

USAf Open Call for Impact Case Studies

Title of the Impact Case Study: Transforming Equitable Access to Liver Transplantation in South Africa: The Wits Model of Academic Innovation, Partnership and Public Benefit

Submitting University: University of the Witwatersrand, Johannesburg, South Africa

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Summary of the impact

Over the past two decades, the University of the Witwatersrand has expanded equitable access to liver transplantation in South Africa through an academic health-system model centred on the Wits Donald Gordon Medical Centre (WDGMC), South Africa's first not-for-profit private academic teaching hospital. The programme was built to address profound inequities in access to highly specialised care, including limited national transplant capacity, shortages of deceased donor organs, exclusionary HIV-related practice, and the absence of locally generated evidence for transplantation in African populations.

The central societal impact is that Wits converted liver transplantation from a scarce, largely private-sector specialist service into a research-led, ethically governed and more equitable national and regional referral programme. Since the programme was re-established in 2004, programme records supplied by the Wits Transplant Unit/WDGMC confirm 1,000 liver transplants, including 637 adult and 363 paediatric procedures. Through the public-private partnership, 183 public-sector patients, including 125 children, have received life-saving transplantation that would otherwise have been largely inaccessible. Public Wits reporting independently confirms the programme has performed over 1,000 liver transplants and that WDGMC houses South Africa's largest transplant unit.

Wits' contribution is not only the number of procedures. The programme established South Africa's first living-donor liver transplant programme, pioneered the world's first intentional living-donor liver transplant from an HIV-positive donor to an HIV-negative recipient, contributed to evidence-based Southern African guidelines for solid-organ transplantation involving people living with HIV, established the African Liver Tissue Biorepository Consortium, and embedded annual clinical audits as a mechanism for transparent evaluation and continuous improvement.

Underpinning academic work: Medical and Health Sciences

The impact is grounded in Medical and Health Sciences research, clinical scholarship, specialist training, bioethics and health-system innovation at Wits and WDGMC. The programme deliberately embedded transplantation within an academic, not-for-profit teaching-hospital platform, allowing clinical care, research, education and governance to reinforce one another. This academic model has enabled multidisciplinary expertise across transplant surgery, anaesthesiology, intensive care, adult and paediatric hepatology, nutrition, transplantation immunology, infectious diseases, radiology, pharmacogenomics and bioethics.

Research and programme development focused on the barriers most relevant to South Africa and the region: organ scarcity, donor safety, blood-group incompatibility, HIV-related uncertainty, limited deceased donation, precision immunosuppression and the need for benchmarked outcome data. Wits teams developed and evaluated living-donor, split-liver, ABO-incompatible and emergency transplant approaches; generated evidence on HIV-positive donors and recipients; contributed to solid-organ transplantation guidelines for people living with HIV; and investigated pharmacogenomic variation in tacrolimus metabolism among people of African ancestry. These academic outputs were translated directly into clinical protocols, ethical decision-making and patient access.

A defining feature of the Wits model is that evaluation is embedded in routine clinical governance. The programme conducts morbidity and mortality review, prospective monitoring and published adult and paediatric liver transplant audits. The Wits Transplant Unit Annual Report 2022 in the South African Medical Journal documents annual reporting of activity, survival and clinical outcomes, while earlier peer-reviewed work reported adult liver transplantation in Johannesburg from 2004 to 2016 and reflected on balancing good outcomes with constrained resources and limited donors.

Narrative description of the impact

End-stage liver disease is frequently fatal without transplantation. In South Africa, access has historically been constrained by scarce donor organs, limited specialist capacity, high costs, uneven public-private access and uncertainty about transplantation for people living with HIV. The Wits programme responded by creating a sustainable academic health-system platform that could expand access while maintaining ethical governance and clinical quality.

The programme was re-established in 2004 by Professors Russell Britz, Ernest Song and Christina Lundgren, followed by the return of internationally trained transplant surgeon Professor Jean Botha to South Africa. It subsequently developed into a national referral service for South Africa and a regional referral service for patients from Botswana, Namibia, Zimbabwe, Mozambique, Mauritius and Kenya. Current and recent academic leadership and research contributors include Professor Jerome Loveland, Dr June Fabian, Professor Jean Botha, Dr Harriet Etheredge, Dr Francesca Conradie and the broader WDGMC transplant, hepatology, ethics and research teams.

