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NO. 16

Johannesburg and its epidemics: Can we learn from history?

NOVEMBER 2020
Author: Philip Harrison

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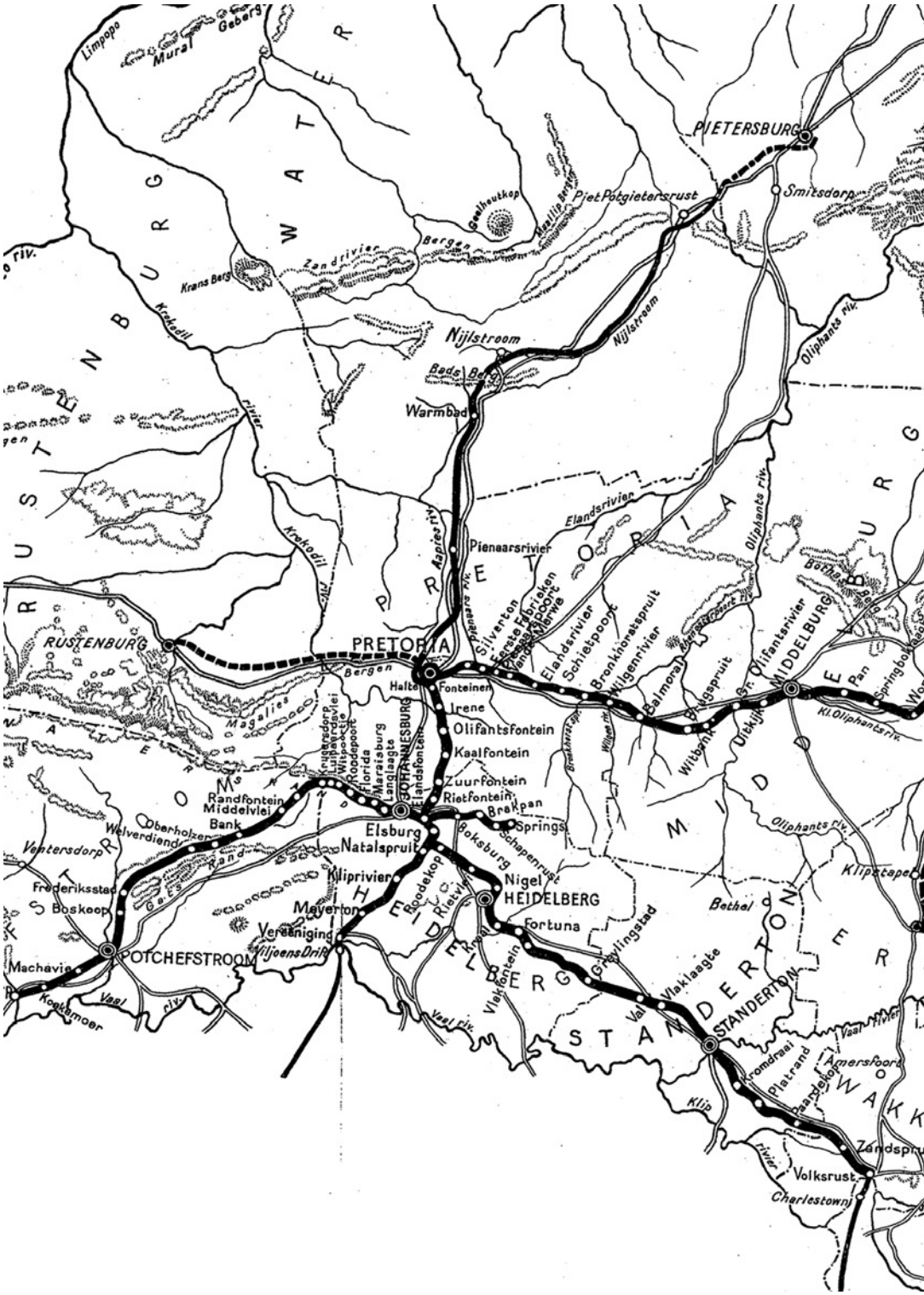
Map of the Cape Colony, Orange Free State and South African Republic, 1900

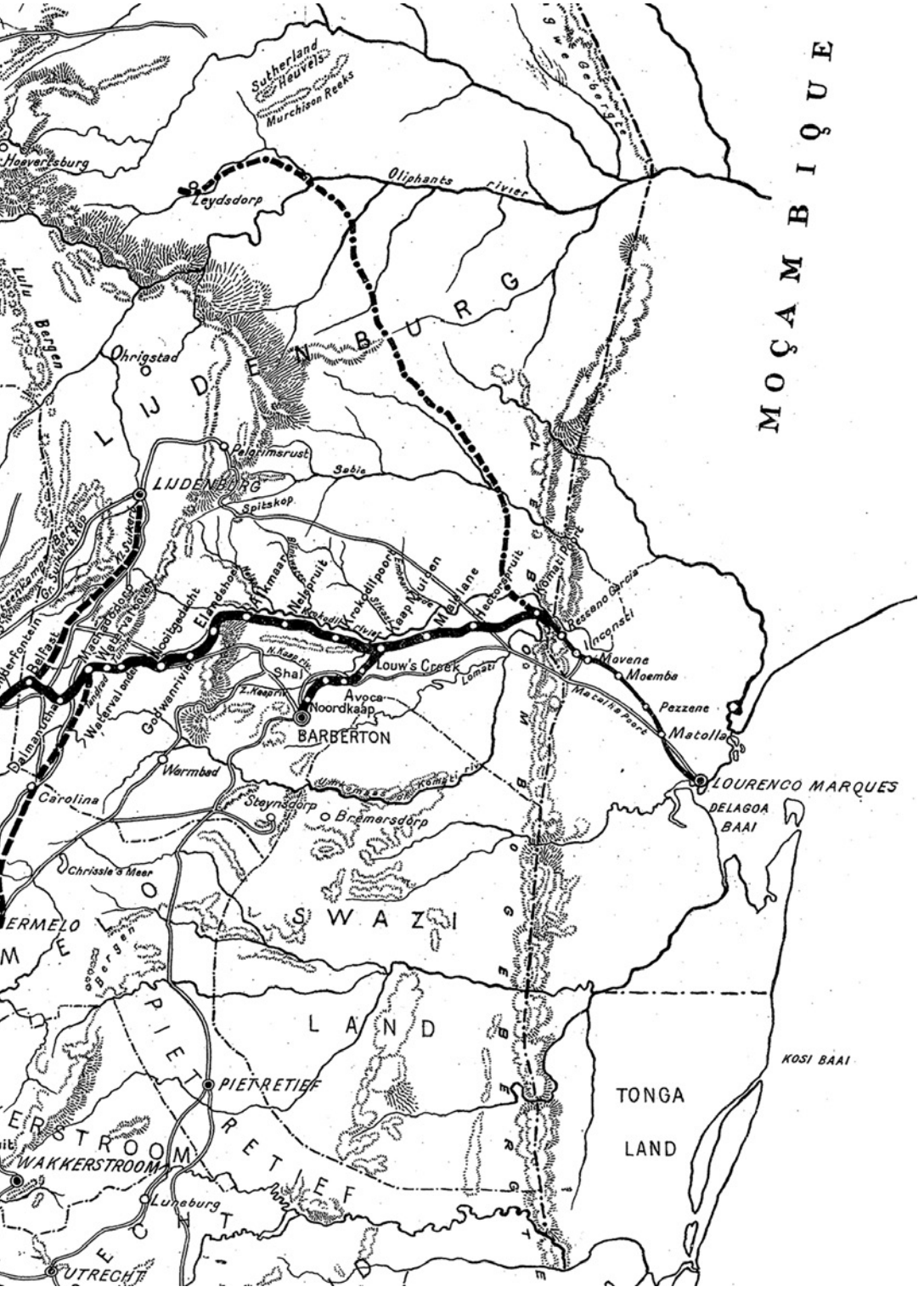
SOURCE: *Bacon's new large-scale map of South Africa* (London: W.G. Bacon), from the Map Collection of the Africana Library of the University of the Witwatersrand Library


SOUTH AFRICAN REPUBLIC
ZULULAND
NATAL
Blenga Land
Quilimane
INDIAN OCEAN
CAPE TOWN

Map of the Witwatersrand. Nederlandsche Zuid-Afrikaansche Spoorwegmaatschappij, 1899

SOURCE: *In memoriam N.Z.A.S.M.* Amsterdam: J.H. de Busy. Map downloaded from the UPSpace Institutional Repository, University of Pretoria: https://repository.up.ac.za/handle/2263/21920




MOÇAMBIQUE
LIJDENBURG
Sutherland Heuvels
Murchison Reeks
Hoogeberge
Hoevertsburg
Leydsdorp
Oliphants river
Lulu Bergen
Ohrigstad
Pilgrimsrust
Sabie
LIJDENBURG
Spitskop
Elandshoek
Krokodilpoort
Kaap Muiden
Matlane
Komati Poort
Reserve Garde
Incomati
Movene
Moemba
Louw's Creek
Shal
Avoca
Noordkaap
BARBERTON
Matolla
LOURENCO MARQUES
DELAGOA BAAI
Wermbed
Carolina
Steynsdorp
Bremersdorp
Chrissie's Meer
SWAZI
LAND
PIETRETIEF
KOSI BAAI
TONGA
LAND
WAKKERSTROOM
Luneburg
UTRECHT

Map of Johannesburg, 1897

SOURCE: From the Map Collection of the Africana Library of the University of the Witwatersrand Library


HOUGHTON ESTATE
YEOVILLE
BELLEVUE
BEREA
TOWNSHIP
HILLBROW
DOORNFONTEIN
NEW DOORNFONTEIN
TROYVILLE
BERTRAMS TOWN
FLORENTEVILLE
JOHANNESBURG
MARSHALLS TOWN
CITY AND SUBURBAN TOWNSHIP
JEPPES TOWN
TOWNSHIP
WOLHUTER
MAIN REEF
VILLAGE MAIN REEF
WEMMER G M Co
SALISBURG G M Co
JUBILEE G M Co
CITY & SUBURBAN G M Co
MEYER & CHARLTON G M Co
WOLHUTER G M Co
COMMISSIONER STREET
MARKET SQUARE
POPULATION 1896.
Europeans . . . 50,907
Malays 952
Indians & Chinese 4,807
Kafir Tribes . . 42,533
Mixed 2,879
Total 102,078
TOTAL GOLD PRODUCTION OF WITWATERSRAND.
Year. Oz. Dwts.
1887 . . . . 23,135 8
1888 . . . . 206,121 14
1889 . . . . 369,557 5
42,000 Estimated
1890 . . . . 494,817 0
1891 . . . . 729,268 6
1892 . . . . 1,310,868 16
1893 . . . . 1,478,477 3
1894 . . . . 2,024,163 12
1895 . . . . 2,277,640 4
1896 . . . . 2,280,892 4
Total 11,133,931 12
1897
January . . . 209,832 1
February . . 211,000 13
March 232,066 19
April 235,698 19
Total 888,598 12
DISTANCES FROM JOHANNESBURG BY RAIL.
To Pretoria . . 47 Miles. To East London . 665 Miles.
" Delagoa Bay 398 " " Port Elizabeth 714 "
" Durban . . 480 " " Cape Town . . 1014 "
Note.—Circles drawn every ½ mile from Market Square.
Tram Lines shown in Red.
Compiled By
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Photograph by **Alon Skuy/*Sunday Times***

Executive summary

Executive summary

This historical account of the epidemics that have struck Johannesburg during its 134-year history is written with the burden of the present. On 31 December 2019, the World Health Organization (WHO) reported a cluster of pneumonia cases in Wuhan, China, and shortly afterwards confirmed that a previously unknown coronavirus was the cause. The disease was labelled Coronavirus Disease 2019 (Covid-19) and spread globally in the early months of 2020.

The first case in South Africa was confirmed in Hilton, KwaZulu-Natal, on 1 March 2020, and on 15 March the President of South Africa declared a national state of disaster. Two days later, the National Coronavirus Command Council was established to coordinate a national response to the pandemic, and a national lockdown, with severe restrictions on economic activity and movement, began on 26 March. At first, South Africa was spared the worst of the pandemic, but then a surge arrived from late June.

Nationally, the pandemic peaked in mid to late July with a peak of over 13 000 new confirmed cases daily, and South Africa ranking fifth globally in terms of the number of cases after the United States (US), Brazil, Russia and India. Although the wave had passed by 14 September, with fewer than 1 000 daily cases nationally, South Africa had accumulated a total of 650 749 confirmed cases and was still ranking eighth globally.

The first case in Gauteng province, and in Johannesburg, was recorded on 7 March, but the epidemic took time to seed. The Western Cape province emerged as the epicentre of the pandemic in South Africa, but this changed in early July as the surge reached Gauteng. By 22 July, there were nearly 137 000 cases in Gauteng, or 37% of the national total, with over 59 000 in Johannesburg, which had emerged as one of the world's major hubs of infection. By 14 September, Gauteng had accumulated 215 140 confirmed cases, and Johannesburg 86 285. More positively, death rates across all scales in South Africa were lower than for many other countries. Nationally, the death rate of 261 per million people in South Africa compares, for example, with 621 for Brazil, 613 for the United Kingdom (UK), and 600 for the US. At the time of writing (mid-July 2020), we simply do not know what course the Covid-19 pandemic will take in South Africa, and in Johannesburg. Covid-19 is of course not the first pandemic or epidemic to batter Johannesburg, and the question arises as to whether there are meaningful lessons for the present from the historical episodes. This paper provides an account of the following epidemics using the online materials available for research during the lockdown period, March to July 2020, including existing literatures such as student dissertations, reports and journal articles, and the media archive, of which the *Rand Daily Mail* is most extensive:

- Smallpox epidemic of 1893;
- Measles epidemics in the South African War internment camps (1901–02);
- Pneumonic plague of 1904;
- Influenza pandemic of 1918/19;
- Poliomyelitis (polio) epidemics of 1918, 1944/45, 1948, 1955 and 1957;
- Scarlet fever epidemics of 1917/18, 1928, 1931, 1934 and 1941;
- HIV/Aids, which reached pandemic proportions by the early 1990s (and has continued to the present); and
- The 'minor' epidemics, including the 'Russian flu' of 1889/90, influenza in 1957 and listeriosis in 2018.

History cannot of course tell us what will happen with Covid-19; each epidemic has a different epidemiology and has happened in very different temporal contexts, with immense variation in terms of population, society, politics, medical knowledge, and more. Nevertheless, there could be some clues from history

which may relate to issues of geography, settlement type, mobility, and degrees of immunity or viral resistance within the population. The knowledge drawn from history must, however, be deployed judiciously and in relation to the current science. Even so, there are critical themes cutting across historical episodes that may usefully shape our attention in the current moment.

Drawing from existing literatures and from the empirical detail of prior epidemics, this paper suggests six themes to consider in an analysis of history and of current circumstances:

1. The idiosyncratic course of epidemics and therefore the need for both close monitoring of developments and high levels of agility in governance response;
2. The ways in which epidemics are associated with social scapegoating, stigmatising and pathologising, and the need therefore for strong, progressive leadership to counter this;
3. The effects of epidemics on the economy, and especially on the livelihoods of the most vulnerable segments of the population;
4. The effects of epidemics on the spatial forms and infrastructures of the city, including through the opportunistic use of epidemics to pursue prior spatial agendas;
5. The ways in which epidemics have been governed, with the strengths and drawbacks of the various approaches, including more nationally or more locally centred governance arrangements; and
6. The ways in which epidemics have impacted on governance forms into the future, including on institutional forms, legislation and urban policy.

The stories of each epidemic are related in turn in the paper, but to bring them into a comparative perspective, including in relation to Covid-19, there are two tables below. The first provides key information on each epidemic while the second highlights the features of each epidemic in relation to the six themes indicated above.

Figure 1: Unemployment Insurance Fund applicants queue at the Department of Labour in Randburg to get financial relief during the Covid-19 pandemic, 9 September 2020

Photograph by Alaister Russell/*Sunday Times*

Table 1: Key features of Johannesburg's epidemics

	Smallpox	Measles	Plague	Influenza	Polio	Scarlet fever	HIV/Aids	*Covid-19*
Historical event	January to June 1883	Severe spikes in internment camps in 1902/03	A long delay in arrival from ports with a sharp spike in March 1904	Three waves of infection with the deadliest in October 1918	Summer-month epidemics in 1918, 1944/45, 1948, 1955 and 1957	Outbreaks in 1917/18, 1928, 1931, 1934 and 1941	Decades long, late 1980s till present	*Isolated cases from early March 2020, surge from late June, with 86 285 confirmed cases in Johannesburg by 14 September*
Severity	Mild in JHB* but 3 000 deaths along the Witwatersrand. About 3% of population	609 children died in Turffontein camp. 40% mortality rate for measles	Low morbidity (161 cases) but very high mortality (80%)	Widespread but mild in JHB with 2 284 deaths (8.81 per 1 000)	JHB as epicentre. Death rates dropping from 24% of cases in 1918 to 4% in late 1940s	High number of cases with mortality rates per outbreak ranging between 1% and 4.3%	Up to 16% of pop. infected shift from fatal to chronic. Possibly more than 300 000 deaths in JHB	*In comparative terms, a high number of cases in JHB but death rates low*
Most affected group	Highest death rates among non-vaccinated Africans	Boer children in camps	Indian community (mainly male)	Widespread but disproportionate effect on poor communities, and also on 20–40 year olds	Mainly white children until 1940s	Mainly white children	Black African with females most at risk	*Widespread, but elderly population and those with co-morbidities at greatest risk*
Ending of epidemic	Locally produced vaccines	Improved camp management and hygiene (and end of war)	Strict containment and vector control	Possible 'herd immunity' (vaccines only from 1930s)	Vaccines from late 1950s (also season changes)	Antibiotics from 1940s (also season changes)	Antiretrovirals enable disease management	*Unknown at the time of writing (hopes of a vaccine)*

* Johannesburg

Table 2: Key themes across Johannesburg's epidemics

	Smallpox	Measles	Plague	Influenza	Polio	Scarlet fever	HIV/Aids	*Covid-19*
Idiosyncratic course of epidemic	The surprising mildness of the epidemic	The extreme death rates in the camps	The long delay in reaching JHB and quick containment	The mildness of the pandemic in JHB relative to other areas, and high deaths in 20–40 year-old category	The disproportionate effect on white children	The apparent immunity of black Africans	The extremely high levels in international terms and large spatial variation in South Africa	*Unusual spatial patterns, e.g. Western Cape as initial surge and then Gauteng. Also, apparently low death rates in official numbers*
Scapegoating	Migrants	'Uneducated' Boers	Asians	Slum dwellers and poor people	Africans (despite mainly intra-white transmission)	Not known	Gays, migrants, African people, isiZulu speakers	*Some initial ethnic and geographic; widespread community ostracism of Covid-positive individuals*
Effects on economy and livelihoods	Delay in recovery from a downturn in mining	Costs of interning a civilian population and severe loss of livelihood	Effect on local fiscus and severe loss of livelihood for relocated population	Full extent not recorded but known effects on low-grade mines with workforce disruption	Limited as no direct effect on working-age population	Limited as no direct effect on working-age population	Some workforce disruption, health system costs and a disproportionate livelihood effect on marginal households	*Severe economic impact expected (projected minus 6% GDP change; surge in unemployment; business closures)*
Imprints on the spatial forms and infrastructures of the city	Creation of isolation and other health infrastructure	Temporary use of race course as internment camp	Relocation camp the embryo of Soweto; forerunner to apartheid city	Slum clearance and housing programmes and further impetus to segregation	Similar but lesser effects to the influenza pandemic	Possibly also a reaction to slums	Intensified socio–spatial inequality	*A political and public reaction against high densities; decanting of informal settlements to temporary camps*
Governance of the epidemic	Nationally appointed local smallpox committee	Military regime	Local public health authority and plague committee	Coordination by local public health authority	Mainly local health authorities but a greater provincial role from the 1940s (especially around school closures)	Mainly local health authorities but a greater provincial role from the 1940s (especially around school closures)	National government was the key player in terms of policy and resources but some local implementation	*National coordination of policy and regulation through a national disaster management system, but provincial and local implementation*
Impact on future governance	Cooperation between national and local was short-lived	Improved camp management	Strengthened racial segregation	Created greater urgency for national health and housing legislation	Similar but lesser effect to the influenza pandemic	Not clear	Multi-actor partnerships and reactivation of civil society	*Possible strengthening of national government regulatory will and capacity, and of hierarchical arrangements*

Photograph by **Antonio Muchave/*Sowetan***

Introduction

Introduction

The Covid-19 pandemic has radically shifted the attention of policy-related and scholarly work. It is hardly possible to write of cities and local government now without considering the immense challenge of the public health crisis, and of the social and economic consequences that follow.

