prison increases the likelihood of air becoming contaminated by TB bacteria from infective sources.

25. Delays of three to four months in accessing medical care, together with the time required for diagnosis and implementing TB therapy, increase the prevalence of infectious cases and further markedly increase the risk of air contamination with TB bacteria.

26. The Supreme Court of Appeal found that the evidence established that

“to the extent that any system existed at all for the proper management of the disease its application in practice was at best sporadic and in at least some respects effectively non-existent.” (Judgment, para 44)

27. As shown in the Pollsmoor study, implementing current national cell occupancy recommendations alone would reduce transmission probabilities by 30%. Implementation of active case finding together with the implementation of current national cell occupancy recommendations would reduce transmission by 50%. Implementation of active case finding along with international recommendations would reduce transmission by 94%.

DEPONENT

SIGNED and SWORN to before me at _____
on the _____ day of _____ 2012, after the deponent
stated that he is aware of the content of this statement and considers the oath
to be binding on his conscience. I certify that the regulations provided for in
the Government Gazette Notice R. 1258 of 21 July 1972, as amended and
Government Notice No. R 1648 of 17 August 1977, as amended having been
complied with.

COMMISSIONER OF OATHS