The societal benefit lies in four connected changes. First, patients who previously had little practical access to highly specialised transplantation, including public-sector children, have received life-saving care. Second, research-led innovations expanded the donor pool and made transplantation possible in cases that had previously been excluded or considered too complex. Third, Wits evidence helped shift clinical practice regarding HIV and transplantation, replacing exclusion with evidence-based assessment and governance. Fourth, the programme created a specialist training and research platform that strengthens South African and African transplant capacity rather than relying only on external models.

The programme also demonstrates how public benefit can be generated through an institutional model. Philanthropy, university ownership, public-private partnership and reinvestment in research and training have been combined to create a high-complexity service with public-sector reach. This is significant in a middle-income setting where advanced care is often available only to those able to pay privately.

Reach and significance of the impact

Reach	Significance
1,000 liver transplants since 2004, including 637 adult and 363 paediatric procedures.	Demonstrates sustained life-saving clinical impact over two decades and confirms that the programme is not a pilot or short-term intervention.
183 public-sector patients received transplants, including 125 children.	Shows equity impact by extending highly specialised care to patients who would otherwise have had limited access.
National and regional referral footprint, including patients from South Africa and countries such as Botswana, Namibia, Zimbabwe, Mozambique, Mauritius and Kenya.	Positions Wits as a regional academic health-system asset serving needs beyond a single hospital or province.
Living-donor, split-liver, ABO-incompatible and emergency transplant capability, including 131 emergency liver transplants, 45 for malignancy and 28 combined liver-kidney transplants.	Expands treatment options for complex patients and reduces dependence on scarce deceased donor organs.
World-first intentional HIV-positive living-donor to HIV-negative recipient transplant and Southern African HIV transplant guideline contribution.	Changed the boundaries of ethical and clinical practice and supported more inclusive evidence-based transplantation for people living with HIV.
Published annual audits and peer-reviewed research outputs.	Creates transparency, supports continuous quality improvement and provides evidence that clinical innovation is governed by academic accountability.

Evidence and sources to corroborate the impact

- Programme data supplied by the Wits Transplant Unit/WDGMC confirm the exact cumulative breakdown: 1,000 liver transplants since 2004, including 637 adult and 363 paediatric procedures, and 183 public-sector patients, including 125 children. These figures should be accompanied by an internal data extract or sign-off letter from the programme.

- Wits University, 'First-of-its-kind liver perfusion tech could expand transplant possibilities' (2026), confirms that WDGMC has performed over 1,000 liver transplants and houses South Africa's largest transplant unit.
- Wessels EU, Kinandu K, Beretta M, et al. 'Wits Transplant Unit Annual Report 2022: adult and paediatric liver transplantation.' South African Medical Journal. 2024;114(3b):e1365.
- Song E, Fabian J, Boshoff PE, et al. 'Adult liver transplantation in Johannesburg, South Africa (2004-2016): balancing good outcomes, constrained resources and limited donors.' South African Medical Journal. 2018;108(11):929-936.
- Botha J, Conradie F, Etheredge H, Fabian J, Duncan M, Mazanderani AH, et al. 'Living donor liver transplant from an HIV-positive mother to her HIV-negative child: opening up new therapeutic options.' AIDS. 2018;32(16):F13-F19.
- Nel JS, Conradie F, Botha J, Etheredge H, Fabian J, Levin L, et al. 'Southern African HIV Clinicians Society guidelines for solid organ transplantation in human immunodeficiency virus.' Southern African Journal of HIV Medicine. 2020;21(1):1133.
- Tager S, Etheredge HR, Fabian J, Botha JF. 'Reimagining liver transplantation in South Africa: A model for justice, equity and capacity building - the Wits Donald Gordon Medical Centre experience.' South African Medical Journal. 2019;109(2):84-88.
- <https://www.wits.ac.za/news/latest-news/in-their-own-words/2018/2018-10/hivlivertransplant-making-the-tough-call.html>
- <https://bhekisisa.org/article/2018-10-04-sa-first-to-transplant-organ-from-living-hiv-positive-donor-to-hiv-negative-person/>

Any other information considered relevant

The case contributes directly to SDG 3 (Good Health and Well-being), SDG 10 (Reduced Inequalities) and SDG 17 (Partnerships for the Goals). Its distinguishing contribution is the combination of equitable access, academic governance, African clinical evidence, public-private partnership and specialist capacity-building in a field where treatment is life-saving and resource intensive.

Signed off on behalf of the University by:

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