The crisis has revealed a partial blind spot in previous work. While public health was not completely ignored in international and local literatures, it was rarely a major theme. There are nevertheless important exceptions, and the work of individuals who anticipated the current crisis merits acknowledgement and appreciation. Keil and Ali's work in the wake of an outbreak of Severe Acute Respiratory Syndrome (SARS) in Toronto in 2003 is a vital example of this kind of prescience.[1] They warned that:

> Urban governance may soon have to be more centrally concerned with questions of widespread disease, life and death and the construction of new internal boundaries and regulations just at the time that globalization seems to suggest the breakdown of some traditional scalar incisions such as national boundaries.[2]

They explained it is the globalism of cities that allowed for the rapid transmission of the virus, but that there are a series of 'sub-realities' within the 'larger global network of relationships', which shape the nature of public health threats and make local action important.[3]

Mike Davis, better known to urbanists as the author of a book on global slums, produced a predictive book in 2005, *The Monster at Our Door,* warning that a global pandemic was imminent.[4]

More recent contributions respond to the SARS, Middle East Respiratory Syndrome (MERS), H1N1 and Zika pandemics of recent decades, and deal with themes including the geography of the epidemics and urban governance. Füller wrote, for example, of 'pandemic cities' in the context of the SARS outbreak in Hong Kong, showing the complex effects the pandemic had on governance in that city state.[5] He explained that while the pandemic reinforced the importance of transnational collaborations, there were also subtle impacts on city governance, including new forms of collaboration within the city administration, such as through data sharing arrangements. In the wake of the 2009 H1N1 pandemic in New York, Hoffman wrote how the crisis 'foregrounded existing tensions between federal initiatives and state and locality control',[6] and shifted the nature of intergovernmental relations.

This work follows the historical literature on earlier epidemics and pandemics. There is, for example, substantial literature on the cholera epidemics in Great Britain in the 19th century, and their significance in shaping both public health reforms and the rise of municipal government.[7] There is also postcolonial literature on how these public reforms spread globally through colonial rule and intersected with local understandings of, and response to, disease, with a strong focus here on the experience of 19th-century India, which was battered by epidemics of smallpox, cholera and plague.[8] The influenza pandemic of 1918/19 also produced a significant literature. There are now many accounts of

1 Keil, R. and H. Ali. (2007) 'Governing the Sick City: Urban Governance in the Age of Emerging Infectious Disease'. *Antipode*. 39(5). pp.846–873.
2 Ibid., p.847.
3 Ibid., p.850.
4 Davis, M. (2005) *The Monster at Our Door: The Global Threat of Avian Flu*. New Press: New York.
5 Fuller, H. (2016) 'Pandemic Cities: Biopolitical Effects of Changing Infection Control in Post-SARS Hong Kong'. *The Geographical Journal*. 182(4). pp.342–352.
6 Hoffman, L. (2013) 'The Return of the City-State: Urban Governance and the New York City H1N1 pandemic'. *Sociology of Health and Illness*. 35(2). pp.255–267. [p.259].
7 For example: Briggs, A. (1961) 'Cholera and Society in the Nineteenth Century'. *Past and Present*. 19. pp.76–96; Cherry, G. (1988) *Cities and Plans: The Shaping of Urban Britain in the Nineteenth and Twentieth Centuries*. Edward Arnold: London.
8 For example: Arnold, D. (1993) *Colonizing the Body: State Medicine and Epidemic Disease and Nineteenth-Century India*. University of California Press: Berkeley.

Figure 2: The reception area of the first General Hospital on Hospital Hill in Johannesburg, early 1900s
SOURCE: With permission, Museum Africa

the pandemic at a global and national scale,[9] but there are still few accounts that provide the texture of what happened within individual localities, including cities. The exceptions here include accounts of the 'three months of horror in Philadelphia' where the virus erupted in September 1918 after a city parade;[10] Lagos, where the response of the colonial authorities was slow and ineffective;[11] London, where local boroughs battled the epidemic in the absence of effective metropolitan or national support;[12] and New York, where there was an effective public health response and relatively low mortality rates.[13]

In South Africa, there was a thread of work on public health connecting with the long-dominant discussion on urban segregation. Swanson referred to the 'sanitation syndrome' of colonial society, arguing that the outbreak of bubonic plague in the Cape Colony between 1900 and 1904 was a major impetus for segregationist moves to create segregated townships.[14] Parnell wrote of how public health and town planning legislation was used in the early decades of the 20th century to support a privileged white working class. Her focus was in fact on Johannesburg, where the British administration in the Transvaal after the South African War (1899–1902) recruited talented young men from Great Britain to lead the post-war reconstruction drive. This included a Medical Officer of Health, Dr Charles Porter, who set up a formidable public health department within the Johannesburg municipality, but who also championed racial segregation as a means to managing urbanisation and protecting

9 There are many examples, including: Foley, C. (2011) *The Last Irish Plague: The Great Flu Epidemic in Ireland 1918–19*. Irish Academic Press: Dublin; Rice, G. and E. Palmer. (1993) 'Pandemic Influenza in Japan, 1918–19: Mortality Patterns and Official Responses'. *Journal of Japanese Studies*. 19(2). pp.389–420; Chowell, G., Simonsen, L., Flores, J., Miller, M.A. and C. Viboud. (2014) 'Death Patterns during the 1918 Influenza Pandemic in Chile'. *Emerging Infectious Diseases*. 20(11). pp.1803–1811.

10 Stetler, C. (2017) 'The 1918 Spanish Influenza: Three Months of Horror in Philadelphia'. *Pennsylvania History: A Journal of Mid-Atlantic Studies*. 84(4). pp.462–487.

11 Oluwasegun, J.M. (2017) 'Managing Epidemic: The British Approach to 1918–1919 Influenza in Lagos'. *Journal of Asian and African Studies*. 52(4). pp.412–424.

12 Tanner, A. (2002) 'The Spanish Lady Comes to London: The Influenza Pandemic 1918–1919'. *The London Journal*. 27(2). pp.51–76.

13 Aimone, F. (2010) 'The 1918 Influenza Epidemic in New York City: A Review of the Public Health Response'. *Public Health Reports*. 125(3). pp.71–79.

14 Swanson, M. (1977) 'The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony, 1900–1909'. *Journal of African History*. 18(3). pp.387–410.

white communities.[15] Mabin and Smit recognised the relationship between public health and urban reform in the early 20th century, in their account of the rise of modern town planning in South Africa.[16]

Howard Phillip's work warrants special mention. He has written extensively on the influenza pandemic of 1918/19 in South Africa,[17] with important contributions to the study of the pandemic internationally,[18] but he has also written of how the Bloemfontein Town Council introduced a series of urban reforms and housing initiatives after the town was struck by a particularly virulent outbreak of influenza in 1918.[19] Similarly, Elizabeth van Heyningen has written extensively on public health in South Africa with a focus on Cape Town.[20]

The largest body of literature on an epidemic or pandemic in South Africa, by far, is focused on HIV/Aids. The literature is expansive and multi-disciplinary, and cannot be reviewed here, but there is a small subset of the literature that links to urban studies. Much of the literature on the geography of HIV/Aids deals with its transmission through migrant networks,[21] but there is also a significant literature that explores the urban dimensions of HIV/Aids, relating, for example, to informal settlements, inner-city locations, urban livelihoods, intra-urban inequality, service delivery, housing and local governance.[22]

In addition to the literature on HIV/Aids in South Africa, there are several other city- or place-related contributions: smallpox in 18th-century Cape Town[23] and 19th-century Kimberley;[24] bubonic plague and smallpox in Cape Town in 1901;[25] typhoid in Bloemfontein during the South African War;[26] 19th-century typhoid on Koffiefontein mine in the Free State;[27] the 1918 influenza epidemic in Cape Town;[28] pneumonic plague in Johannesburg

15 Parnell, S. (1993) 'Creating Racial Privilege: The Origins of South African Public Health and Town Planning Legislation'. *Journal of Southern African Studies*. 19(3). pp.471–488.

16 Mabin, A. and D. Smit. (1997) 'Reconstructing South Africa's Cities? The Making of Urban Planning 1900–2000'. *Planning Perspectives*. 12(2). pp.193–223.

17 Phillips, H. (1984) 'Black October: The Impact of the Spanish Influenza Epidemic of 1918 on South Africa'. Doctoral thesis, University of Cape Town. [Online]. Available at: file:///C:/Users/09400060/Downloads/thesis_hum_1984_phillips_h%20(1).pdf. [Accessed: 10 March 2020]; Phillips, H. (1988) 'South Africa's Worst Demographic Disaster: The Spanish Influenza Epidemic of 1918'. *South African Historical Journal*. 20(1). pp.57–73; Phillips, H. (2012) *Plague, Pox and Pandemics*. Jacana: Johannesburg.

18 Phillips, H. (2014) 'The Recent Wave of "Spanish" Flu Historiography'. *Social History of Medicine*. 27(4). pp.789–808; Phillips, H. and D. Killingray. (eds.) (2001) *The Spanish Influenza Pandemic of 1918–1919: New Perspectives*. Routledge: London and New York; Phillips, H. (2004) 'The Re-appearing Shadow of 1918: Trends in the Historiography of the 1918–19 Influenza Pandemic'. *Methods and Issues/Problematiques et methodes*. 21(1). pp.121–134.

19 Phillips, H. (1987) 'The Local State and Public Health Reform in South Africa: Bloemfontein and the Consequences of the Spanish Flu Epidemic of 1918'. *Journal of Southern African Studies*. 13(2). pp.210–233.

20 Van Heyningen, E. (1990) 'Epidemics and Disease: Historical Writing on Health in South Africa'. *South African Historical Journal*. 23(1). pp.122–133; Van Heyningen, E. (1985) 'Public Health in Cape Town, 1880–1902'. Paper delivered at 10th Biennial National Conference of the South African Historical Society.

21 For a review, see: Crush, J., Williams, B., Gouws, E. and M. Lurie. (2005) 'Migration and HIV/AIDS in South Africa'. *Development Southern Africa*. 22(3). pp.293–318.

22 See, for example: Vearey, J., Richter, M., Núñez, L. and K. Moyo. (2011) 'South African HIV/AIDS Programming Overlooks Migration, Urban Livelihoods, and Informal Workplaces'. *African Journal of AIDS Research*. 10(sup1). pp.381–391; Vearey, J., Palmary, I., Thomas, L., Nunez, L. and S. Drinnie. (2010) 'Urban Health in Johannesburg: The Importance of Place in Understanding Intra-Urban Inequalities in a Context of Migration and HIV'. *Health and Place*. 16. pp.694–702; Thomas, E. (2003) HIV/Aids: Implications for Local Government, Housing and Delivery of Services. In Tomlinson, R., Beauregard, R., Bremner, L. and X. Mangcu (eds.). *Emerging Johannesburg: Perspectives from the Post-Apartheid City*. Routledge: London and New York. pp.185–196; Kelly, K. and M. van Donk. (2009) Local-Level Responses to HIV/AIDS in South Africa. In Rohleder, P., Swartz, L., Kalichman, S. and L. Simbayi (eds.). *HIV/AIDS in South Africa 25 Years On*. Springer: New York.

23 Viljoen, R. (1995) 'Disease and Society: VOC Cape Town, Its People and the Smallpox Epidemics of 1713, 1755 and 1767'. *African Historical Review*. 27(1). pp.22–45.

24 Viljoen, R. (2003) '"Smallpox War" on the Kimberley Diamond Fields during the 1880s'. *Kleio*. 35(1). pp.5–18.

25 White, A. (2018) 'Global Risks, Divergent Pandemics: Contrasting Responses to Bubonic Plague and Smallpox in 1901 Cape Town'. *Social Science History*. 42(1). pp.135–158.

26 Steere-Williams, J. (2018) Bloeming-Typhoidtein: Epidemic Jingoism and the Typhoid Corpse in South Africa. In Lynteris, C. and N. Evans (eds.). *Histories of Post-Mortem Contagion: Infectious Corpses and Contested Burials (*Medicine and Biomedical Sciences in Modern History book series). Palgrave Macmillan: Cham.

27 L'Abbe, E. (2003) 'Uncovering a Nineteenth-Century Typhoid Epidemic at the Koffiefontein Mine, South Africa'. *World Archaeology*. 35(2). pp.306–318.

28 Phillips, H. (1979) Black October: Cape Town and the Spanish Influenza Epidemic of 1918. In Saunders, C.C. (ed.). *Studies in the History of Cape Town*. Centre for African Studies, University of Cape Town: Cape Town. pp.88–106.

Figure 3: A cluster of Covid-19 cases detected among returning workers at Impala Platinum's Marula Mine in Limpopo doubled the number of positive cases overnight, showing how crippling regional cross-contamination can be, 20 May 2020

SOURCE: With permission, Impala Platinum

in 1904;[29] the poliomyelitis (polio) epidemics in Johannesburg in 1918 and 1945;[30] and a comparison of death rates among miners during the 1918/19 influenza epidemic between Kimberley and the Witwatersrand.[31]

This paper is informed by the existing body of work on epidemics internationally and in South Africa. Its focus is, however, on Johannesburg, within the wider context of a region that includes Pretoria and the Witwatersrand, showing how epidemics and pandemics developed locally through the city's roughly 130-year history. The paper is written from the burden of the present, but it does not deal specifically with the current pandemic. It rather asks the question of whether we can learn from history and, if so, what insights we may meaningfully draw from the past into our current difficult context.

This paper has a methodological limitation. It was written during South Africa's tight Covid-19 nationwide lockdown, and so could only draw on material available online. Fortunately, apart from published books and articles, the University of the Witwatersrand's database includes access to African media through much of the lifespan of Johannesburg. Particularly important are the online archives of the *Rand Daily Mail* (1902–85). Regretfully, however, I have not had access to materials in hard copy, including minutes of the Johannesburg City Council, reports of the Johannesburg Medical Officer of Health, and reports of government commissions.

It is important to acknowledge that the *Rand Daily Mail* was a newspaper targeted largely at the English-speaking elite of Johannesburg. In this sense, it must be used critically and with cognisance of the

29 Evans, C.M., Egan, J.R. and I. Hall. (2018) 'Pneumonic Plague in Johannesburg, South Africa, 1904'. *Emerging Infectious Diseases*. 24(1). pp.95–102.

30 Wade, M. (2006) 'Straws in the Wind: Early Epidemics of Poliomyelitis in Johannesburg, 1918–1945'. Master's thesis, University of South Africa. [Online]. Available at: http://uir.unisa.ac.za/bitstream/handle/10500/1518/dissertation.pdf?sequence=1&isAllowed=y. [Accessed: 2 September 2020]. [p.iii]; Wade, M. and N. Southey. (2013) 'Poliomyelitis Epidemic in Johannesburg in 1918: Medical and Public Responses'. *South African Historical Review*. 45(2). pp.80–112.

31 Shanks, G., Bundage, J. and J. Frean. (2010) 'Why Did Many More Diamond Miners than Gold Miners Die in South Africa during the 1918 Influenza Pandemic?' *Int. Health*. 2(1). pp.47–51.

interests and concerns of the other groups in the city. Although the English-language newspapers have dominated the media landscape in Johannesburg, there are other media sources, although not all were equally available during the lockdown. *Umteleli wa Bantu*, for example, was a newspaper published between 1920 and 1956, targeted at the black African elite (the 'petty bourgeoisie') in Johannesburg, although only two years of copy (1920–22) was available in the African Newspaper Archives.

Perhaps because of the disproportionate impact of the influenza pandemic on the black African community, there were extensive discussions on the science of epidemics in this newspaper in the early 1920s.[32] The approach was one of scientific rationalism against superstitions and ignorance, as indicated in a 1921 editorial: 'There are many Natives who fear God but know nothing of the science of sanitation.'[33] While paternalistic towards rural Africans and newly arrived migrants in the towns and cities, and focusing on individual responsibility, this newspaper was nevertheless strident in insisting on a more authoritative and scientific approach from government, and for giving more attention to conditions in African areas. It was, for example, highly critical of the Public Health Act, 1919, considering it a weak instrument for regulating the health environment.[34]

Umteleli wa Bantu is a potentially important source of future information on the attitudes of Johannesburg's black elite on matters including public health and governance. The work of Dr A.B. Xuma, President of the African National Congress (ANC) in the early 1940s, is a further important source on the black elite that requires attention. He had been exposed to thinking on public health and epidemics during his medical training in Edinburgh and Chicago and engaged the black elite in Johannesburg and city authorities on these matters.[35]

The Johannesburg-based left-wing *The International* has archival material online for the period 1915 to 1924, which included the time of the influenza epidemic, but it was more concerned at the time with the aftermath of the Great October Socialist Revolution in Russia of 1917. As it reported in November 1918, 'Bolshevism, like "the flu" crops up in unexpected places.'[36]

This paper begins by contextualising early Johannesburg, focusing on the institutional environment, and then moves successively through the epidemics and pandemics that have struck this city through its history:

- 'Russian flu' of 1889–90;
- Smallpox outbreak of 1893;
- Measles epidemics in the internment camps (1901–02);
- Pneumonic plague (1904);
- Influenza pandemic of 1918/19;
- Polio epidemics of 1918, 1944/45 and 1948;
- Scarlet fever epidemics of 1917/18, 1928, 1931, 1934 and 1941;
- The 'minor' epidemics, including those of influenza in 1957 and listeriosis in 2018; and
- HIV/Aids, which reached pandemic proportions by the early 1990s (and has continued to the present).

It concludes with a brief reflection on the lessons that could be brought forward into thinking about the management of the current pandemic. The conclusion argues that lessons of history need to be translated cautiously across temporal contexts, but that history does direct us to certain themes, including: the unpredictable course of most epidemics (i.e. the constant surprises they throw in our path); the huge variability in the spatial patterning of epidemics; the significance of governance across all scales in shaping the course of epidemics, but also the effect of epidemics on shaping the continued evolution of governance; the economic and social consequences of epidemics; the political consequences, and more.

32 For example: *Umteleli wa Bantu*, 26 February 1921, p.2, and 14 October 1922, p.2.

33 Ibid.

34 Ibid.

35 See, for example: Xuma, A.B., The Socio-Economic Aspects of Native Health. Wits Historical Papers, AD843. [Online]. Available at: http://www.historicalpapers.wits.ac.za/inventories/inv_pdfo/AD843/AD843-N8-17-001-jpeg.pdf. [Accessed: 2 September 2020].

36 *The International*, 8 November 1918, p.2.

Figure 4: Rinderpest outbreak in South Africa, 1896
SOURCE: Photograph in the public domain

The terminology used in the paper is mainly of 'epidemics', which refers to a spread of an infectious disease to many people over a contained period (although I include HIV/Aids, which has a longer time range than the other cases because it emerged without a prior infection history). With their time containment, epidemics are different from an endemic disease such as tuberculosis, which has historically been a major killer in Johannesburg. The focus on epidemics in this report is not intended in any sense to reduce the significance of the endemic diseases which have had enormous impacts on the city. In some cases, mainly endemic diseases (such as measles, poliomyelitis and scarlet fever) have taken an epidemic form and so have been included in this paper. There have been a few instances when epidemics in Johannesburg have been part of global pandemics, and so the terms 'epidemic' and 'pandemic' may be used interchangeably for these cases. The references here are to the influenza pandemic of 1918/19, the HIV/Aids pandemic from the 1980s and the Covid-19 pandemic of 2020.

At the other end of the scale are localised outbreaks of infection, and the boundary between outbreaks and epidemics may be contested. This contribution focuses only on infectious diseases which directly affect human beings in epidemic form. It is important to note, however, that in Johannesburg's early years, infectious diseases afflicting animals had a serious impact on humans. In 1896/97, 50 to 90% of cattle in the Southern African interior were destroyed by the rinderpest ('the Great Cattle Plague'), causing serious meat shortages. Fortunately, however, the railway links from the ports to Johannesburg had been completed by then and this, together with the introduction of cold storage, helped avert a possible famine.[37]

37 Cripps, E. (2012) 'Provisioning Johannesburg, 1886–1906'. Master's thesis, University of South Africa, Pretoria. [Online]. Available at: http://uir.unisa.ac.za/bitstream/handle/10500/5966/thesis_cripps_e.pdf?sequence=1. [Accessed: 2 September 2020].

Photograph by **Alaister Russell/*Sunday Times***

Early Johannesburg

Early Johannesburg

Johannesburg had a curious origin. It was founded in 1886 as a mining camp on the Witwatersrand, a high-lying region in the Southern African interior. It was controlled politically by the globally isolated, Boer-led *Zuid Afrikaansche Republiek* (ZAR),[38] but the discovery of gold connected the Witwatersrand very quickly with a European-dominated global economy. It provided the European financial system, which was then based on a gold standard, with the liquidity it urgently needed following the decline of gold production in California and Australia. As the gold was deep-level and expensive to mine, the industry was dominated by a handful of large companies listed on the London Stock Exchange, and financed through British and German banking operations. The rapidly growing mining settlement attracted migrants from across the world but especially from Great Britain, parts of continental Europe, the Pale of Settlement in the Russian Empire,[39] Australia, California and India (via the-then Natal). The unskilled and semi-skilled labour was mainly in the form of black Africans, who were recruited from across Southern Africa, and, for about a decade at the beginning of the 20th century, by indentured Chinese labour.

