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Health, population and social transitions in rural South Africa

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It is now 13 years since the political liberation of South Africa – a rollercoaster period through which citizens of the "rainbow nation" have struggled to live up, individually and as a people, to the ideals articulated by visionaries that include Nobel laureates Nelson Mandela and Desmond Tutu. The country's near-miraculous peaceful transition from *apartheid* rule to genuine democracy inspired the world community, providing a springboard for President Thabo Mbeki to launch continent-wide initiatives, pre-eminently the New Partnership for Africa's Development (NEPAD).

In parallel with such inspirational efforts has been the difficult, down-to-earth business of building a competent system of government and establishing a stable macro-economic and social environment responsive to the nation's citizenry, especially the poor and vulnerable. The *apartheid* legacy of inadequate education and high unemployment, poverty and extreme inequality, and exaggerated emphasis on that which divides rather than unites people, is proving deeply embedded in the fabric of modern South Africa – more so perhaps than national leadership appreciated.

In such circumstances, there is no substitute for informed leadership and astute decision-making that takes the long- as well as short-term view. This in turn depends – as Adetokunbo Lucas put it – on generating the necessary "intelligence": information that is valid, responds to strategic priorities and captures change over time. While progress has been made – with the efforts of the Medical Research Council, Statistics South Africa, Human Sciences Research Council and key university-linked groups[a] standing out – we submit that South Africa today faces a real "crisis of evidence". This is reflected in the limited availability of empirically-derived population-based data, weak investments to support their production, and limited public sector capacity to absorb, sift, interpret and respond to findings.[b] The situation has been fuelled by the counter-scientific stance that, until recently, characterised government's response to HIV/AIDS.

This volume – comprising some 20 peer-reviewed articles and accompanying commentaries – is part of an effort to address this gap in information and understanding. Work demonstrates the unusual utility of health and demographic surveillance when characterising the dramatic transitions underway in South Africa today, and the exceptional R&D platform that such infrastructure can provide. The study site is part of a district barely 25 miles west of the southern Mozambique border, this rendering it part of north-eastern South Africa[c] and

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[a]The KwaZulu-Natal Study on Income Dynamics (KIDS) and Africa Centre Demographic Information System (ACDIS) of the University of KwaZulu-Natal, and Centre for Actuarial Research (CARe) and Cape Area Panel Study (CAPS) of the University of Cape Town for example

[b]The recent decision by the Presidency to establish a national panel study focused on household income and expenditure must be acknowledged

[c]The politically motivated assignment of Bushbuckridge (including Agincourt sub-district) to Limpopo Province in 1994 was unpopular with local people and provoked a long-running boundary dispute. In 2006 this decision was reversed with the area, covering some 2500 square kilometers, being finally incorporated into the adjacent Mpumalanga Province. This will explain an apparent inconsistency in the articles, which refer to either one of the provinces when describing the geographic location of work.

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integral to a cross-border region of rural Southern Africa – thereby amplifying the relevance and applicability of data and findings.

Illustrative findings

As frequently discussed in the collection, the past several years bear witness to the accelerating momentum of the HIV/AIDS epidemic. Figure 1 shows the dismaying change in life expectancy experienced by study communities over the past decade, markedly influencing their expectations and aspirations [1].

Despite this reality, emerging evidence for a non-communicable and, particularly, cardiovascular disease transition – with older women seemingly at more immediate risk – is compelling [2,3]. This renders rural South Africa not only the site of a tangible and complex burden of illness, with heavy social and economic consequences, but also an advanced reflection of the pattern now evolving across much of sub-Saharan Africa.

While there is clear overlap and interaction between the rapid health, population and social transitions underway, how this occurs and with what effects is little understood and hard to predict. Work in this volume highlights the health impact of changes in the social environment, a consequence, in part, of growing numbers of rural women joining the migrant labour force [4], coupled with the average number of children borne to women of reproductive-age falling to well below three [5]. Many women delay bearing a second child until around 30 years old, suggesting changes to more traditional patterns of union and gender relations [6]. Members of households that include a female pensioner appear better nourished and significantly more likely to ensure that girl-children attend school [7]; more broadly, older women are taking on rapidly expanding roles in child care, children's schooling and family and general household support [8] – a critical response to the still deadly impact of HIV/AIDS on parents. While clearly taking strain, social support systems remain intact and vitally important to individual and community wellbeing [9,10].

Lifestyle, dietary and occupational change among adults – reinforced by temporary labour migration still at pre-1994 levels in men and steadily increasing among women – is fostering an epidemic of high blood pressure, obesity and stroke [11]; this notwithstanding, the capacity of primary care systems to manage chronic illness is seriously limited [12]. Perversely, food security among poorer households remains precarious, reflected in persisting child malnutrition along with widespread stunting [13], and dependence on natural resources culled from the local environment [14].

These references simply underline the far-reaching transitions that characterise rural South Africa today – and, to a greater or lesser degree, settings elsewhere in the region. They lend relevance and urgency to the work described, underlining the imperative to build an evidence base that can inform strategy, guide policy and support effective targeting and evaluation of programmes.