Despite its physical location, Johannesburg soon connected to the global mobility network dominated at the time by steamships and railways.[40] The first train arrived from Cape Town in 1892, with a link to Lourenço Marques (now Maputo) established in 1894, and to Durban in 1896. This connectivity was critical for Johannesburg's economic function, but it also made the rapidly growing settlement vulnerable to the diseases that were circulating globally along shipping routes and railway networks, including influenza, measles, smallpox, and the bubonic and pneumonic plagues.

Johannesburg could not escape the spread of epidemics, but it did have some advantage with its inland location. In general, epidemics arrived later in Johannesburg than in places like Cape Town, Port Elizabeth, Durban and Lourenço Marques, and this gave authorities more time to prepare. There is also some speculation that, by the time a virus arrived in Johannesburg, it had mutated into a milder form, or that the local health authorities may have been more effective than elsewhere.

Under the Boer administration, which ended when the British Army occupied Johannesburg in May 1901, there was a rudimentary system of local government and of public health. In general, when local services were required, the Pretoria-based government of the ZAR issued concessions to private companies and, by 1889, there were concessions for water, gas, electricity and tramways.[41]

The ZAR maintained its authority over mining by the appointment of key government officers who exercised executive authority, including a *landrost* (magistrate), a Mining Commissioner and a District Surgeon. In December 1887, a Sanitary Board was constituted, chaired by the Mining Commissioner, with the other members appointed by the ZAR government. In 1889, the ZAR government conceded some form of local democracy in the town, allowing resident white males to elect 12 of the 15 members of the Sanitary Board.[42]

38 The Boers were descendants of the 17th-century (mainly) Dutch settlers in the Cape, who had migrated into the interior in the early 19th century to escape British rule.

39 The Pale of Settlement was where the Jewish population of the Russian Empire was forced to live, and included Lithuania, Latvia and the Ukraine. With the pogroms of the late 19th century, many Jewish families emigrated, including to South Africa.

40 Van Heyningen, E. (1989) 'Public Health and Society in Cape Town, 1880–1910'. Doctoral thesis, University of Cape Town.

41 Mäki, H. and J. Haarhoff. (2009) 'Municipal Engineers in Johannesburg and Pretoria before 1910'. *The Journal for Transdisciplinary Research in Southern Africa*. 5(2). pp.230–247.

42 Appelgryn, M.S. (1985) *Johannesburg: Origins and Early Management, 1886–1899*. University of South Africa: Pretoria.

However, local politics soon became entangled in the bitter dispute between the ZAR and the British government. Most white residents of the Witwatersrand were *uitlanders*, or recent migrants, with the majority having come from some part of the British Empire. They were soon numerically dominant in the ZAR, and the extension of full voting rights to *uitlanders* would have meant that the Boers would have lost control of the ZAR to the British. President Kruger bitterly resisted enfranchising the *uitlanders*, including at local level, but under immense pressure from the British government was compelled to extend voting rights incrementally. Tensions were high, and levels of trust between the Boer administration in Pretoria and the *uitlander*-dominated Witwatersrand were extremely low, especially after the notorious Jameson Raid in December 1895, in which the Cape Prime Minister, and arch imperialist, Cecil John Rhodes, attempted to forcefully overthrow the ZAR government.[43]

In 1897, despite concerted opposition from the *Volksraad* (ZAR parliament), the President finally conceded the right of an elected Town Council for Johannesburg, although the *Burgomeester* (Mayor) was government appointed. This ostensibly assured a higher level of local responsiveness, although the local government was primarily confined to building and maintaining roads in the town, ensuring sanitary conditions and regulating the construction of new buildings .

The Sanitary Board, and subsequently the Town Council, battled to ensure sanitary conditions in the growing town. Problems included the disposal of wastewater (the 'slops') on the streets, the accumulation of garbage and carrion on the outskirts of the town, rat infestations, polluted water sources and the lack of a sewerage system. Conditions in the town were poor, and typhoid and other dysentery diseases were endemic. Regulations were put in place to control disposal of wastewater and animal carcasses, but enforcement was difficult. In 1894, the Sanitary Board instructed the newly appointed Town Engineer to draw up plans for a sewerage system, but in 1898, the ZAR government intervened in an unsuccessful attempt to create a concession for sewerage, against local advice.[44]

The ZAR went to war with Great Britain in October 1899, and most functions of local government, including the planned installation of a sewerage system, were disrupted. Johannesburg entered a new era under British administration when the town fell to Lord Roberts. At first there was a military administration in Johannesburg with appointed members, but an elected Town Council was introduced in December 1903.[45]

The colonial administration moved quickly to capacitate the Town Council with a municipal structure closely modelled on British municipalism. The British influence was especially clear in the area of public health, from which municipal governance had emerged in Great Britain through the 19th century. As early as 1848, there had been provision for municipalities (then termed Health Authorities) in Britain to appoint Medical Officers of Health, but this was made obligatory in the Public Health Act, 1872. The Medical Officers of Health were powerful officials at the time (although their influence gradually declined in the 20th century with the rise of Town Clerks and Town Engineers).[46]

After the war, Lord Milner, the Governor of the Transvaal, recruited skilled professionals for key positions from Great Britain, including Charles Porter as the Medical Officer of Health. Porter organised an efficient public health department; worked with the Town Engineer to construct the sewerage system; put in place mechanisms for refuse and waste disposal; and closed unprotected wells. The public health department also closely monitored outbreaks of disease in the town. It was, however, a highly racialised system that had the protection of the white community as its key objective. The sewerage system was, for example, never extended to the Indian Location and the Malay Location, areas with overcrowding and deteriorating conditions that were earmarked for

43 Ibid.
44 Mäki and Haarhoff, 2009.
45 Ibid.
46 Welshman, J. (1997) 'The Medical Officer of Health in England and Wales, 1900–1974: Watchdog or Lapdog?' *Journal of Public Health*. 19(4). pp.443–450.

Figure 5: Commissioner Street, Johannesburg, circa 1899
SOURCE: British Library, Mechanical Curator collection, via Flickr Commons

demolition by the Insanitary Area Improvement Commission.[47]

The town had grown rapidly and pressures on services and the environment were expanding. The 1890 census indicated that the town had a population of 26 303 people, but the 1896 census indicated 102 078 inhabitants. There was an exodus of residents during the war, although there was a large internment camp for Boer women and children on the town's racecourse. By the 1910 census, however, there were 214 620 inhabitants, with Johannesburg arguably an emerging city, although it took until 1928 for city status to be conferred.

Apart from the expanding population within the town limits of Johannesburg, there were other local authorities along the Witwatersrand (such as Krugersdorp, Germiston, Benoni and Boksburg), and large concentrations of mineworkers living in closely controlled compounds on land owned by mining companies. The coordination of public health interventions was to prove a challenge across municipal boundaries, but the real issue in relation

47 Zangel, V. (2004) '"The Seething Masses": Housing, Water and Sanitation in the Lives of Johannesburg's Poor 1886–1906'. Master's thesis, North-West University, Potchefstroom; Kagan, N. (1978) 'African Settlement in the Johannesburg Area, 1903–1923'. Master's thesis, University of the Witwatersrand, Johannesburg. [Online]. Available at: https://core.ac.uk/download/pdf/39676058.pdf. [Accessed: 20 May 2020].

Figure 6: The streets of Hillbrow on the second day of the nationwide lockdown, 28 March 2020
Photograph by Alaister Russell/*Sunday Times*

to public health on the Witwatersrand was in the mine compounds. The health of mineworkers was in fact an ongoing crisis, with Jeeves pointing out that 93 000 African miners died of disease between 1900 and 1930 (in addition to the 15 000 who were killed in work-related accidents).[48] This calculates to 10 miners dying of disease a day, and an overall death rate of 72.47 per 1 000 workers. Most miners died of endemic problems, such as tuberculosis, silicosis, influenza, typhus, meningitis or dysentery.[49] With their confined living conditions, mineworkers were also vulnerable to the periodic epidemics that struck the Witwatersrand.

We turn now to each of the epidemics and pandemics, from the time of Johannesburg's founding until the current time.

48 Jeeves, A. (1983) 'Over-Reach: The South African Gold Mines and the Struggle for the Labour of Zambesia, 1890–1920'. *Canadian Journal of African Studies/La Revue canadienne des études africaines*. 17(3). pp.393–412; Smith, M. (1993) '"Working in the Grave": The Development of a Health and Safety System on the Witwatersrand Gold Mines, 1900–1939'. Master's thesis, Rhodes University, Grahamstown; Packard, R. (1989) *White Plague, Black Labor: Tuberculosis and the Political Economy of Health*. University of California Press: Berkeley.

49 Some problems, such as dysentery, were resolved as potable water supplies were secured, but others remained endemic. Typhus was a common problem until the 1930s, when adequate sewerage and drainage systems were in place, with authorities commonly containing the disease by throwing a cordon around affected areas. See Jeeves, 1983.

Photograph by **Sebabatso Mosamo/*Sunday Times***

Johannesburg's epidemics and pandemics

Johannesburg's epidemics and pandemics

A prelude: The 'Russian flu' of 1889–90

Johannesburg was barely three years old when the 'Russian flu' (an H3N8 virus) spread from its origins in Bukhara in Central Asia in May 1889, along steamship routes, causing over one million deaths worldwide. By mid-December 1889, the flu reached Durban and media reports suggest that it reached Johannesburg approximately one month later.[50] It did not seem to have affected South Africa, or Johannesburg, seriously, although we do not have adequate information to confirm this; but exposure to the Russian flu may explain why older people demonstrated greater immunity to the 1918 influenza than young adults did.[51] There is little information on how the authorities managed the outbreak, if at all, in the mining town, but 1889 was the year in which an emergency management department was set up in Johannesburg and, in 1890, the town's first permanent hospital was opened.

First major epidemic: The smallpox outbreak of 1893

Smallpox had a devastating history in South Africa, nearly wiping out the indigenous population in the Cape in the 17th and 18th centuries. By the early 19th century, vaccination had helped contain the threat; but vaccination was not universal and there were still serious local outbreaks, which arrived periodically in South Africa along British maritime networks.[52] In 1840, for example, at least 12% of Cape Town's population died of the outbreak, largely because of resistance to the vaccine from conservative communities. In 1882–83, there was a severe outbreak on the Kimberley diamond fields.[53]

Over time, the Cape Colony strengthened its response to smallpox, introducing legislation in 1856 to deal with outbreaks. After the Kimberley outbreak, Cape Town and Kimberley appointed Medical Officers of Health, and Kimberley introduced a Board of Health. At the municipal level, Cape Town amalgamated smaller authorities into its jurisdiction to enable a more coordinated response to outbreaks.[54]

When smallpox arrived on the Witwatersrand in 1893, Johannesburg was a bustling town of perhaps 60 000 residents, although it was still recovering from its first major economic downturn. The epidemic of 1893 erupted into a context of mistrust, with Kruger's Pretoria-based central government opposed to the *uitlande*r-dominated Witwatersrand, with its powerful mining magnates and financiers. Health infrastructure was rudimentary, but the ZAR government had appointed a District Surgeon and, through the Mining Commissioner, had recruited a Mines Health Officer. There was

50 *Friend of the Free State*. 29 January 1890. p.6.
51 Worobey, M., Han, G. and A. Rambaut. (2014) 'Genesis and Pathogenesis of the 1918 Pandemic H1N1 Influenza A Virus'. *Proceedings of the National Academy of Sciences of the United States of America*. 111(22). pp.8107–8112.
52 Phillips, 2012.
53 Ibid.
54 Ibid.

Figure 7: A ward in Johannesburg Hospital in the early 1900s
SOURCE: Photograph in public domain

also a *Gezondheits Comite* (Health Committee) of government officials and local citizens.

The first known case of smallpox in Johannesburg was confirmed on 26 January 1893, when a recently arrived English immigrant presented symptoms, and was immediately isolated in a well-guarded tent on Hospital Hill (in present-day Hillbrow). It was later claimed, however, that the outbreak came from Portuguese East Africa via recruited mine labour.[55]

The Health Committee met in an emergency session on 30 January 1893, but it was clear that it lacked the authority to establish and enforce regulations.[56] President Kruger then proclaimed special smallpox regulations, giving the Mining Commissioner special executive powers as Chair of a Smallpox Committee, with jurisdiction over the entire Witwatersrand. Apart from the Chair, the Committee consisted of the Assistant *Landdrost*, the Chair of the local Health Committee, the District Surgeon and the Mines Health Officer. However, the real authority on the Witwatersrand was mining financier and President of the Chamber of Mines, Lionel Phillips, and despite his poor relationship with President Kruger, he was needed to give the Committee local legitimacy, and so was recruited into its membership.[57]

Although the ZAR government had acted quickly in setting up the Committee, it did not provide further support, arguing that the Committee could draw on resources from the mining industry. This was in spite of an initial agreement that the

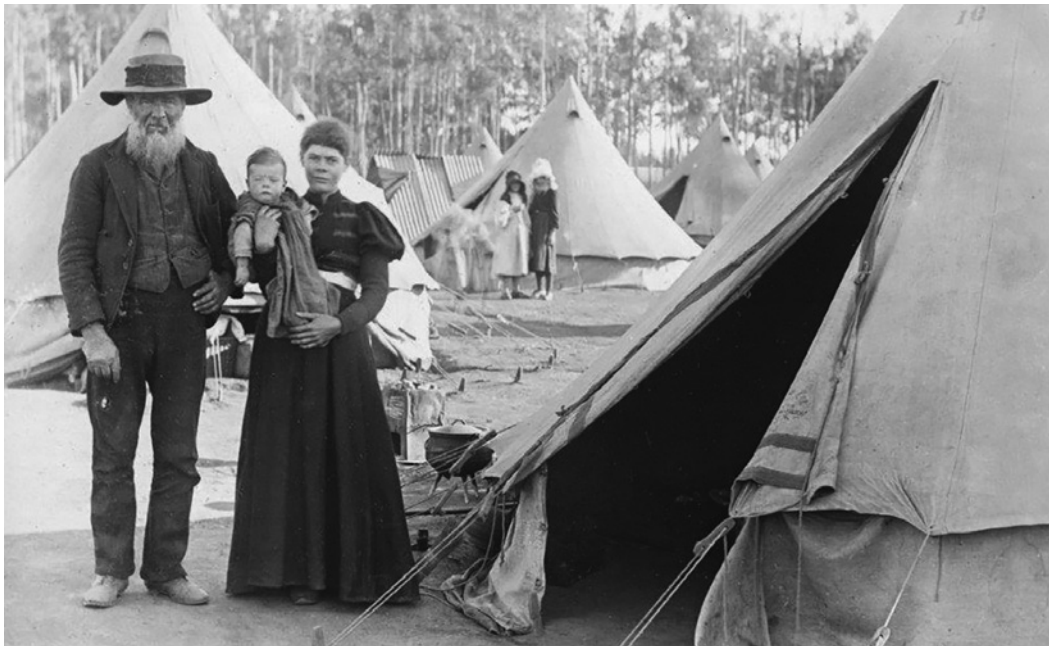
55 *Rand Daily Mail*. 12 August 1912. p.7.

56 The Committee faced sceptical reactions from local society, with doubts that this was an outbreak of smallpox. However, matters were taken more seriously when a valet to the visiting dignitary, Lord Algernon Gordon-Lennox, contracted smallpox on 17 February at a fashionable hotel, forcing Lord and Lady Gordon-Lennox into quarantine.

57 Charles van Onselen referred to Phillips as, 'in effect, the Minister of Finance of a small, exceptionally profitable, industrial island in a feudal sea in a time of unprecedented wealth creation'. Kruger did not like Phillips, and Phillips was in fact covertly funding an anti-Kruger faction of Boers. See: Van Onselen, C. (2017) *The Cowboy Capitalist: John Hays Hammond, the American West, and the Jameson Raid*. Jonathan Ball: Jeppestown. [p.132].

Figure 8: Turffontein internment camp, 1901

SOURCE: With permission, Photographical Collection Anglo-Boer War Museum, Bloemfontein



ZAR would provide the Committee with £5 550, mainly to pay guards to protect the tents on Hospital Hill, where suspected cases were isolated. Members of the Committee went to Pretoria on 1 March to meet government officials, but returned empty-handed as the State Secretary, Dr Leyds, refused to advance an urgently required £2 500.[58]

However, as the outbreak worsened, there were fears in government that the disease would spread to Pretoria. When the Committee sent a second deputation to Pretoria on 19 May, it was given £5 000 to continue its work and new regulations were gazetted on 29 May, making vaccination compulsory (although, initially, for black Africans only). Three *lazarettos* (isolation facilities) were established around Johannesburg at Hospital Hill, Geldenhuys Estate (Bedfordview) and Luipaardsvlei (Krugersdorp) and a makeshift laboratory was set up under the direction of Swiss-born Dr Arnold Theiler to produce the vaccine locally.

This epidemic was eventually brought under control and the outbreak was mild in relation to previous smallpox epidemics in South Africa, but there were, nevertheless, around 3 000 deaths along the Witwatersrand. There were also significant variations in death rates across race and between those who were and were not vaccinated: for the vaccinated, mortality rates ranged from 0.2% for whites to 8% for black Africans but, for the unvaccinated, mortality ranged from 8% for whites to 23% for black Africans.[59]

This was the last major smallpox epidemic on the Witwatersrand, although there was a small outbreak in 1912, with 48 reported cases among the coloured and Malay communities. With the 1893 epidemic still in living memory, Johannesburg's

58 Gutsche, T. (1979) *There Was a Man: The Life and Times of Sir Arnold Theiler, K.C.M.G., of Onderstepoort*. [Online]. Available at: https://repository.up.ac.za/bitstream/handle/2263/50502/005_ch5.pdf?sequence=5&isAllowed=y. [Accessed: 20 May 2020].

59 *Rand Daily Mail*. 12 August 1912. p.7.

health department acted quickly, with mass vaccinations and active tracing and isolation of infected individuals.[60] In 1926, there was an outbreak in Ferreirasdorp (a.k.a. Ferreirastown) and Fordsburg, raising calls again for the destruction of Johannesburg's slums:

> Attacks on Johannesburg's slum areas and demands that they be eradicated, were made at last evening's meeting of the Johannesburg Town Council. Councillors declared the slums were a disgrace to any town, and a menace to health and that only the energetic efforts of the Medical Officer of Health saved the situation during epidemics.[61]

There was another outbreak in 1938, but again the rollout of vaccinations ensured containment.[62]

Measles epidemics in the internment camps (1901–02)[63]

During the South African War (1899–1902), from 1901, the British brought around 115 000 Boer sympathisers, families and workers into the internment camps.[64] There were 45 camps nationally for Boer internees (mainly women and children), and 64 for black Africans. Around 48 000 people died of disease in the camps, which included around one-half of the children who were interned. As Shanks et al. put it, 'the camps were intended to serve a military purpose, but became a humanitarian disaster'.[65] The deaths were almost all attributable to either active or benign neglect, and when management improved as the camps came under international scrutiny, conditions improved. For British apologists, however, it was Boer and African ignorance of hygiene and medical care that was responsible for the deaths.[66] As a result of improved management, the death rates, which were around 344 per 1 000 per annum at the end of October 1901, declined to 69 per 1 000 by the end of February 1902.[67] The camps, which were eventually closed in 1903, were to have a potent impact on South Africa's political evolution. Although deaths in African camps were largely ignored, the 'shared national tragedy' of deaths in the Boer camps was to become symbolically critical in the rise of Afrikaner nationalism.[68]

There were deaths from multiple causes – diphtheria, whooping cough, dysentery and typhoid fever – but it was measles that came in epidemic form, and was the real killer among children. There was a history of periodic measles outbreaks in South Africa, with the most severe around mission stations in the Cape Colony, where the disease decimated Khoisan populations in the 17th and 18th centuries. During the war, the measles epidemic started in the Cape late in 1899, but by 1901 had spread to the internment camps in the occupied territories of the Free State and Transvaal, with epidemics spiking in August and November 1901, and again in January 1902. The effects

60 *Rand Daily Mail*. 9 August 1912. p.7.

61 *Rand Daily Mail*. 9 June 1926. p.10.

62 Curiously, a large cluster of infections was found on General Smuts' farm in Irene. See *Rand Daily Mail*. 15 April 1938. p.12.

63 See as background: Van Heyningen, E. (2009) 'The Concentration Camps of the South African (Anglo-Boer War), 1900–1902'. *History Compass*. 7. pp.22–43; Smith, I. and A. Stucki. (2011) 'The Colonial Development of Concentration Camps (1868–1902)'. *The Journal of Imperial and Commonwealth History*. 39(3). pp.417–437; Stanley, L. and H. Dampier. (2005) 'Aftermaths: Post/Memory, Commemoration and the Concentration Camps of the South African War 1899–1902'. *European Review of History/Revue européenne d'histoire*. 12(1). pp.91–119.

64 The naming of these camps is a controversial matter. The British called them 'refugee camps', but the Boers considered them to be prisoner of war camps for civilians, as confinement was not voluntary. They were also known at the time as 'concentration camps', a term that became notorious during World War II, and deeply politicised in the South African context, with the rise of Afrikaner nationalism. The difference between the camps during the South African War and those run by the Nazis was that there was no intent at extermination, but the consequence of the (undoubtedly criminal) neglect in the South African camps was indeed a high death rate. Van Heyningen (2009, p.22) writes that 'internment camps might be more appropriate but the word has few resonances in the South African context'.

65 Shanks, D., Hu, Z., Waller, M. et al. (2014) 'Measles Epidemics of Variable Lethality in the Early 20th Century'. *American Journal of Epidemiology*. 179(4). pp.413–422. [p.414].

66 Van Heyningen, 2008.

67 BCCD (n/d) British concentration camps of the South African War. [Online]. Available at: https://www2.lib.uct.ac.za/mss/bccd/. [Accessed: 20 May 2020].

68 Van Heyningen, 2008, p.23.

Figure 9: Turffontein internment camp, 1901

SOURCE: With permission, Photographical Collection Anglo-Boer War Museum, Bloemfontein

in the camps were disastrous, with a fatality rate for measles of over 40%.[69]

There were three camps in and around Johannesburg. The Turffontein camp occupied the racecourse in the southern suburbs, and was the only urban camp in South Africa. Closer to Pretoria was the camp in Irene and, to the west, the camp outside Krugersdorp. Occupants of these overcrowded and unhygienic camps were vulnerable to many diseases, but measles was a disaster for the children. Turffontein was better managed and had lower death rates than many others, but there were two measles epidemics that created severe death spikes.[70] During the camp's existence, there were 716 deaths, of which 609 were individuals younger than 15 years old. Irene was poorly managed and reported 1 179 deaths, of which 1 002 were under the age of 15, while Krugersdorp had 776 deaths, with 664 victims under 15 years of age.[71]

Outside the internment camps, measles remained a serious threat to children in Johannesburg even once vaccines became available in the 1960s, and there were periodic local outbreaks. There was a report in 1910, for example, of 500 cases of measles among white children in Johannesburg, with 12 fatalities, raising a debate over whether schools should be closed.[72] In 1969, measles was referred to as 'the biggest killer among preventable diseases in Johannesburg', with 64 children dying of the disease in 1968 alone (almost all black African).[73]

69 Shanks et al., 2014; Fetter, B. and S. Kessler. (1996) 'Scars from a Childhood Disease: Measles in the Concentration Camps during the Boer War'. *Social Science History*. 20(4). pp.593–611.

70 BCCD (n/d).

71 Ibid.

72 *Rand Daily Mail*. 15 October 1910. p.7.

73 *Rand Daily Mail*. 17 June 1969. p.11.

Pneumonic plague of 1904

In 1904, Johannesburg was a growing town of 158 580 people.[74] Fifty-three per cent of the population was white, although there were large concentrations of black Africans in the mining compounds outside the town boundaries, and only 24% was female (a significant fact, as it explains why the overwhelming majority of epidemic deaths was among males).

In 1904, Johannesburg was under a new administration, and there was rapid progress towards establishing a public health infrastructure. Charles Porter was the head of a new health department, and sewerage and drainage systems were under construction across the town. However, there were parts of the town, including the densely settled Indian Location (known at the time as the 'Coolie Location'), which were overlooked in this development.

The Indian Location had been established as a ghetto for people of Asian origin in 1897, on a portion of the old Brickfields site on the edge of town. The Location was racially diverse because, while the plots in the Location were owned by people of Indian origin, there was a mix of Indian, black African and 'poor white' tenants. With a growing population after the war, no physical expansion, and hardly any municipal investment in services, conditions rapidly deteriorated, and the Location was officially designated an 'insanitary slum'.

The epidemic that broke out in the Indian Location in March 1904 was the pneumonic plague (a more virulent version of the better-known bubonic plague). The plague of course holds a special place of horror in Western imagination. This was the disease that decimated European populations during the Plague of Justinian in the 6th century, the Black Death in the 14th century, and the Great Plague of London in 1664. While the 1904 outbreak in Johannesburg caused relatively few deaths, it was a source of great social anxiety and had an enduring impact on the spatial form of the town.

Between 1894 and 1896, there were outbreaks of the plague in Indian and Chinese ports, and the epidemic was dubbed the 'Oriental plague' by the West. The plague became a massive disaster in India, where there were reports of three million deaths by 1905, and it could not be contained because ports such as Bombay and Calcutta were part of highly interconnected British maritime networks.

When a case of the plague was discovered in Lourenço Marques in January 1899, a Southern African inter-state conference was convened with representatives from Portuguese East Africa, the ZAR, the Republic of the Orange Free State, the Cape Colony and the Colony of Natal. It aimed to coordinate responses to the threat of an epidemic, using guidelines that had been drawn up during the 10th International Sanitary Conference, sponsored by the Austrian Empire, and held in Venice in 1897.[75] The Venice conference and its Southern African counterpart were significant events, the kernel of later forms of multi-lateral collaboration in controlling outbreaks of disease, such as the establishment of the World Health Organization (WHO) in 1948.

Each of the representative colonies and independent states introduced regulations to give effect to the recommendations of the conference, with the ZAR issuing its proclamation on 12 April 1899 (in which the plague was referred to in Dutch as the *Aziatische Pest*).[76] The proclamation dealt with international reporting obligations, the creation of a Southern African Council of Doctors, border quarantine stations, cordons around infected dwellings or neighbourhoods, the burning of infected buildings and possessions, and the isolation of infected individuals.

War broke out in October 1899, both ending inter-governmental collaboration, and creating conditions for the spread of the plague with the movement of troops and refugees, cramped conditions in military camps and the import of fodder for horses, which brought flea-infested rats. The plague came first to the ports, to Cape Town, Durban, Port Elizabeth, East London and Lourenço Marques, and it was known

74 The census was taken in April 1904, so it is possible to give accurate population figures.
75 Even as the Southern African conference was under way, a case of the plague was reported in Middelburg in the Transvaal. See Phillips, 2012.
76 *Staatcourant der Z.A Republiek*, Gouvernements Kennisgewing. No.172. 12 April 1899.

initially in Johannesburg as the 'Durban plague'.[77] There was an outbreak in Cape Town in February 1901 and then in Durban in February 1903, spreading inland to Pietermaritzburg.[78]

Johannesburg was protected at first by its location in the far interior, as fleas and rats were not good travellers, especially in the winter season,[79] but there was a rising fear of the plague in the mining town, and the disease was soon racialised. A column in the *Rand Daily Mail* on 26 January 1903 praised the virtues of the British in dealing sensibly with the plague but lambasted the Southern Europeans, including the Portuguese in Delagoa Bay, labelling the Latin races as 'excitable and prone to panic'.[80] It was Asians, however, who were singled out for the greatest antipathy. On 18 February 1903, for example, the public were given some 'valuable hints' on dealing with the plague. The two big ideas were, first, to 'cleanse the big towns of the interior' to prevent the plague moving inland and, second, to 'stop the immigration of the inferior Asiatic races'.[81] Indeed, the granting of permits for 'Asiatics' to enter the Transvaal was suspended on 10 February.[82] There were also concerns that Africans might spread the plague and, in May 1903, quarantine facilities were set up on the Transvaal border at Volksrust, Vereeniging and Komatipoort, with the requirement that all black Africans entering the Transvaal had to be quarantined.[83]

Johannesburg had time to put preparations in place and, apart from the racial targeting, there were interventions that included: the refurbishment of the previous smallpox *lazaretto* at Rietfontein (near present-day Modderfontein);[84] plans to deal with slop-water, which often ended up on the streets of the town;[85] the transfer of the Burgher camp hospital (for Boer prisoners) from the war to civil authorities for isolation purposes; plans to close the railways; and action against rat infestation.[86] The association of the plague with rats was well understood at the time, and there was already speculation that lice and fleas were the actual vectors of the disease.[87] The local authorities called for a war on rats and warned that, 'It is the duty of all to combat against these vermin by every means in their power.'[88] As the *Rand Daily Mail* explained in a homily:

> Bubonic is essentially a filthy disease really it is a rat syphilis, and the best preventative is household, personal and general cleanliness. A bath every day, clean clothes, fresh air, are the chief resistance. Disinfectants are good but sunshine is more effective.[89]

The outbreak in Durban in February 1903 caused a sense of dread in Johannesburg, and Durban's authorities were heavily criticised in the Johannesburg media for their lassitude in dealing with the disease; this was especially galling as these officials were of the 'sensible British race'.[90] The Johannesburg public were advised that death rates among whites in Durban were 13.2 per 1 000 but for Indians death rates were said, vaguely, to be 'very high'.[91] Authorities in Johannesburg noted that Bamboo Square in Durban, a slum of mixed African and Asian occupation, had been razed to the ground.[92]

77 The plague is believed to have arrived in Durban with rat-infested fleas in cargo of horse fodder from Argentina.
78 Phillips, 2012.
79 Ibid.
80 A column by 'J.S.' entitled, 'About the Plague: Keep Clean...and Fear Not'. In *Rand Daily Mail*. 26 January 1903. p.6.
81 An expert. Bubonic Plague: Some Valuable Hints. *Rand Daily Mail*. 18 February 1903. p.9.
82 Government Notice 115 of 1903, Transvaal.
83 *Rand Daily Mail*. 21 May 1903. p.5.
84 Ibid.
85 *Rand Daily Mail*. 11 March 1903. p.5.
86 *Rand Daily Mail*. 30 January 1903. p.5.
87 A scientific study conducted as early as 1902 in Hong Kong revealed some connection between rats and the plague, with observations that a bubonic plague epidemic among humans follows about two weeks after rats, but the exact mode of transmission of the plague bacillus to humans was not fully understood. See *Rand Daily Mail*. 29 March 1905. p.8.
88 Warning: Vigilance of Householders Necessary. *Rand Daily Mail*. 4 May 1903. p.8.
89 *Rand Daily Mail*. 18 February 1903. p.9.
90 *Rand Daily Mail*. 26 January 1903. p.6.
91 *Rand Daily Mail*. 8 May 1903. p.7.
92 *Rand Daily Mail*. 28 February 1903. p.7.

In early May 1903, rumours circulated in Johannesburg that the plague had arrived in town, but no cases were confirmed.[93] An outbreak never in fact occurred in Johannesburg in 1903 and, as winter arrived, fears dissipated. However, there was persistent concern that conditions in the Indian Location were conducive to the spread of the plague.

While colonial prejudice blamed the Indian population for their 'sanitary laxity',[94] the unofficial leader of the local Indian community, the young British-trained lawyer, M.K. Gandhi, insisted that the authorities were 'indifferent to the welfare of the residents',[95] and spoke of the 'criminal negligence of the municipality'[96] for its failure to install a sanitary system in the Location. This was the view, too, of a Dr Marais, who regularly visited households in the Location and was convinced that the local authority was deliberately allowing the Location to deteriorate as it intended to expropriate properties from the Indian landowners.[97] He was correct, as the town's Health Committee had in fact decided that relocation was the only solution.[98] Even Dr Pakes, the government bacteriologist, who was quickly installed as the Acting Medical Officer of Health when the epidemic broke out, was hugely critical of government, although his solution was in line with prevailing segregationist thinking:

> My private opinion on this outbreak is that it is due entirely to the neglect of the Government in allowing the overcrowding of the houses. In some places I visited houses of about ten feet square were occupied each by about seven or eight Bombay natives. The insanitary conditions were a disgrace to civilisation. With regard to stamping out the plague speedily, I think the best way would be to remove every Indian and everyone else in the location to temporary huts or tents out of the city and fire the whole place down with its coal tar.[99]

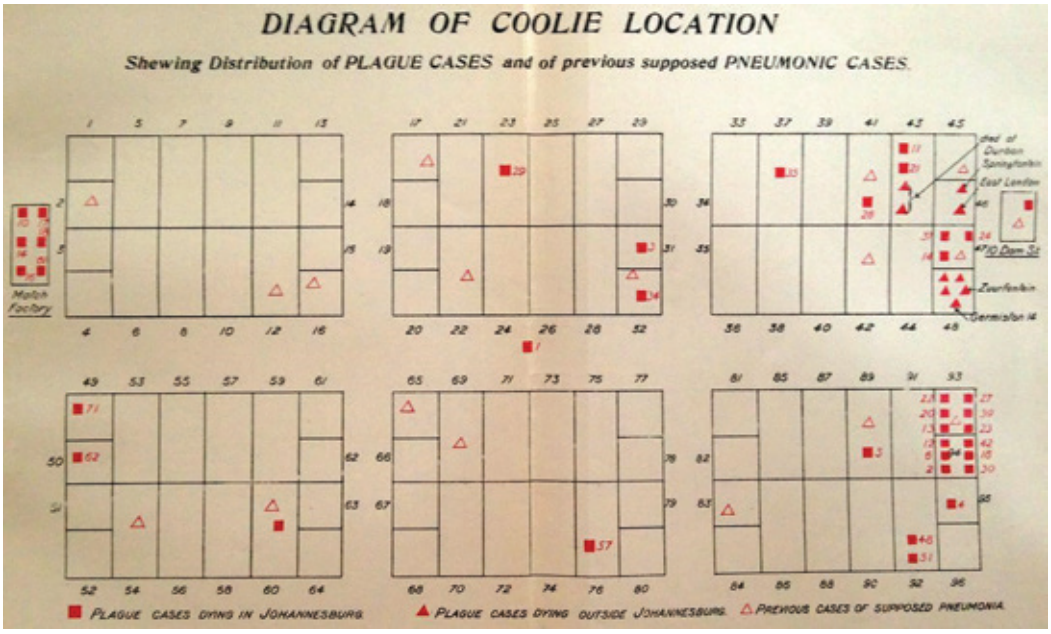
By February 1904, fears had resurfaced, and the local health officials began conducting regular inspections. M.K. Gandhi wrote to Dr Porter about his concerns and, together, Gandhi and Porter visited the Location on 13 February. Porter's response was to recommend to the Town Council an urgent removal of residents to a tented camp while permanent accommodation was secured.[100] It was late in the day, though, as the plague may already have reached the Location by that time.

There are various theories as to how the plague arrived in Johannesburg. The most commonly cited account is that an Indian labourer had contracted the plague in East London, and brought the disease to his brother's house in the Location.[101] At a Health Committee meeting, however, it was reported that the plague broke out first on a gold mine among workers recruited from Portuguese East Africa, but was carried to the Location by an Indian worker.[102] Evans et al. argue, however, that there is no evidence that any one person from outside Johannesburg brought the plague to the town, and suggest that the plague had come to Johannesburg in food supplies, such as rice or wheat, which were stored in the market buildings close to the Location.[103]

Whatever the source, during the week of 14 March, between 15 and 18 residents from the Location fell seriously ill. M.K. Gandhi took the initiative in commandeering an abandoned house in the Location in which the sick could be isolated.[104] At 19h30, on the evening of Friday 18 March, the District Surgeon was advised that there was a growing number of seriously ill individuals in the Location. The District Surgeon

93 *Rand Daily Mail*. 2 May 1903. p.5
94 *Rand Daily Mail*. 26 January 1903. p.6.
95 Zangel, 2004, p.65.
96 Ibid., p.71.
97 Ibid.
98 Ibid.
99 Article entitled 'The Indian View: Shocking Scenes in Coolie Location'. *Rand Daily Mail*. 22 March 1904. p.8.
100 Zangel, 2004.
101 Phillips, 2012.
102 Zangel, 2004.
103 Evans et al., 2018.
104 There was some controversy over whether Gandhi had in fact informed the authorities timeously of the evolving events in the Location. Gandhi was insistent that he had and was ignored by the authorities. See his Letter to the Editor. *Rand Daily Mail*. 15 April 1904. p.8.

Figure 10: Mapping of plague cases in the *Rand Plague Report* of 1905
SOURCE: Accessed through the Heritage Portal



and the Acting Medical Officer of Health[105] visited the makeshift clinic at 06h30 on Saturday, 19 March, and found nearly 20 seriously ill and dying patients. They took bacteriological samples and arranged for the relocation of the individuals to a temporary quarantine site.

That evening, the test results confirmed that the illness was the pneumonic plague, a virulent strain of the disease, and the police immediately drew a cordon around the Location, while the troops stationed in Heidelberg and Potchefstroom moved into Johannesburg. In addition, the isolation-camp-in-waiting at Rietfontein was quickly opened.[106] There was real fear at the time from authorities that the plague would spread into white neighbourhoods, and especially into Vrededorp, where many poor Afrikaans-speaking whites were living in overcrowded conditions, and this may explain the rapid action.[107]

The Deputy Mayor of Johannesburg convened an informal meeting of the Town Council at 09h30 on Sunday 20 March, which agreed to move the patients from the temporary shelter to the isolation camp at Rietfontein; instruct local officials to visit every household in the Location twice daily; and investigate every suspected case thoroughly. By the evening of 20 March, there were 38 known cases, of which 30 had already ended fatally.[108]

On Monday, 21 March, the *Rand Daily Mail* reported:

> Johannesburg was startled yesterday morning by the news that the plague, in the form of the violent pneumonic type, had broken out in the Coolie Location.[109]

105 Dr Porter was ill at the time – prompting a false rumour that he was down with the plague – and so the government bacteriologist, Dr Pakes, was appointed Acting Medical Officer of Health. Dr Pakes was eventually hailed as the 'plague conqueror' and given civic awards on his retirement in June 1905, when Dr Porter took command once again. See *Rand Daily Mail*. 9 June 1904. p.4.

106 *Rand Daily Mail*. 21 March 1904. p.8; 22 March 1904. p.8.

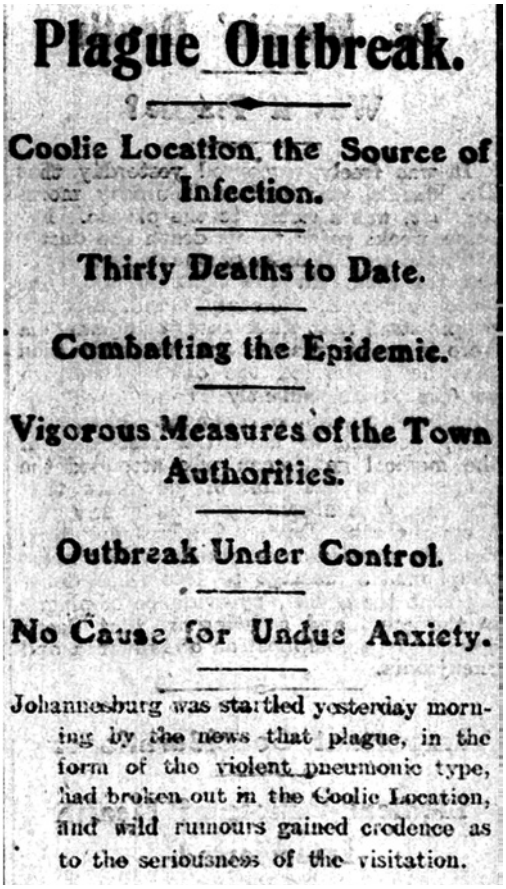
107 Ibid.

108 Ibid.

109 Ibid.

Figure 11: Headlines from the *Rand Daily Mail*, circa 1904

SOURCE: With permission, African Newspapers Electronic Resource, World Newspaper Archive



Plague Outbreak.

Coolie Location the Source of Infection.

Thirty Deaths to Date.

Combatting the Epidemic.

Vigorous Measures of the Town Authorities.

Outbreak Under Control.

No Cause for Undue Anxiety.

Johannesburg was startled yesterday morning by the news that plague, in the form of the violent pneumonic type, had broken out in the Coolie Location, and wild rumours gained credence as to the seriousness of the visitation.