Agincourt: the road ahead

Continued nurturing of stable and respectful relationships with village communities is integral to the sustained effort needed in order to strengthen the longitudinal, socio-demographic data platform that underpins the Agincourt sub-district. The capacity of research leadership, management and local field staff has grown remarkably with time. Evolving in parallel with such scientific and technical maturation is the confidence to extend the programme of work and exploit its potential to step-up research training, particularly at doctoral level.

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The coming research cycle will see a growing portfolio of intervention-evaluations and policy assessments, intended to complement and balance the existing work, and deploying a range of observational and experimental study designs. Research aims to tackle stages of the life course from birth through adolescence to adulthood and the older age-groups, an approach which articulates effectively with a focus on "transitions" while being responsive to the high HIV prevalences pervasive in rural South Africa.

Increasingly, multi-site work will be a feature involving sister INDEPTH[e] sites in southern and sub-Saharan Africa[f] and Asia, as well as other cohorts such as the Birth-to-Twenty study in urban Soweto. Findings will address the health sector and other sectors such as education, the environment and local economy. A first-wave of collaborative and comparative initiatives is underway, covering African mortality trends, adult health and aging, and migration and urbanisation. We expect this to realise new and important datasets and will work with our partners to render these accessible to the wider scientific community.

The Agincourt research and development effort, in its entirety, has the potential to serve as an active demonstration initiative for the adjoining provinces – Mpumalanga and Limpopo – as well as for national government departments, the Ministry of Health in the first instance. This form of reciprocal engagement will be vigorously pursued, building on earlier experience demonstrating decentralised (district-based) health systems development [15]. While clearly dependant on interest and capacity within government, an important criterion will be Agincourt scientists' ability to adapt methods, tools and applications from ongoing work to public sector systems and programmes.

Such public sector endeavour is a corollary to initiatives underway in the University of the Witwatersrand where the Agincourt research and training effort is fostering the development of a university-wide programme in "Populations, Health and Society". This has generated great interest across schools and faculties, reflected in innovative academic developments and interdisciplinary research, both of which are tapping into new sources of funding.

Critical to fulfilling the promise inherent in this volume is the ability of Agincourt scientific leadership, working with our close research partners within and without South Africa and supported by the University and Medical Research Council, to articulate the essential questions confronting poor rural communities in South Africa and the region; pursue the translation of findings into better health and wellbeing of individuals and communities; and exploit an exceptional research infrastructure to advance training of the next generation of African health and population scientists. We hope the collection demonstrates that interdisciplinary work and triangulation of methods, cohesively applied, brings richness to knowledge.

Acknowledgments

Strengthening and sustaining the Agincourt health and demographic surveillance platform, conducting the diverse studies it supports, and translating findings into policy and practice, relies heavily on the participation of key stakeholders. We acknowledge with pleasure the pivotal contributions of community leaders, study communities, and district and provincial managers particularly in health, but also in other government departments. National and international scientific partners have contributed inspiration, rigour and ongoing friendship; the School of Public Health, Faculty of Health Sciences, University of the Witwatersrand, continues to provide an exemplary support base.

[e]INDEPTH: International Network for the Demographic Evaluation of Populations and Their Health

[f]We have included an article from the University of Limpopo's Dikgale site because of the pivotal contribution of Agincourt to its start-up, and the ongoing close association between the two sites.

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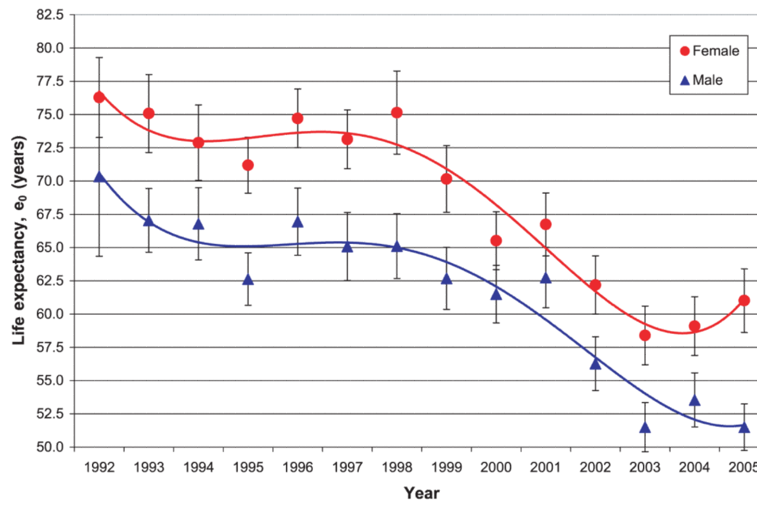

Figure 1.
Trend in expectation of life at birth (e_0), Agincourt, South Africa 1992–2005.[d]

[d]Figure produced by Samuel Clark