The paper quickly tried to reassure the white residents of Johannesburg, while at the same time urging them to avoid complacency:

> Although the facts must be regarded as serious, we are able to assure the public that the outbreak is so far under medical control, and that there is every reason for thinking that the town itself, as well as the mines, will be kept clear of infection.[110]

The anxious white public were also advised that 'so far the disease is solely confined to coolies' and that the cordon was 'absolutely unbreakable'.[111] However, already by Monday 21 March, Dr Marais, who had been tending to the ill in the Location, had died of the plague, with his wife and children dying shortly afterwards.[112] Nine sick persons escaped the cordon and died elsewhere in town, but seemingly without infecting anyone else.[113] Additionally, 16 persons escaped from Rietfontein, although they were all eventually apprehended.[114]

London received cabled reports from Johannesburg on the outbreak of the plague on 21 March, and this resulted in a decline in the price of mining shares.[115] On Tuesday 22 March, Special Regulations were proclaimed in the Transvaal Government's Gazette Extraordinary, which set up the Rand Plague Committee to coordinate interventions; required immediate notification of anyone with symptoms of the 'Oriental plague'; and provided the Committee with powers to enter premises, relocate individuals from insanitary areas, and disinfect and, if necessary, destroy possessions and property.[116] Among the other measures taken was the immediate cessation of trading by Asians in the town and the quarantine of African and Asian travellers in and out of the Transvaal in border camps for at least five days. A traveller from Johannesburg suspected of having the plague was taken off a train at Springfontein in the Orange Free State, where he died.[117]

From this point, the Rand Plague Committee took charge of daily coordination of response to the

110 Ibid.
111 Ibid.
112 Capon, T. (2015) 'Plague, Gandhi and the Parliamentary Clerk's Daughter'. *The Heritage Portal*. 9 November. [Online]. Available at: http://www.theheritageportal.co.za/article/plague-gandhi-and-parliamentary-clerks-daughter. [Accessed: 14 May 2020]; *Rand Daily Mail*. 21 March 1904. p.9.
113 Evans et al., 2018.
114 *Rand Daily Mail*. 23 March 1904. p.10.
115 *Rand Daily Mail*. 22 March 1904. p.8.
116 *Rand Daily Mail*. 23 March 1904. p.10.
117 *Rand Daily Mail*. 24 March 1904. p.8.

epidemics. The Committee was strongly oriented towards the mining magnates on the Witwatersrand but also included the Mayors of Johannesburg and the smaller towns.[118] The Committee operated within the regulations issued by the Colonial Secretary of the Transvaal. On 24 March, the Colonial Secretary issued instructions to municipalities which included requirements for house-to-house inspections in 'native locations and Asiatic quarters', to identify concealed and unreported cases and detect overcrowding; thorough disinfecting of all insanitary housing (including stripping off wallpaper and removing whitewash); ensuring that 'no sick natives or Asiatics lie about unattended'; systematic destruction of all rats; immediate isolation of individuals carrying the plague; observation of individuals who have been in contact with the sick; prompt burial of the dead; and disinfecting of all infected buildings and their contents.[119]

The epidemic raged fiercely in the first week after its detection but subsided after that, with a slight resurgence around 21 April; it took 16 weeks to fully contain the disease. By 29 April, 110 cases had been reported in Johannesburg, with 78 deaths, eight recoveries and 32 individuals remaining in hospital. The *Rand Daily Mail* concluded that, 'Asiatics were most vulnerable and natives and whites having resistance.'[120] In fact, the only recorded white deaths were from the Marais family.

By 1 May, the plague had abated, new cases were isolated and, by June, the epidemic was said to be over. The Acting Medical Officer of Health and the District Surgeon had tracked the outbreak closely, meeting daily around a large map of Johannesburg on which different coloured pins were placed.[121] This early form of epidemiological and spatial data gathering and analysis was to prove extremely important in the battle against the plague, as evident in the plague report released in 1905.[122]

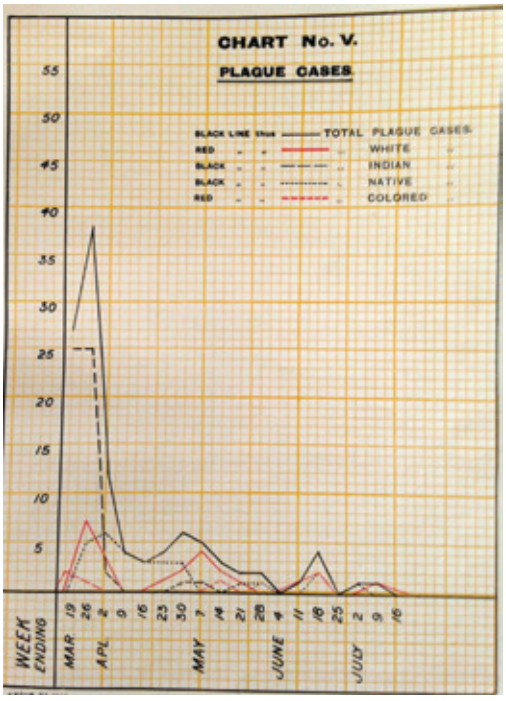
Altogether, there were 161 cases of the plague reported in Johannesburg over 16 weeks, with 128 deaths (a mortality rate of 79.5%). There were 113 cases of the pneumonic plague, 40 cases of the bubonic plague, six mixed and two of the septicemic plague.[123] The death rate for the pneumonic plague was 98%, compared with only 22.5% for the bubonic plague victims.[124] There was also considerable variance in death rates across race and time: 94.5% of all Indians who contracted the plague died, compared with 58.6% of black Africans and 48% of whites. The greatest number of fatalities occurred in the first week, in which 55 of the 65 cases were fatal.[125]

In terms of actual numbers of cases and deaths, the 1904 plague was very limited. But this epidemic is significant for the panic it produced, its high mortality rates, its racial dimension, and its enduring impact on the spatial form of the town. At the end of March, the Town Council agreed to a proposal from the Rand Plague Committee that the Indian Location should be burned to the ground and its inhabitants moved *in toto* to Klipspruit, the site of present-day Pimville, Soweto, 14 miles distant from the town centre.[126] All residents of the Location were treated as suspects and would have to be relocated unless they could prove by 1 April they were satisfactorily housed on their employers' property.[127] In all, 3 174 residents of the Location (1 612 Indians, 1 420 Africans and 142 coloureds[128]) were taken under armed guard to the new site, where their possessions were disinfected and they

118 *Rand Daily Mail*. 23 March 1904. p.10.
119 *Rand Daily Mail*. 24 March 1904. p.8.
120 *Rand Daily Mail*. 29 April 1904. p.8.
121 *Rand Daily Mail*. 1 June 1904. p.6.
122 Rand Plague Committee. (1905) *Report upon the Outbreak of Plague on the Witwatersrand March 18th to July 31st, 1904. Johannesburg (South Africa)*. Argus: Johannesburg.
123 With bubonic plague, the infection is in the lymph nodes, while with pneumonic plague it is in the lungs, and with septicemic plague it is in the blood. Pneumonic plague is the most serious and nearly always fatal.
124 Evans et al., 2018.
125 Ibid.
126 *Rand Daily Mail*. 1 April 1904. p.6.
127 Zangel, 2004; Phillips, 2012.
128 The coloureds were eventually moved to the Malay Location, as no provision was made for this small group in the racially segregated tent camps of Klipspruit.

Figure 12: Chart showing number of plague cases by population group, in the *Rand Plague Report* of 1905

SOURCE: Accessed through the Heritage Portal



were placed in two racially separated tent camps surrounded by soldiers. The buildings in the Indian Location were then surrounded by a wall of corrugated iron to keep the rats inside, saturated with paraffin and coal tar, and then torched, with a few firemen injured in the fierce blaze.[129] For Gandhi, this was a 'theatrical display' to assure the white community that their concerns were being addressed.[130]

Indeed, this extraordinary assault on the Indian and African residents of the Location had everything to do with the welfare of white citizens.[131] Indian and African residents were placed beyond the margins of the town, creating immense difficulties in terms of transport and livelihoods, and prefiguring the arrival of the apartheid city. It is in fact not clear that the relocations to Klipspruit did much to protect the white community as the plague was already substantively contained by the time of the relocations, and only one suspected case of the plague was ever recorded in Klipspruit.[132] However, as Howard Phillips indicated, the relocation, which happened under the guise of responding to the plague, enabled the authorities to achieve a long-desired objective.[133] He wrote:

> Quite simply, the outbreak of plague had created an unchallengeable opportunity, in the face of a terrifying threat to life, for segregation lobbyists within the white establishment to push aside opposition to their long sought goal and effect a mass removal of Africans to a single, controllable location on the outskirts of the city, something they have been punting publicly since at least 1899.[134]

Over time, the Indian residents of Klipspruit filtered back into Johannesburg, to places like the Malay Location, Vrededorp and Burgersdorp, and some Africans also returned, but the most marginal of the households were effectively trapped in the camp. Klipspruit was eventually renamed Pimville and became the nucleus of the vast agglomeration of townships that were named Soweto (an acronym for **So**uth **We**stern **To**wnships) in the 1960s.[135]

The degree to which the epidemic was racialised was severe, even in South African terms. The invective was directed mainly at the Indian community, although Gandhi's leadership may have helped mitigate attitudes in the white community to a limited extent, showing the collaborative spirit both within the Location and

129 *Rand Daily Mail*. 6 May 1904. p.8.
130 Phillips, 2012, p.54.
131 Ibid.
132 Evans et al., 2018.
133 Phillips, 2012.
134 This was written with specific reference to the creation of Ndabeni in Cape Town but, arguably, relates as much to Klipspruit, Johannesburg. See Phillips, 2012, p.61.
135 Zangel (2004) reports that 1 249 Indians and 752 Africans in the Klipspruit camp were eventually given permission to return to Johannesburg, while smaller numbers deserted or left Johannesburg altogether.

between residents of the Location and authorities. There was a report in the *Rand Daily Mail* that spoke more sympathetically, albeit paternalistically, of 'the wholehearted zeal displayed by the people imprisoned in that fateful area'.[136] The crisis did, however, reveal some of the division among Indian residents. A group of 'Madras and colonial born Indians' wrote to the *Rand Daily Mail*, stating that:

> We like the public to know that how the plague was Breakout and from who it was Breakout was the Bombay Soortheys Hindoo or commonly called Bombay coolies and not from Madrasse Indians, Mohammedans or Calcutta Indians.[137]

The letter explained that the Soorthey Indians could not speak English and 'are overcrowded and dirty and are only living on two blankets and couple of sacks and a carpet'. By contrast, the Madrasse and colonial Indians are 'the civilised English-speaking Indians [...] most of [them] living in European style'. The writers begged the Medical Officer of Health to come to the Location to see the difference.

The plague also raised fears among whites of Chinese indentured labour arriving to work on the Witwatersrand mines. Opponents of the use of Chinese labour in Johannesburg and London were quick to point out that the plague was endemic in China.[138] In the final event, Chinese labour *was* delayed in arriving on the Witwatersrand because of reports of an outbreak of the plague in Hong Kong, where indentured labourers were scheduled to embark on their journey to South Africa.[139]

There was never again an epidemic of the plague in Johannesburg, although there were periodic scares and isolated cases. In 1912, there was a small outbreak of the plague in Durban and concerns were raised of potential outbreaks in the Malay Location and Vrededorp. By the 1920s, it was known that gerbils in the rural areas of South Africa were vectors for an endemic form of the plague, which might take epidemic form.

In 1924, there was a new scare, with Ferreirasdorp and Sophiatown in Johannesburg identified as areas of risk for an outbreak. The focus of containment was on removing rats, with the Town Council insisting that 'the rat must be killed wherever he is found'.[140] By 1933, the Public Health Department of the Johannesburg City Council reported killing 100 000 rats a year, in addition to regular refuse removal.[141] In 1926, there were reports of the plague moving northwards from the Orange Free State, and again in 1929 cases were reported as far north as Vereeniging, although the outbreaks never reached Johannesburg.[142] In 1935, a surfeit of wheat brought the gerbils into storage silos and there were outbreaks of the plague across the central areas of South Africa. As the disease crept towards the Witwatersrand, a Plague War Council was established on the Witwatersrand, consisting of the Medical Officers of Health of all the municipalities, and a special Reef Plague Officer was appointed.[143] A case was identified on a mine in Benoni and contaminated rats found in Krugersdorp, but the spread was contained.[144] Altogether, there were 184 plague deaths in South Africa in 1935/36, mainly in the Orange Free State, but Johannesburg was not directly affected. The threatened epidemic did, however, reinforce arguments for the effective implementation by local authorities of the Slums Act that had been promulgated the previous year.[145]

136 *Rand Daily Mail*. 23 March 1904. p.10.
137 Letter to the Editor by V. Gooroosamy Naidoo and Kathan Pillay, on behalf of the Madrasse and Colonial Born Indian Community. *Rand Daily Mail*. 24 March 1904. p.8.
138 *Rand Daily Mail*. 25 March 1904. p.7.
139 *Rand Daily Mail*. 6 May 1904. p.7.
140 *Rand Daily Mail*. 18 November 1924. p.7.
141 *Rand Daily Mail*. 2 March 1933. p.11.
142 *Rand Daily Mail*. 23 March 1929. p.7.
143 *Rand Daily Mail*. 28 February 1935. p.10.
144 *Rand Daily Mail*. 25 December 1935. p.6.
145 *Rand Daily Mail*. 11 April 1935. p.1.

Influenza epidemic of 1918/19

The third major epidemic to strike Johannesburg was the influenza epidemic of 1918/19. This was the worst epidemic to date, the first major epidemic since the creation of the Union of South Africa in 1910, and part of a devastating global pandemic. Although the four British colonial administrations had been amalgamated into a single government, no provision had been made in the founding legislation, the South African Act, 1909, for a consolidated national public health system. Public health was 'merely considered to be a matter under the control of the Union government',[146] with the Department of Interior loosely tasked with oversight across the discordant policies of the four provinces. There was a small public health unit within the Department's bureaucracy, consisting of an Advisory Union Officer of Health in Pretoria, and four Assistant Officers located in Cape Town, Durban and Bloemfontein.[147] Provincial governments had the responsibility for running public hospitals, but public health was still essentially a municipal function and was dependent on the willingness and capacity of municipalities to perform that function. In this respect, Johannesburg was in the fortunate position of having a well-established Public Health Department with a well-regarded Medical Officer of Health.

A Public Health Bill was eventually drafted in 1913 and sent to municipalities for comment, but the outbreak of war in 1914 intervened, and there was no further progress. As news of a spreading influenza epidemic reached South Africa, the Minister of Interior convened a Public Health Conference in Bloemfontein during September 1918.[148] Naturally, the participants could not have anticipated the ferocity of the pandemic that was to strike South Africa about a month later, but they did recommend steps to set up a public health system.

There is in fact considerable literature on the pandemic globally and in South Africa,[149] but little on the specific occurrence in Johannesburg. We know from international literature that the global pandemic occurred in three waves over the period March 1918 to April 1919, and killed between 21 and 40 million people.[150] Although deaths were high in Europe, the highest death rates were in the poorest parts of the world in South Asia, Central America and sub-Saharan Africa. The symptoms were typical of influenza, but the virus caused frequent pneumonic complications, with mortality rates highest among young adults, with the average age of death only 39 years old, suggesting that older age groups may have enjoyed some degree of immunity as a result of the 'Russian flu' decades earlier. The disease was airborne and highly contagious, and effective vaccines for the flu were only widely available from 1933. The origins of the virus remain obscure and may have involved both a mutation of an existing strain of influenza and a combination of gene segments present in different viruses, with a strong suspicion that there was a viral transmission from pigs to humans.[151] There were observations of prior influenza-type outbreaks among pigs in Europe, the United States (US) and China, and so pinpointing the place of origin remains speculative.[152]

The first wave was mild and broke out in a military camp in Kansas in the US in March 1918,

146 Bain, E. and J. Venter (2016) 'Public Health Policy in a Time of Change and Disaster in South Africa: 1910–1920'. *Jàmbá: Journal of Disaster Risk Studies*. *8*(1). [Online]. Available at: https://jamba.org.za/index.php/jamba/article/view/215. [Accessed: 2 September 2020]. [p.3].

147 Bain and Venter, 2016.

148 Ibid.

149 Apart from the work on South Africa by Howard Phillips, the effects of the influenza pandemic across Africa are still poorly researched.

150 Determining mortality rates is a complex matter, especially given the under-reporting in the poorer parts of the world. Paterson and Pyle give a figure of 30 million, and Johnson and Mueller suggest 50 million worldwide as a conservative estimate, advising that this may be up to 100% understated. See, for example, Paterson, D. and G. Pyle. (1991) 'The Geography and Mortality of the 1918 Influenza Epidemic'. *Bulletin of the History of Medicine*. 65(1). pp.4–21; Johnson, N. and J. Mueller. (2002) 'Global Mortality of the 1918–1920 "Spanish" Influenza Pandemic'. *Bulletin of the History of Medicine*. 76(1). pp.115–215; Tomkins, S. (1992) 'The Failure of Expertise: Public Health Policy in Britain during the 1918–19 Influenza Epidemic'. *The Society for the Social History of Medicine*. 5(3). pp.435–454.

151 Taubenberger, J.K. (2006) 'The Origin and Virulence of the 1918 "Spanish" Influenza Virus'. *Proceedings of the American Philosophical Society*. 150(1). pp.86–112; Morens, D. and A. Fauci. (2007) 'The 1918 Influenza Pandemic: Insights for the 21st Century'. *The Journal of Infectious Diseases*. 195(7). pp.1018–1028.

152 Taubenberger, 2006.

reaching France aboard troop ships by early April. The second wave was deadly and broke out in Brest, France, in August, and then, almost simultaneously, in Freetown in Sierra Leone and in Boston, Massachusetts. From these three points, it spread rapidly across the world along shipping and rail routes, with mortalities peaking globally in October and November 1918. The third wave was less virulent and struck early in 1919.[153] The influenza became misleadingly known as the 'Spanish flu' because Spain had less wartime censorship than other countries, and so the epidemic was more widely reported on there.

South Africa was one of the worst affected of all countries globally, with Howard Phillips providing an excellent account in various places of how it evolved nationally.[154] He explains, for example, how the early and mild strain of the flu arrived from around July or August 1918, with the outbreak in Durban spreading inland to Pietermaritzburg and then to the Witwatersrand. On 13 September, however, a ship carrying 1 300 demobilised troops of the South African Native Corps arrived in Cape Town, after having docked in flu-stricken Freetown where the virus had taken a virulent form. There was a half-hearted attempt at isolating the sick from the ship in military hospitals and quarantining others at a military camp in Rosebank, Cape Town. The quarantine was for two days only and by 16 September, troops were returning to their homes in Cape Town, or leaving on trains for their families in rural areas and small towns. By 6 October, over 160 people were dying each day of flu in the municipal area of Cape Town, with District Six and the Malay Quarter the heart of the outbreak.[155]

Cape Town deaths increased to over 300 per day between 8 and 13 October, and to over 400 a day at the peak of the epidemic, on 10 and 11 October. *The Cape Times* called it the 'gravest week in Cape Town's history'.[156] John X. Merriman wrote in his diary at the time of Cape Town being 'very empty & forlorn' during its 'two terrible weeks'.[157] As Phillips commented, 'Capetonians emerged from the episode of "Black October" grieving and distraught.'[158]

Figure 13: Headlines from the *Rand Daily Mail*, 1918

SOURCE: With permission, African Newspapers Electronic Resource, World Newspaper Archive

Rail passengers brought the flu to Kimberley, which was then a town of 53 000 people, including the population of the mine compounds and military camp. The mining compounds were a death trap and within two weeks nearly a quarter of the employees in the De Beers mines were dead (a death rate of 224 per 1 000). In the town itself, 4 696 people died (88 per 1 000). Like everywhere, the deaths were mainly in the 20–40-year-old age group.[159]

The flu spread nationally, with other hotspots including Port Elizabeth, Bloemfontein and towns in the Eastern Cape. The real devastation, however, was in parts of the Eastern Cape province then known as the 'Transkeian Territories'. The first wave came with the returning troops that had disembarked in Cape Town, with a second wave following as sick mineworkers were sent home from the mines in

153 The exact origins of the virus are debated, with two primary contenders. There were outbreaks of influenza among troops in France in December 1916, with bronchitis as a complication, and this may have been a precursor to the later virus; but there is also a theory that the virus was carried to France during the war by migrant workers from south China, and had bovine origins. See Langford, C. (2005) 'Did the 1918–19 Influenza Pandemic Originate in China?' *Population and Development Review*. 31(3). pp.473–505.

154 The most detailed account is in his doctoral thesis. See Phillips, 1984.

155 Ibid.

156 Cited in Phillips, 1918, p.46.

157 Cited in Phillips, 1984, p.49.

158 Ibid., p.65.

159 Ibid.

Kimberley and on the Witwatersrand. By the third week of October, Transkei was overwhelmed by the epidemic. The number of deaths was unknown. Since the flu was not a notifiable disease and many individuals were buried informally around homesteads, official reporting provided a serious underestimate. The Chief Magistrate of the Transkei reported around 37 000 deaths to the Influenza Epidemic Commission (out of a population of one million), but at the time of the 1921 census, Transkei's population was 100 000 less than anticipated.[160]

South Africa's Influenza Epidemic Commission presented its account in February 1919, only 10 weeks after the start of the epidemic, and before the third wave, which reported 139 471 deaths nationwide. Phillips points out that many deaths were not registered, and many returns had not been submitted before the Commission reported. While the figure of 11 726 white deaths may be taken as mostly accurate, figures for black Africans were clearly inaccurate. Phillips suggests a total of 300 000 deaths as a realistic figure, which amounts to 6% of the population of the Union of South Africa dead in six weeks. Phillips' estimated mortality rate of 22.8 per 1 000 was lower than some other parts of Africa, such as the Gold Coast and Nigeria, but was considerably higher than Europe, which ranged from about 4.3 per 1 000 in England and Wales, to over 10 per 1 000 in poorer countries (such as Italy and Ireland). In terms of absolute death rates, South Africa was the fifth worst hit country globally.

Understandably, Phillips focused his attentions on places like Cape Town and Kimberley, where influenza took a severe toll, but how did the epidemic unfold in Johannesburg and its surrounding region?

On 17 September 1918, there was a report in the *Rand Daily Mail* that the Spanish flu had arrived in South Africa: 'a few natives who recently returned from overseas being reported to be suffering from the complaint'.[161] On 24 September, there was a report on the outbreak of the Spanish influenza 'among natives employed on certain of the mines in the Central Witwatersrand'.[162] Several hundred mineworkers were said to be affected, including 'several Europeans'. It was 'presumed that the germs of the disease were conveyed by some person or persons who arrived from England by the last mail'.

On 25 September, the *Rand Daily Mail* indicated that the concern on the mines was with lost working hours rather than fatalities:

> So far as it is known at present, the disease is far more inconvenient than dangerous. It seizes upon its victims with malicious suddenness, usually manifesting itself first by a soreness of the throat, accompanied by an overpowering development of that 'tired feeling', and a weakness of the legs, and within an incredibly short space of time, the sufferer is down and out for anything from a day or two to a week [...] it is felt that probably the worst that Spanish flu can do will be to cause a few days' inconvenience.[163]

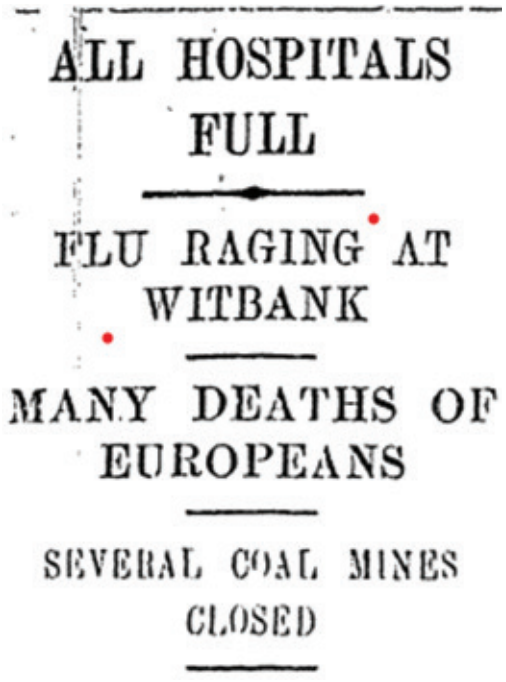
The recommended treatment for the Spanish flu was bed rest and quinine. However, matters turned more serious by 28 September, when headlines warned of a 'Sudden Spread of Influenza'.[164] The Chamber of Mines advised that 'the outbreak of Spanish influenza will affect the operations and profits of most of the mines for September and October', but it nevertheless reported optimistically that 'the epidemic is spreading to all the mines, but owing to the rapidity by which people affected recover, its effect on operations, although noticeable, is not likely to be serious'. At the time, there were about 10 000 mineworkers who were down with the flu, with some mines affected more than others.[165] Again, the concern was with the rapidity of spread, rather than with the seriousness of the disease.

By 30 September, every town on the Witwatersrand was said to be affected, and there was concern that the outbreak was showing 'no sign of subsidence' but, in terms of the severity of the disease, there was more concern at the time with an outbreak

160 Ibid.
161 *Rand Daily Mail*. 17 September 1918. p.8.
162 *Rand Daily Mail*. 24 September 1918. p.5.
163 *Rand Daily Mail*. 25 September 1918. p.7.
164 *Rand Daily Mail*. 28 September 1918. p.9.
165 Ibid.

Figure 14: Headlines from the *Rand Daily Mail*, 1918

SOURCE: With permission, African Newspapers Electronic Resource, World Newspaper Archive


ALL HOSPITALS FULL

FLU RAGING AT WITBANK

MANY DEATHS OF EUROPEANS

SEVERAL COAL MINES CLOSED

of scarlet fever.[166] The flu spread rapidly over the following weekend and, by 1 October, 17 212 African mineworkers were hospitalised. In the towns, private firms reported that their workforce had been depleted and there was a rush on chemists for drugs, such as quinine. The flu was said to have had 'a thorough grip on the Rand'.[167]

Death rates were, however, low, with the *Rand Daily Mail* reporting on 2 October that there were only four deaths of mineworkers on the East Rand, and six or seven on the West Rand. No fatalities were reported in town, and it was hopefully suggested 'the worst is over on the Rand'. The paper did report that 'inconvenience has been caused in a number of buildings in town by reason of house-boys being down'.[168] What was not known at the time was that this was the first mild wave of the flu, and that 'Black October' was yet to begin.

Johannesburg's residents may have missed a brief report in the *Rand Daily Mail* on 21 September of an outbreak of influenza in Sierra Leone, which was causing 'hundreds of deaths'.[169] However, by 8 October, the townsfolk must have been startled by shocking news from Kimberley and Cape Town: 600 deaths were reported from Kimberley, while Cape Town had been struck by an 'astoundingly sudden calamity, which has disorganised the city'.[170] There were worrying signs much closer to home, where four deaths were reported overnight on the West Rand.[171]

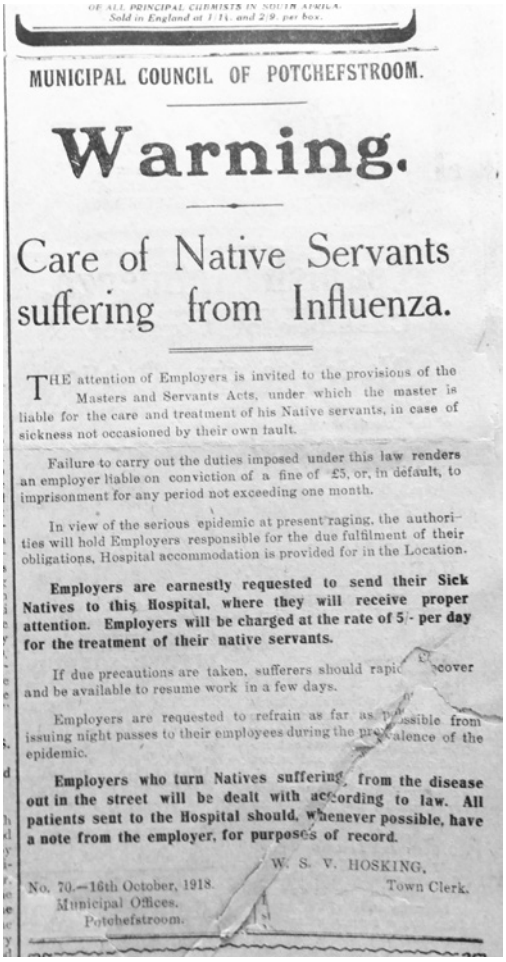
On 9 October it was reported that large numbers of 'boys were found dead in their kyas'[172] and that '90 native victims were in the government mortuary'.[173] The second wave of the Spanish flu had arrived in the town. Until then, measures for containment had amounted to little more than cancelling theatre and cinema performances.[174] Now, more urgent measures were taken: all primary and secondary schools were closed, although high schools were kept open; goods arriving from Kimberley were refused; and Africans were prohibited from using long-distance trains.[175] There was some mobilisation outside government, too, with members of the Transvaal Automobile Association, for example, making vehicles available to transport the sick.[176]

On 10 October, provincial and local government finally swung into action, with a Conference of

166 *Rand Daily Mail*. 30 September 1918. p.8.
167 *Rand Daily Mail*. 1 October 1918. p.4.
168 *Rand Daily Mail*. 2 October 1918. p.6.
169 *Rand Daily Mail*. 21 September 1918. p.9.
170 *Rand Daily Mail*. 8 October 1918. p.7.
171 Ibid.
172 'Boy' was the patronising name used for African male workers and 'kyas' were the backyard rooms in which they lived on their employers' premises.
173 *Rand Daily Mail*. 9 October 1918. p.6.
174 *Rand Daily Mail*. 5 October 1918. p.8.
175 *Rand Daily Mail*. 9 October 1918. p.6.
176 Ibid.

Figure 15: Notice from the Town Clerk in the *Potchefstroom Herald*, 18 October 1918

SOURCE: With permission, the Potchefstroom Museum



OF ALL PRINCIPAL CHEMISTS IN SOUTH AFRICA.
Sold in England at 1/1½ and 2/9 per box.

MUNICIPAL COUNCIL OF POTCHEFSTROOM.

Warning.

Care of Native Servants suffering from Influenza.

THE attention of Employers is invited to the provisions of the Masters and Servants Acts, under which the master is liable for the care and treatment of his Native servants, in case of sickness not occasioned by their own fault.

Failure to carry out the duties imposed under this law renders an employer liable on conviction of a fine of £5, or, in default, to imprisonment for any period not exceeding one month.

In view of the serious epidemic at present raging, the authorities will hold Employers responsible for the due fulfilment of their obligations. Hospital accommodation is provided for in the Location.

Employers are earnestly requested to send their Sick Natives to this Hospital, where they will receive proper attention. Employers will be charged at the rate of 5/- per day for the treatment of their native servants.

If due precautions are taken, sufferers should rapi[illegible]cover and be available to resume work in a few days.

Employers are requested to refrain as far as p[illegible]ssible from issuing night passes to their employees during the pr[illegible]alence of the epidemic.

Employers who turn Natives suffering from the disease out in the street will be dealt with according to law. All patients sent to the Hospital should, whenever possible, have a note from the employer, for purposes of record.

W. S. V. HOSKING,
Town Clerk.

No. 70.—16th October, 1918.
Municipal Offices,
Potchefstroom.

Administrators involving the Administrator of the Transvaal, the Medical Officer of Health, and members of the Town Council's Public Health Committee. National government was conspicuous by its absence, reflecting the near absence of a national health infrastructure. The conference received reports that on 9 October alone there were 156 admissions of influenza cases to the Johannesburg General Hospital, 86 burials in the Brixton Cemetery (daily burials were usually in single digits) and 300–400 deaths in the Rand mining compounds, with the collieries especially hard hit. Hospitals were overflowing with reduced staff, as many doctors and nurses also came down with the flu. The deaths of some members of the colonial elite made the epidemic more present in the media, as did the death of the prominent Secretary of the British Indian Association, A.M. Cachalia. All public events in the town were postponed and the Twist Street School in central Johannesburg was taken over as a 300-bed, temporary hospital for whites who could not be accommodated in Johannesburg General Hospital, and was equipped with provisions by the Military Hospital at Robert's Height in Pretoria.[177] The Vrededorp Native School was requisitioned for Africans.[178]

By 12 October, it was clear that municipal responses along the Witwatersrand were discordant. The Benoni Town Council, for example, had the most systematic response, by making influenza a notifiable disease; closing all cinemas, public pools and other municipal facilities; providing free disinfectants and certain medicines to the public; acting against the purveyors of quack medicines; and opening the Masonic Hall for the hospitalisation of Africans. All schools in Benoni and Germiston had been closed early in October, but Johannesburg only closed high schools and the School of Mines (eventually to become the University of the Witwatersrand) on 12 October. While Benoni had formally closed public facilities, Johannesburg was merely *discouraging* the use of facilities.[179] The Johannesburg Turf Club would not close down horseracing. In fact, it ran a banner advert 'Come to the Races Today and Get Cured of the Influenza' (even though one of its top jockeys was laid up with the influenza).[180] Shops in Johannesburg remained open, although the-then powerful Chamber of Commerce curtailed opening hours, while offices were advised to close at 13h00.[181]

177 *Rand Daily Mail*. 10 October 1918. p.7.
178 Ibid., p.6.
179 *Rand Daily Mail*. 12 October 1918. p.8.
180 Ibid., p.11.
181 Ibid., p.8.

However, while Johannesburg did not go into a formal lockdown, its health officials were diligent in tracking the outbreak and isolating patients. As was the case during the pneumonic plague, the Medical Officer of Health developed his own system of data gathering and reporting, and was able to explain in some detail the patterns of outbreak across the town.[182] Also important were the food and medical depots that the municipality provided across the town.

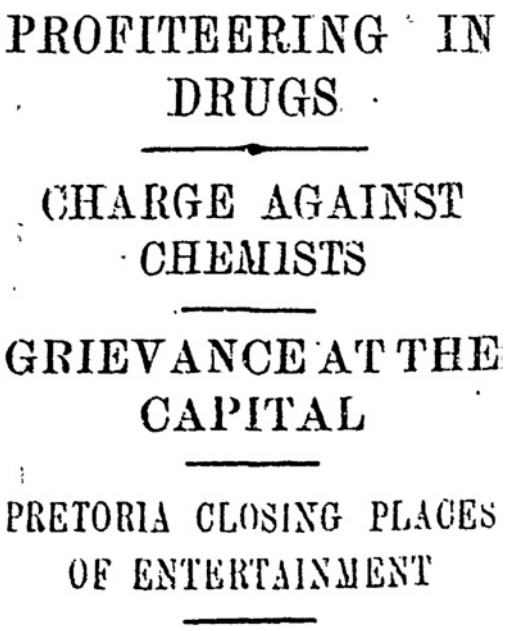
The epidemic continued to rage over the following week, creating immense pressure on the gravediggers whose numbers were depleted by illness. The severity of the epidemic did, however, begin to abate. By 15 October, the number of hospitalised mineworkers had dropped to 3 000, and there had been a reduction in admissions to the Johannesburg General Hospital. A new hospital for mineworkers was opened at Village Deep, but it did seem that the epidemic had run its course on the mines, although it continued to rage in collieries on the edge of the Rand.[183]

A problem emerged in poorer communities when pharmacists were discovered charging exorbitant prices for medicines and food as supplies became scarce. On 17 October, municipal depots for medicines and soups, mainly for 'poor white' and coloured neighbourhoods, were set up in Jeppe Central, Doornfontein, Newlands, Melville, Milner Park and Vrededorp, often at local schools.[184]

By Friday 18 October, the Acting Medical Officer of Health in Johannesburg, Lieutenant Milne, was able to announce that 'the epidemic is well in hand and reports from all the depots indicate that the disease is rapidly subsiding'.[185] The improvement was most marked in the areas of the original outbreak – Marshalltown, Fordsburg, Vrededorp, the Malay Location and Doornfontein – but there were still problems in the eastern suburbs of Jeppe and Troyeville, and in the outer-lying suburbs in the north. Johannesburg had entered a phase of reduced infection but high deaths. Two days earlier, new admissions to the Johannesburg

Figure 16: Headlines from the *Rand Daily Mail*, 1918

SOURCE: With permission, African Newspapers Electronic Resource, World Newspaper Archive


PROFITEERING IN DRUGS

CHARGE AGAINST CHEMISTS

GRIEVANCE AT THE CAPITAL

PRETORIA CLOSING PLACES OF ENTERTAINMENT

General had dropped from 99 to 48, but Brixton Cemetery had a record 100 funerals on 17 October.[186] With a growing number of individuals slowly recovering, Hospital Hill School in Johannesburg was opened as a convalescent hospital, with authorities also advising individuals to stay at home rather than go to overcrowded hospitals.[187]

Unlike the pneumonic plague of 1904, there was a more even distribution of infection across race groups, but there was still racial targeting in the responses to the epidemic, although differently across municipalities. Krugersdorp required all individuals wishing to move across municipal boundaries to acquire travel passes but refused passes for Africans.[188] In Waverley, Johannesburg, an employer

182 *Rand Daily Mail*. 17 October 1918. p.5.
183 *Rand Daily Mail*. 15 October 1918. p.6.
184 *Rand Daily Mail*. 17 October 1918. p.5.
185 *Rand Daily Mail*. 18 October 1918. p.5.
186 Ibid.
187 *Rand Daily Mail*. 14 October 1918. p.5.
188 *Rand Daily Mail*. 12 October 1918. p.8.

reported that an African man was seriously ill but when the ambulance arrived, they found that he was still being forced to work in the garden. To their credit, the Health Committee called for strong action against 'careless or callous employers'.[189] On 19 October, there was a report of a 'disease den' found on a smallholding north of Johannesburg. When inspected, two African tenants on the premises of a white family were found dead, and another 10 were lying sick. The owner was charged with 'harbouring natives'.[190]

Johannesburg was still not in an enforced lockdown, merely advising its residents not to go to public places, including theatres and cinemas (then called 'bioscopes'), but the fearful public generally heeded the advice and audiences were small even for the most popular films. Nevertheless, other authorities along the Witwatersrand were critical, saying that their residents went into Johannesburg for entertainment, returning with infection.[191] An issue arose around church services. On Saturday 19 October, newspapers advertised the services for the following day. St Mary's Anglican Cathedral cancelled its evensong but held an open-air service in the morning; Rosebank Union and the Baptist Church in Plein Street cancelled services, while St Georges Presbyterian advertised that 'the church was thoroughly disinfected between services'. The Congregational Church in Yeoville advertised the theme for the evening service as 'pestilence and punishment'. Most other churches remained open, with a reduced number of services and no Sunday school.[192]

By 18 October, Johannesburg officials were in fact discussing sending support to district towns where the disease was still raging. Conditions were deteriorating in Pretoria, where a temporary hospital was opened on the showgrounds; there was a serious outbreak in Krugersdorp, where the Town School was now a temporary hospital; and Vereeniging was at a standstill.[193] In Potchefstroom, there was a severe outbreak in the local prison, although conditions had normalised in Roodepoort.[194] Further afield, the situation was even more serious. The disease was said to have run its course in Cape Town but was ravaging the *platteland* (countryside). In Bloemfontein, over 800 deaths had been recorded, and there was a severe outbreak in Southern Rhodesia.[195] There was, however, no reporting yet of the devastation that was being wrought in South Africa's 'Native Territories'.

Remarkably, it was only on 23 October that there were the first reports of any form of intervention from national government and, even then, the intervention was insubstantial. The Acting Prime Minister made a representation to the Cape Town City Council to close theatres and suspend church services, but the epidemic was already waning in Cape Town. There were reports on 23 October that the situation in Pretoria was still grave although deaths had peaked; conditions in Krugersdorp were critical; tented camps were being constructed in Potchefstroom; disease was spreading in the Eastern Transvaal; and deaths in Bloemfontein had topped 1 000.[196] A new concern emerged in Johannesburg around the security of food supplies as a result of the worsening conditions in rural districts. Although the situation was not regarded as severe, there was a decrease in the supply of cattle, poultry and grain, and the price of other commodities was rising.[197]

It was only on 24 October that reports began appearing of the disaster in the 'Native Territories', although with a decided lack of detail. The *Rand Daily Mail* reported that, 'In some cases, small communities have been wiped out almost completely, and it will probably be impossible ever to obtain accurate statistics as to the mortality, which can be directly attributable to the epidemic.'[198] This vagueness contrasted with the detailed statistics that emerged from municipalities towards the end of October.

189 *Rand Daily Mail*. 18 October 1918. p.6.
190 *Rand Daily Mail*. 19 October 1918. p.8.
191 Ibid.
192 Ibid., p.4.
193 Ibid.
194 Ibid., p.8.
195 *Rand Daily Mail*. 21 October 1918. p.6.
196 *Rand Daily Mail*. 23 October 1918. p.6.
197 Ibid.
198 *Rand Daily Mail*. 24 October 1918. p.6.

The Cape Peninsula had over 10 000 deaths, Kimberley reported 4 545 to date, Bloemfontein had over 1 200, Pretoria over 1 000, Potchefstroom 234, Roodepoort 155, and so the list continued.[199] A national statistic was impossible to calculate and national government made no attempt to provide it. After all, influenza was not a notifiable disease nationally, and it was up to local authorities whether they made it so.

The situation in Johannesburg remained positive, and attention was turning to dealing with the aftermath of the crisis and providing support for other areas. Places like Benoni had staved off the crisis for a time with their containment measures, but the epidemic had invariably arrived and support was needed.[200] The Town Treasury in Johannesburg was depleted and the question was whether the National Treasury would provide support.[201] While Johannesburg was reluctant to confront central government for its absence during the crisis, other municipalities were more outspoken: Pretoria Town Council recorded its 'disappointment' at the apathy of national government,[202] while Bloemfontein Town Council 'severely censured' national government.[203]

While inter-governmental relations had been shaken by the crisis, the Transvaal Provincial Administration and the Johannesburg Town Council worked closely together, with the provincial government drawing on the well-established health expertise in Johannesburg, in supporting small municipalities. The Administrator of the Transvaal praised Johannesburg for its readiness to send assistance to country districts and 'congratulated Johannesburg on being one of the most fortunate towns in the Union in respects of the manner in which the epidemic had been handled and successfully tackled'.[204]

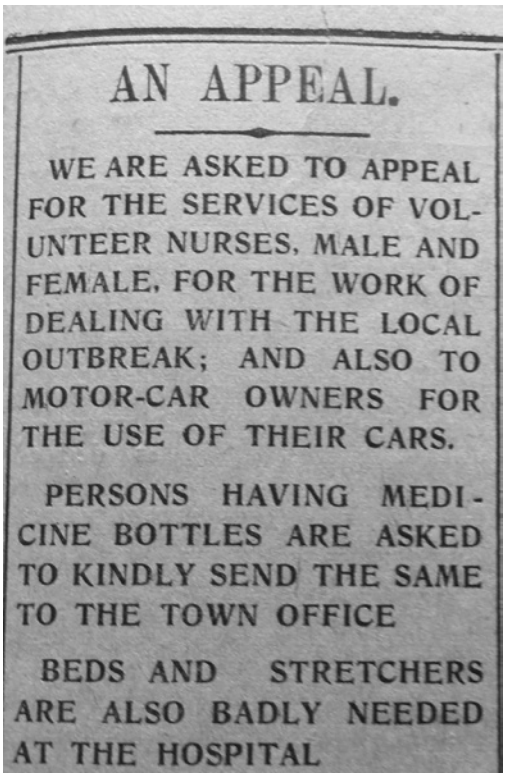
There was some reflection on the crisis emerging in the media, but tentatively so. A judge of the Criminal Court in Johannesburg reflected on the way the epidemic had affected poorer residents of the town disproportionately to others. He expressed 'the hope that one good result of the epidemic would be a better understanding by the more favoured classes of the vile conditions under which the poor had to live'.[205] Regretfully, however, the more enduring lesson taken from the outbreak by the white elite was the need to be more rigorous in keeping the races segregated.[206]

For Johannesburg at least, November was a much easier month than October. The emergency hospital facilities began closing by the end of October, although the Medical Officer of Health took a decision not to reopen the schools, and matriculation examinations were delayed to mid-November.[207] The Union government began the process of preparing vaccines in its bacteriological laboratory, although it was said to be a tedious process and vaccines were tightly rationed.[208] Perhaps stung by the criticism, national government tried to play some coordinating role, shifting nursing staff, for example, from areas where the epidemic was abating, to places where it was still raging.[209]

On 7 November, an announcement was made that schools would reopen on 18 November, but that no children from outlying districts would be admitted.[210] There was also only one reported death in Johannesburg on 7 November,[211] while the mood across the town changed from sombre to joyful, with the announcement of the signing of the Armistice on 11 November, which ended the fighting in Europe.[212] Even as the epidemic had raged, Johannesburg had

199 Ibid.; *Rand Daily Mail*. 29 October 1918. p.8; 1 November 1918. p.3.
200 *Rand Daily Mail*. 24 October 1918. p.6.
201 *Rand Daily Mail*. 29 October 1918. p.8.
202 *Rand Daily Mail*. 4 November 1918. p.5.
203 *Rand Daily Mail*. 6 November 1918. p.8.
204 *Rand Daily Mail*. 7 November 1918. p.6.
205 *Rand Daily Mail*. 29 October 1918. p.8.
206 *Rand Daily Mail*. 13 December 1919. p.12.
207 *Rand Daily Mail*. 31 October 1918. p.7.
208 Ibid.
209 Ibid.
210 *Rand Daily Mail*. 7 November 1918. p.6.
211 *Rand Daily Mail*. 8 November 1918. p.8.
212 *Rand Daily Mail*. 13 November 1918. p.6.

Figure 17: Notices in the *Potchefstroom Herald*, 15 and 18 October 1918
SOURCE: With permission, the Potchefstroom Museum



AN APPEAL.

WE ARE ASKED TO APPEAL FOR THE SERVICES OF VOLUNTEER NURSES, MALE AND FEMALE, FOR THE WORK OF DEALING WITH THE LOCAL OUTBREAK; AND ALSO TO MOTOR-CAR OWNERS FOR THE USE OF THEIR CARS.

PERSONS HAVING MEDICINE BOTTLES ARE ASKED TO KINDLY SEND THE SAME TO THE TOWN OFFICE

BEDS AND STRETCHERS ARE ALSO BADLY NEEDED AT THE HOSPITAL

APPEALS.

HOW TO HELP.

TO-DAY'S POSITION

NURSING—THERE IS STILL NEED FOR THE SERVICES OF NURSES FOR PRIVATE WORK.

MOTOR-CARS—OFFERS OF MOTOR-CARS FOR TRANSPORT PURPOSES SHOULD BE MADE TO THE MAGISTRATE.

OLD SHIRTS, OLD PYJAMAS, ETC., ARE BADLY WANTED FOR MALE PATIENTS IN THE NATIVE HOSPITAL. PARCELS CAN BE SENT TO THE "HERALD" OFFICE.

OLD NIGHT APPAREL FOR FEMALE PATIENTS IS ALSO APPEALED FOR BY MISS SALTMARSH.

SOUP IN ANY QUANTITY WILL BE GLADLY RECEIVED AT THE WESLEY HALL TO AUGMENT THE SUPPLIES FROM THE SOUP KITCHEN, AS THE DEMAND IS VERY GREAT.

FRESH EGGS AND MILK CAN ALSO BE PUT TO GOOD USE, IF SENT TO THE SOUP KITCHEN. THERE ARE MANY URGENT CALLS, AND THE DEMAND IS UNLIMITED.

received daily reports of its young men dying in the battlefields of France and Belgium. Now, both the epidemic and the war were effectively over. On 14 November, after a splurge of patriotic celebration, Johannesburg was reported to be 'tired but happy'. In Krugersdorp, an effigy of the Kaiser was burned in gleeful celebration, but there was gloomy news from Boksburg, where the hospital surgeon, Dr William Frederick, succumbed to the flu, dying of pneumonia.[213]

On 8 November, the Chamber of Mines reported that of the 191 000 mineworkers on the Witwatersrand, 61 000 had been treated in hospital, and 1 147 had died.[214] The death rate was dramatically lower than on the Kimberley diamond fields, provoking a lengthy debate as to why.

On 9 November, the Special Committee that had coordinated efforts to contain the epidemic announced it would no longer meet,[215] and on 14 November, the *Rand Daily Mail* proclaimed that 'Spanish flu has been conquered in Johannesburg'.[216] With no deaths reported on 14 November, the Medical Officer of Health announced that all schools could be opened without restriction on the coming Monday,[217] although regulations were later promulgated to keep sick children away from school.[218]

The attention turned to other places. In Pretoria where municipal health infrastructure was far weaker than in Johannesburg, the Town Engineer spoke of 'the absolute chaos that reigned for a few weeks in our midst' and of the lessons learned from the crisis, including the need for municipal housing, land laws, requirements that property owners maintain sanitary conditions, and for a solution to the 'poor white problem'.[219] There were continued outbreaks in rural areas and small settlements north of Johannesburg, in places such as Muldersdrift, Hekpoort, Kromdraai and Sterkfontein, and the reaping season in these areas was seriously disrupted.[220] In Potchefstroom, the Chief of the Baralong died of the flu.[221] There was also the emerging problem of infected soldiers returning from the battlefield.[222]

There were reports of civic action, with volunteer work by agencies such as the Salvation Army, Boy Scouts, Automobile Club, Red Cross and perhaps lesser-known organisations such as the Hebrew Order of the Druids.[223]

The disease lingered in the rural parts of South Africa through December, but the major concern at the time was Portuguese East Africa, a major source of labour recruitment for the Witwatersrand mines, and mining companies reported a negative effect on operations.[224] On 11 December, there was a report of 'influenza raging in Lourenço Marques'.[225] These concerns notwithstanding, authorities turned their attention to the aftermath of the disaster. In the Transvaal, local authorities supported by the Provincial Administrator came together demanding that the Union government should cover the costs of handling the epidemic.[226] The Union government delayed its response but did set up an Influenza Epidemic Commission, which began its sittings on 6 December.[227]

In January 1919, the mines announced that they had suffered a modest drop of output as a result of the flu, with monthly output dropping from 740 210 ounces of gold in August 1918 to 641 245 in December 1918, the lowest since 1914.[228] The shortage of African labour

213 *Rand Daily Mail*. 14 November 1918. p.3.
214 *Rand Daily Mail*. 8 November 1918. p.7.
215 *Rand Daily Mail*. 9 November 1918. p.10.
216 *Rand Daily Mail*. 14 November 1918. p.4.
217 Ibid., p.3.
218 *Rand Daily Mail*. 20 November 1918. p.6.
219 *Rand Daily Mail*. 14 November 1918. p.4.
220 *Rand Daily Mail*. 7 November 1918. p.7; 18 November 1918. p.5.
221 *Rand Daily Mail*. 9 November 1918. p.7.
222 *Rand Daily Mail*. 20 November 1918. p.6.
223 *Rand Daily Mail*. 8 November 1918. p.5.
224 *Rand Daily Mail*. 10 December 1918. p.7.
225 *Rand Daily Mail*. 11 December 1918. p.7.
226 *Rand Daily Mail*. 22 November 1918. p.6; 27 November 1918. p.6.
227 *Rand Daily Mail*. 5 December 1918. p.8.
228 *Rand Daily Mail*. 11 January 1919. p.6.

affecting output continued for another number of months, creating challenges for the low-grade mines in particular. Some mines increased the use of mechanical tools to compensate, but there were limits to this. One of the challenges with recruiting was a restriction from 1913 on recruitment of those from tropical areas north of 22°S as a result of the susceptibility of these recruits to pneumonia. In May 1919, the Chamber of Mines wrote to the Acting Prime Minister, F.S. Malan, referring to the 'constantly decreasing supply of native labourers' and warning that

> nothing can now prevent a number of important mines, employing a large number of Europeans and upon whose operations the prosperity of a considerable section of the Witwatersrand depends, from ceasing operations in the next few months. The situation is one of the utmost gravity, its most serious aspect being the unemployment and distress that are bound to follow.[229]

The government did in fact set up a Commission of Enquiry into the situation of 21 low-grade mines along the Witwatersrand, which recommended recruiting above 22°S to be permitted, but the government did not accept this. A moderate increase in the price of gold alleviated the situation by July 1919, and there was a reprieve in the position of some of the mines. However, the difficulties that followed the influenza epidemic arguably contributed to the conditions that led to the Rand Revolt of 1922.[230]

There were further political repercussions for the Pretoria Town Council, for example, which was sharply criticised for its inertia during the crisis,[231] and General Hertzog's nationalists brought charges of neglect against the government in parliament.[232] The controversial nationalist, Tielman Roos, caused a stir when he referred to the influenza as a 'khaki pest', suggesting that it came to South Africa from Great Britain.[233]

The Influenza Commission reported in January 1919, calculating that the flu had caused 139 481 deaths in South Africa;[234] but, as indicated, this figure has since been dramatically upscaled by historians who pointed out that the disease was not notifiable and that the vast majority of deaths in the 'Native Territories' were not reported.

The epidemic was in fact not quite over, as South Africa would still experience a third wave of the Spanish flu. There were reports of a new outbreak in Great Britain, and on 22 February, the *Rand Daily Mail* indicated that flu had broken out in Durban, although most cases were mild.[235] On 10 March, 'fresh cases of influenza' were reported in Johannesburg, and for the first time, medical workers were seen wearing masks.[236] This time around, there was a fairly quick response from authorities and a greater attempt at coordination. Municipalities on the Witwatersrand came together to develop joint strategies and to call on the national Minister to make influenza a notifiable disease.[237] The new Public Health Act did in fact give the Minister authority to do this.

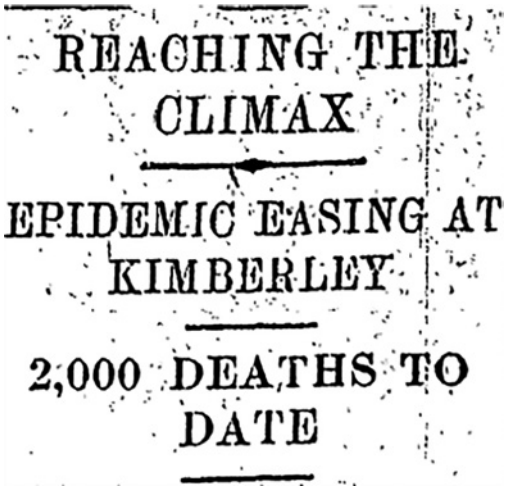
During May 1919, there were reports of a 'severe reoccurrence in Pretoria'[238] and 'a good deal of influenza in Johannesburg'.[239] The epidemic did in fact persist through the winter, and there was a rise in hospital admissions, but cases were generally mild and death rates during this third wave were low.

The three waves of the Spanish flu left many questions in their wake. The first had to do with the massive differences in death rates across the country. Howard Phillips used the Commission report, municipal statistics and other sources to estimate death rates across the country. In Johannesburg, there were 2 284 reported deaths in a population of 140 062,

229 Cited in Phillips, 1984, p.15.
230 Ibid.
231 *Rand Daily Mail*. 9 January 1919. p.8.
232 *Rand Daily Mail*. 6 February 1919. p.6.
233 *Rand Daily Mail*. 8 February 1919. p.8.
234 *Rand Daily Mail*. 24 January 1919. p.7.
235 *Rand Daily Mail*. 22 February 1919. p.7.
236 *Rand Daily Mail*. 10 March 1919. p.5.
237 *Rand Daily Mail*. 11 March 1919. p.11.
238 *Rand Daily Mail*. 15 May 1919. p.8.
239 *Rand Daily Mail*. 16 May 1919. p.8.

Figure 18: Headlines from the *Rand Daily Mail*, 1918

SOURCE: With permission, African Newspapers Electronic Resource, World Newspaper Archive


REACHING THE CLIMAX

EPIDEMIC EASING AT KIMBERLEY

2,000 DEATHS TO DATE

with a death rate of 8.81 per 1 000.[240] There was a slight variation along the Witwatersrand, with Benoni at 11.95 per 1 000, Boksburg/Springs at 7.65, Germiston at 7.64 and Krugersdorp at 8.1. The situation was worse in the wider region, with Heidelberg and Vereeniging at 17.42, Pretoria at 21.19, and some smaller towns in the Transvaal at over 30 per 1 000.[241]

Elsewhere in the country, figures differed more dramatically. In Durban, the outbreak was even milder than in Johannesburg, with a death rate of only 5.73 per 1 000. Cape Town had a high death rate of 34.78, while Port Elizabeth's stood at 42.2, and Kimberley at a shocking 75.66. The other high levels in the Cape Province were in the Border region, including in East London, but the greatest devastation was in the Transkeian Territories, where death rates reached over 80 per 1 000 in some districts.[242] Overall, the national mortality rate in South Africa was estimated to be 22.8 per 1 000, many times more than for Johannesburg specifically.

Why did Johannesburg, and indeed the wider Witwatersrand area, come off so lightly? While the quality of public health institutions and interventions may explain part of the differential, especially in relation to the Transkeian Territories, it does not explain the differential in relation to places like Cape Town, Port Elizabeth and Kimberley. The most puzzling aspect is the differentials in death rates between mineworkers on the Witwatersrand and those on the diamond mines around Kimberley. It is unlikely that there was a substantial difference in living conditions and healthcare between the De Beers-controlled mines in Kimberley and those controlled by Corner House and other companies on the Witwatersrand. And yet, mineworkers around Kimberley were 35 times more likely to die of influenza than those on the Witwatersrand. An extraordinary 22.4% of mineworkers around Kimberley died during the epidemic compared to 0.6% on the Witwatersrand. The puzzle may have been solved recently, with Shanks et al. suggesting that workers on the Witwatersrand had a degree of immunity as they had contracted an earlier and milder version of the Spanish flu (wave one) before the more virulent version arrived (wave two).[243] Newspaper reports do indeed suggest that an earlier wave arrived on the Witwatersrand from Durban in September before 'Black October', which was not the case in the Cape Colony, and this may also explain why Durban and towns along the Witwatersrand had significantly lower death rates during 'Black October' than the port cities and towns in the Cape.

The Influenza Commission was unable to say definitively why only 11 726 of their calculated 139 471 deaths were white. They referred to issues such as unhygienic housing, lack of knowledge of medical care among black Africans and prejudice against Western medicine as reasons for the number. They did not, however, refer to the obvious: the extreme disparity in the quality of healthcare across the races.

The most immediate policy-related and institutional outcome of the 1918/19 epidemic was the creation of a national public health system in South Africa. While a Public Health Bill had been drafted in 1913, it languished in the parliamentary process

240 Phillips, 1984.
241 Ibid.
242 Ibid.
243 Shanks et al., 2010.

Figure 19: Johannesburg Hospital, early 1900s
SOURCE: With permission, Artefacts.co.za

until the epidemic, when it was given a sudden boost of urgency. During the epidemic, it was local authorities that had to battle with the epidemic, but the pandemic catalysed the formation or strengthening of centralised public health authorities across many countries, including Great Britain, Canada and South Africa.[244] The pandemic also contributed to the accelerated passage of the Housing Act, 1920, which provided national funding for the municipal-level construction of public housing.[245] An institutional response to the epidemic was not specific to South Africa. Humphries explains how in Canada, for example, the pandemic laid the foundations for a more interventionist national state.[246]

In this sense, the 1918/19 pandemic had an enduring impact on South Africa, as it did elsewhere. It was the last major influenza epidemic to strike the country; but, as we will see, there were other outbreaks where loss of life exceeded the average of an annual influenza season.

244 Tomkins, 1992.

245 For details on the process leading to the Housing Act, see: Mabin, A. (2020) 'A Century of South African Housing Acts 1920–2020'. *Urban Forum*. DOI:10.1007/s12132-020-09411-7

246 Humphries, M. (2013) *The Last Plague: Spanish Influenza and the Politics of Public Health in Canada*. University of Toronto Press: Toronto.

Polio epidemics of 1918, 1944/45 and 1948

In 1918, 1944/45 and 1948 there were severe outbreaks of poliomyelitis (polio) in Johannesburg, which had an enormous impact on children, through death and disability. The outbreaks happened in the wake of the two world wars, when medical personnel and supplies were scarce and, possibly, also because the polio virus was carried to South Africa by returning soldiers. Our knowledge of the epidemics come mainly from the work of Mary Wade, who wrote an excellent dissertation on the topic, as well as from media reports.[247]

The socio-spatial patterning of this disease was different to the others. In the other epidemics, Johannesburg came off relatively lightly, with the most virulent outbreaks in coastal cities, small towns and rural areas. With polio, however, Johannesburg was at the epicentre. In the other epidemics, poorer households experienced the burden of disease disproportionately; with polio, rates among whites were 10 times greater in per capita terms than among black Africans. The reason, it would seem, had to do with extreme differentials in infant mortality rates. In African communities with high infant mortality, many children vulnerable to polio had died of other causes. When they were afflicted by polio, the disease was often hidden by other afflictions such as dysentery.[248] Polio was the one disease that could not easily be racialised by the white elite because it was largely spread *among* whites, but there were still circulating rumours that African domestic workers brought the disease from the slums.[249]

Although there were cases of polio from November 1917, the epidemic was recognised in February 1918, and was in full swing by March 1918, when around 100 children in Johannesburg were struck down with the disease. This was the first time that polio reached epidemic form in South Africa, having arrived locally when soldiers returned from the Middle East.[250] The incidence rate in the white community was around one per 1 000, but there were much higher rates locally, with severe outbreaks, for example in Modderfontein and Village Reef. Although there were only 24 deaths in the epidemic, the disease caused immense social anxiety and left a legacy of disabled children.[251]

As with the influenza epidemic, there was no national health infrastructure to speak of, and containment was a municipal matter. While Johannesburg's Health Department was generally lauded for its efforts in containing the other epidemics, it was sharply criticised this time around. The respected Medical Officer of Health, Dr Porter, was on military duty, and his stand-in, Dr Gibson, lacked experience and authority. He delayed in acting, only requesting the Town Council to make polio a notifiable disease when the epidemic was already fully active, and did little to enforce containment measures. He was severely censured by the Town Council, finally resigning in March 1918 to allow Dr Porter to resume his work. Schools were eventually closed, and there were restrictions on children attending cinemas, theatres and churches. However, other municipalities on the Rand did not follow suit, and the daily movement across municipal boundaries complicated matters.[252]

The Health Department was operating in a difficult context as there was little medical knowledge on what to do about polio. It broadly followed the American approach of isolating infected individuals, but many of the local doctors were sceptical that polio was personally transmitted and were resistant to these measures. In any event, most carriers were asymptomatic, with only children developing the disease. The epidemic eventually petered out as winter arrived. Although the influenza epidemic (which arrived later in the year) received far more attention, the polio epidemic highlighted many of the deficiencies in the public health system and was a factor leading to the accelerated passage of the Public Health Act, which

247 Wade, 2006; Wade and Southey, 2013.
248 Ibid.
249 Ibid.
250 Gear, J. (1963) 'Background to the Poliomyelitis Vaccination Campaign'. *South African Medical Journal*. 37(May). pp.499–502.
251 Ibid.
252 Ibid.

gave a national health authority the power to declare diseases notifiable nationwide.[253]

After 1918, there was a low level of polio infections, with isolated cases in Johannesburg, although there was a local outbreak in Bloemfontein in 1934 with a 35% mortality rate. The problems started again on the Rand towards the end of World War II when the local surveillance of disease was at a low ebb. In South Africa, the new epidemic started in Durban in September 1944, also apparently arriving locally from the Middle East with returning soldiers, and spreading to the Transvaal by mid-October. By the end of October, Johannesburg had recorded its first death.[254] The disease peaked in December at the height of summer but tapered off as the weather cooled in March and April 1945. There were 201 cases in Johannesburg (174 among whites), with 26 deaths (22 white and four black) and 48 disabilities.[255]

The death rate was 13% in this epidemic, compared with 24% in 1918, indicating some progress in dealing with the disease. Wade acknowledged that 'health authorities and doctors in Johannesburg could only operate within the boundaries of their understanding of the disease at the time'.[256] At that time, it was believed that flies were the main vector of the disease and that fly control was the most important preventative measure. Gradually, however, trial and error had led to more effective prevention and treatment, although there was not yet any vaccine.

The next epidemic came in 1948, but although the disease was more widespread than before, and there was extreme panic amongst parents, death rates dropped to only 4%.[257] By 28 April 1948, there were 24 deaths from about 600 cases provincially (but Johannesburg-centred), reflecting either improved treatment or a milder version of the virus than previously experienced.[258]

By 1948, decisions on school closure were made by the Administrator of the Transvaal Province and not by the local Medical Officer of Health. Province-wide closures were controversial, however, as they negatively affected the districts where there were no polio outbreaks.[259] The compromise was to cancel school assemblies, sports events and other gatherings and to make school attendance voluntary.[260] In Johannesburg, many parents kept their children at home, and there was a report of a significant increase in the demand for toys as parents tried to keep bored children entertained.[261]

In Johannesburg, there was a peak of 90 infections in February, with 251 cases in total up to the end of April 1948.[262] However, the epidemic lingered on much later into winter than anticipated, with several still reported in June when school activity returned to normal. In terms of incidence rates, the waning epidemic was rated as the worst in the world during 1948 in per capita terms.[263]

The 1945 epidemic also prompted local research, and important advances were made by a research team under Dr James Gear, Head of the Medical Laboratory Service of the South African Medical Corps (SAMC). In 1948, a national appeal led by the Mayoress of Johannesburg led to the establishment of the Poliomyelitis Research Fund and to the formation of the Poliomyelitis Research Foundation headed by Dr James Gear.[264] The Foundation was to play a major role in combating the disease and engaging closely with the South African Institute of Medical Research.[265]

253 Ibid.

254 Gear, 1963.

255 Johannesburg was more severely affected than most other places in the Union of South Africa because it was affected earlier – in early summer – than elsewhere (except Natal). Other places experienced the epidemic when the weather was already cooling and the disease was waning.

256 Wade, 2006, p.243.

257 *Rand Daily Mail*. 14 May 1948. p.9.

258 *Rand Daily Mail*. 28 April 1948. p.6.

259 *Rand Daily Mail*. 22 April 1948. p.7.

260 *Rand Daily Mail*. 8 June 1948. p.11.

261 *Rand Daily Mail*. 8 April 1948. p.11.

262 *Rand Daily Mail*. 3 May 1948. p.9.

263 *Rand Daily Mail*. 19 June 1948. p.7.

264 Gear, 1963.

265 For a history of the Institute, see: Murray, J. (1963) 'History of the South African Institute for Medical Research'. *South African Medical Journal*. 37(April). pp.389–395.

Figure 20: Postcard of the Kensington Sanitorium
SOURCE: Illustration in the public domain

The polio epidemics of the 1940s arguably played a significant role in the creation of a medical research infrastructure in South Africa.

Polio remained a major challenge in the 1950s, with an outbreak in 1955 continuing until 1957.[266] In 1955, the Provincial Administrator extended summer holidays by a month to contain the outbreak.[267] However, the promise of vaccines brought hope. In July 1955, the Minister of Health announced that the South African Poliomyelitis Research Foundation had produced a safe vaccine suitable for South African conditions, which was developed in parallel with the development of a vaccine by Dr Salk in the US.[268] There was, however, resistance to the use of the vaccine, with the East London division of the Medical Association of South Africa, for example, initially advising parents not to subject their children to vaccination.[269] Also, in 1957, the Research Foundation could only produce around 80 000 doses of the vaccine, which was insufficient to contain the epidemic.[270] By 1958, however, around 750 000 children were given the vaccine and, by the early 1960s, the vaccine was nearly universal, effectively ending polio in its epidemic form.[271]

The apparent immunity of the African community to polio started receiving attention from researchers internationally in the 1940s. However, in the 1950s, as childhood mortality rates among black Africans gradually reduced, so polio cases became more visible in the African areas of Johannesburg and, during the 1957 outbreak, African children were affected to almost the same degree as white children.[272] With vaccines targeted first at white children, it was black African communities that were most affected by polio at the end of the 1950s.[273] From the 1960s onwards, there were minor local outbreaks of polio, mainly in black communities. In the early 1980s, for example, a polio outbreak in rural Transvaal led to concern over a possible outbreak in Soweto.[274]

266 Gear, 1963.
267 *Rand Daily Mail*. 15 January 1955. p.1.
268 *Rand Daily Mail*. 28 July 1955. p.1.
269 *Rand Daily Mail*. 25 August 1955. p.1; Gear, 1963.
270 *Rand Daily Mail*. 10 January 1957. p.6.
271 Gear, 1963.
272 Ibid.
273 Ibid.
274 *Rand Daily Mail*. 15 July 1982. p.6.

Scarlet fever epidemics of 1917/18, 1928, 1931, 1934 and 1941

The other childhood disease which came in epidemic form was scarlet fever. In the early 20th century, it was still a leading cause of death among children. It was only once penicillin became widely available to treat infections from the early 1940s that its potency was reduced. While scarlet fever was endemic in Johannesburg with cases every year, there were outbreaks every few years, with some reaching epidemic levels. Scarlet fever was associated mainly with the dry winter months, with outbreaks quickly dissipating once the rains arrived in September or October.[275]

While information on the disease during Johannesburg's earliest years is sparse, we know that there was an outbreak of scarlet fever in nearby Germiston in 1909. The municipal Medical Officer of Heath was on leave and no one was available to attend to the problem, causing an uproar in the Town Council.[276] In July 1916, the Board of the Johannesburg General Hospital met for its annual meeting. The main concern of the Board was whether enemy agents were working in the hospital, but it did note that a Nurse Scott had contracted scarlet fever at the hospital and moved to the Rietfontein *lazaretto,* and that a Nurse Nightingale had died at the *lazaretto,* possibly of scarlet fever.[277] This was an indication of the vulnerability of nursing staff, a concern which persists through the various forms of epidemic in Johannesburg, but also an indication of the risks of treating patients with infectious diseases in a general hospital.

In November 1916, a Fever Hospital was opened in Braamfontein, Johannesburg, for infectious patients, with separate wards for measles, diphtheria and scarlet fever. The hospital accommodated 50 patients in total.[278] Soon after opening, however, the hospital was nearly overwhelmed by an outbreak of scarlet fever. In the year up until July 1917, there were 213 reported cases of scarlet fever, but this increased to 2 083 in the year ending July 1918, with 440 cases admitted to the Fever Hospital.[279] In July 1918, there were 255 reported cases of scarlet fever, with 11 deaths during the month, giving a mortality rate of 4.3%.[280]

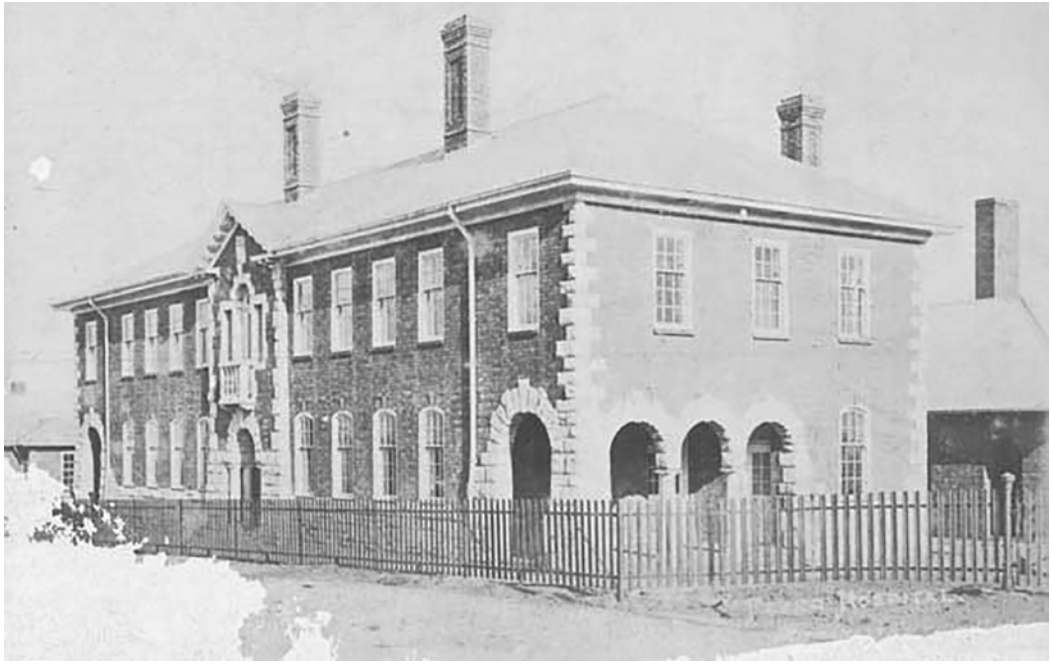
The pressure on the hospital was considerable. Although built for 50 patients, it had an average of 80 patients in the first part of 1918, rising to 100 patients as the epidemic peaked in August 1918. A scandal erupted as scarlet fever cases overflowed into the measles ward and cross-infections occurred.[281]

The 1917/18 scarlet fever epidemic came just before, and partly overlapped, the 1918/19 influenza pandemic, contributing to an extended public health crisis in Johannesburg. As late as September 1918, it was scarlet fever, rather than influenza, which caused the most concern among authorities and the public in the town. Scarlet fever was declared a notifiable disease in terms of the Public Health Act, 1919, but remained a widespread endemic problem in the 1920s, with an epidemic outbreak in 1928. Again, the Fever Hospital overflowed and a nursing home in Parktown, Johannesburg, was made available for patients.[282] In Pretoria, the situation was worse as the 1928 scarlet fever outbreak came together with a severe spike in malaria cases, putting considerable pressure on health facilities.[283]

Although scarlet fever was widespread in the 1920s, it generally took a milder form than in earlier years. Mortality rates among infected patients ranged on an annual basis through the decade from about 1 to 1.6%. This was significantly lower, for example, than the mortality rates for diphtheria, which ranged

275 *Rand Daily Mail*. 23 October 1941. p.5.
276 *Rand Daily Mail*. 10 September 1909. p.2.
277 *Rand Daily Mail*. 6 July 1916. p.9.
278 *Rand Daily Mail*. 20 November 1916. p.9.
279 *Rand Daily Mail*. 9 August 1918. p. 5.
280 *Rand Daily Mail*. 15 August 1918. p.8.
281 *Rand Daily Mail*. 8 August 1918. p.7.
282 *Rand Daily Mail*. 23 July 1928. p.9.
283 *Rand Daily Mail*. 28 May 1928. p.5.

Figure 21: Fever Hospital in Braamfontein
SOURCE: With permission, William Martinson and Artefacts website



between 8.4 and 12.4%, although diphtheria did not take on an epidemic form.[284]

There were outbreaks of near-epidemic scale in 1931, 1934 and 1941, when two annexes had to be hastily constructed adjacent to the Fever Hospital.[285] There was a strong belief, reiterated by the Johannesburg Medical Officer of Health on various occasions, that scarlet fever came in five-year cycles.[286] In fact, the intervals between outbreaks were uneven, and the reasons for epidemic-scale outbreaks were unknown. After 1941, there were no further epidemic-scale outbreaks and, with antibiotics, the illness was far easier to contain.

All outbreaks were disruptive of schooling in Johannesburg, and although schools were not formally closed, many parents kept their children at home.[287] Parents were required to inform their children's schools immediately after a diagnosis of scarlet fever was made; but this did not always happen, requiring the Medical Officer of Health to lecture parents on their 'duty'.[288]

Like polio, cases of scarlet fever were mainly reported among white children and a belief evolved that black children were largely immune to the disease.[289] It was also believed that black children were immune to diphtheria, although not to measles and smallpox. In fact, a French bacteriologist, Dr Zoeller, sent a cable to Johannesburg from Paris in 1925 suggesting that 'negro-blood might be used to treat Europeans',[290] a suggestion that may not have gone down well locally. Later research seemed to

284 *Rand Daily Mail*. 3 April 1930. p.12.
285 *Rand Daily Mail*. 18 November 1931. p.13; 16 October 1934. p.14; 23 October 1941. p.5.
286 *Rand Daily Mail*. 16 October 1934. p.14.
287 *Rand Daily Mail*. 22 September 1941. p.5.
288 *Rand Daily Mail*. 19 October 1928. p.8.
289 *Rand Daily Mail*. 15 August 1918. p.8.
290 *Rand Daily Mail*. 9 February 1925. p.9.

Figure 22: The scarlet fever camp just outside St John's School in Houghton
SOURCE: With permission, St John's College archives

confirm this belief around immunity, although there was no apparent genetic cause; studies also showed no differences in immunity between white Americans and Americans of African origin. Instead, the reason had to do with antibody formation among black children, who had far greater exposure to the related *Streptococcus* virus early in life than white children.[291]

'Minor' epidemics

Until HIV/Aids arrived in full force in the early 1990s, Johannesburg was relatively free of epidemic disease. This is not to imply that there were not severe endemic health challenges, including, for example, tuberculosis on the mines, but there was a sense that the decades between 1950 and 1990 were the golden era of public health, with increasingly widespread use of vaccines containing diseases such as measles, polio and influenza.

Globally, there were a series of influenza (and related) outbreaks from 1918, but South Africa came off quite lightly, and Johannesburg more so than nationally. These outbreaks included the 'Asian flu' of 1957/58, the 'Hong Kong flu' of 1968/69, the 'Russian flu' of 1977/78, the Severe Acute Respiratory Syndrome (SARS) epidemic in 2003, and the Middle East Respiratory Syndrome (MERS) outbreaks from 2012. The year 1957 was an exception to the pattern, as there were around 90 000 deaths in South Africa from influenza that year, significantly more than the 10 000 or so in an average influenza season. In May 1957, there were reports of a virulent flu circulating in East Asia and later accounts of a virulent outbreak in the US. The Minister of Health played a high-profile role in responding to a threatened crisis. He tightened controls at airports and ports and refused permission for the crew of a troopship from Singapore and Colombo to disembark in Durban when it was found that 100 of the 348-strong crew had the flu. However, he acknowledged that the arrival of the epidemic was inevitable, and, at a local level, the Johannesburg City Council set up an emergency epidemic committee to coordinate responses.[292]

291 Murray, J. (1943). 'Bantu Immunity to Scarlet-Fever Toxin'. *Journal of Hygiene*. 43(3). pp.170–172.
292 *Rand Daily Mail*. 11 June 1957. p.1.

On 22 July, there were indeed reports that Johannesburg was in the grip of one of its worst flu outbreaks in decades and, with Black October of 1918 still in living memory, there was considerable anxiety.[293] In the final event, though, the epidemic in Johannesburg proved to be fairly mild although high absenteeism led to the closure of mines and factories during the winter of 1957,[294] and the Johannesburg General Hospital was under severe pressure at the height of the epidemic, with 50 nurses off ill.[295]

As the mild nature of the virus became apparent, fears subsided. The *Rand Daily Mail* acknowledged that the epidemic was certainly disruptive but said that 'it is not a killer epidemic; nor is it a crippling epidemic', and that 'all will be well when the rains come'.[296] In terms of the epidemic at least, all was more or less well by the time the rains arrived in September.

The 1969 influenza came in the run-up to a general election. Widespread vaccination moderated the effects of the epidemic, which were significantly lighter than in 1957, but political rallies were postponed and Prime Minister B.J. Vorster took a leave of absence when he came down with a bad case of the flu.[297] The 1977/78 flu may have provoked more fear than was warranted, but this may have been because it was known locally as the 'Soviet flu'. Johannesburg was not affected by SARS, MERS and the more recent outbreaks until, of course, Covid-19.

In the early 1980s, there were severe outbreaks of cholera in the sprawling informal settlements along the urban–rural interface in the Transvaal Lowveld and KwaZulu homeland. In May 1983, there were reports of 17 481 people treated for cholera nationwide, 3 909 bacteriologically proven cases, and 44 deaths to date.[298] However, in the Southern Transvaal, there were only 159 cases and four deaths, mainly in Westonaria, a mining town on the West Rand. Johannesburg was fortunate to avoid the cholera outbreak in 1983 but two years earlier there were a few cases of suspected typhoid fever in a Rosettenville school.[299]

In 2017/18, South Africa suffered the world's worst ever outbreak of listeriosis, a foodborne disease with a high death rate among individuals with suppressed immune systems. The outbreak was declared on 5 December 2017, with 1 060 cases and 216 deaths reported nationwide by the time the outbreak ended in June 2018.[300] Gauteng (greater Johannesburg and Pretoria) was the national epicentre, with nearly 60% of cases. A small number of production plants were eventually found to be infected with the *Listeria* bacteria, with processed meat identified as the main source of infection. Once the plants were closed and the products recalled, the epidemic dissipated. One of the consequences of the epidemic, reports the WHO, is that South Africa strengthened its food health and safety systems, as well as its early detection and response processes.[301]

The other potential source of epidemics is viral haemorrhagic fevers such as Marburg fever, Lassa fever and Ebola fever. Johannesburg has had sporadic cases of these fevers, but they have all been the result of direct travel of individuals from places in Africa where the disease has been present, or of laboratory infections.[302] There have been no outbreaks associated with community transmission and the risk of this happening is generally considered to be low.[303]

293 *Rand Daily Mail*. 22 July 1957. p.1.
294 *Rand Daily Mail*. 7 August 1957. p.1.
295 *Rand Daily Mail*. 13 August 1957. p.3.
296 *Rand Daily Mail*. 31 July 1957. p.9.
297 *Rand Daily Mail*. 27 August 1969. p.7.
298 *Rand Daily Mail*. 4 May 1983. p.5.
299 *Rand Daily Mail*. 27 August 1981. p.7.
300 WHO. (2018) 'WHO Congratulates South Africa on the End of the World's Largest Listeriosis Outbreak'. [Online]. 4 September. Available at: https://www.afro.who.int/news/who-congratulates-south-africa-end-worlds-largest-listeriosis-outbreak. [Accessed: 28 May 2020].
301 Ibid.
302 For example, a young Australian died of Marburg fever in the Johannesburg General Hospital in 1975 after touring Zimbabwe, and an individual employed at a private pathology laboratory died in Johannesburg of the Congo fever in 2006. Also in 2006, an individual died of Ebola as a result of contact in an aeroplane with an individual who had flown to West Africa. In 2008, an individual who had travelled to Zambia died of a disease related to Lassa fever.
303 Richards, G. (2015) 'Nososcomial Transmission of Viral Haemorrhagic Fever in South Africa'. *South African Medical Journal*. 105(9). pp.709–712; Centers for Disease Control and Prevention. (2020) Ebola Virus Disease Distribution Map: Cases of Ebola Virus Disease in Africa Since 1976. [Online]. Available at: https://www.cdc.gov/vhf/ebola/history/distribution-map.html. [Accessed: 17 July 2020].

HIV/Aids from the 1980s to the present

Gould called HIV/Aids 'the slow plague',[304] but his reference was largely to the US where the epidemic never developed nearly as dramatically as in sub-Saharan Africa. Nevertheless, there is a difference between HIV/Aids, which is mainly transmitted through sexual networks, and viruses where transmission happens through touch or via airborne microbes. While most epidemics are over within weeks or months, the story of HIV/Aids must be told in a period spanning at least four decades.

The origins of the crisis are debated. Generally, 1981 is regarded as the year the epidemic began, as this was when the first cases of a rare pneumonia were reported in young homosexual men in California and New York. However, researchers now believe that a man taking part in a medical study in Kinshasa in the Democratic Republic of the Congo (DRC) in 1951 had HIV, the virus that causes Acquired Immuno-deficiency Syndrome (Aids). In the 1970s, doctors in Central Africa spoke of opportunistic infections and wasting with unknown causes, and when researchers visited Kinshasa and Kigali in Rwanda in 1983, they reported finding at least 62 individuals with Aids.[305]

While HIV/Aids may have had a decades-long presence in Central Africa, in Johannesburg in the early 1980s, the disease was seemingly still contained within the homosexual community, with a few haemophiliacs infected through blood transfusions. In 1982, the first two cases of Aids were identified in male homosexual men who had visited California, and when a random blood sample of homosexual men in Johannesburg was taken later that year, 12.8% were found to have HIV.[306] The first deaths from Aids in South Africa were recorded in 1985.[307]

The first black South African diagnosed with Aids was in 1987, and further investigation revealed that there was a higher prevalence of the disease among mineworkers recruited from other parts of Africa. Studies revealed a 4% prevalence rate among mineworkers recruited from Malawi, and the Chamber of Mines cut back on recruiting from that country.[308] Researchers were to conclude that the epidemic, strongly embedded in Southern Africa by the early 1990s, had crept southwards from Central Africa and was not an extension of the epidemic that had affected gay men.[309] As Gilbert and Walker explained:

> From the data presented it is evident that the pattern of HIV/AIDS in developing countries in sub-Saharan Africa in particular is unique. The pattern emerging in South Africa follows closely. The features of this pattern are as follows: the epidemic is mainly a heterosexual epidemic, the rates of infection in the general population are very high, and the percentage of HIV-positive women is greater than men. An additional unique feature is the young age of onset of infection for women.[310]

Researchers soon established the link between migration and vulnerability to HIV/Aids.[311] Male migrants often lived separately from their wives and often had multiple sexual partners. As Anarfi put it, 'migration acts to increase the extent of sexual networking'.[312] Migrant men and those in highly mobile occupations, such as truck driving, were also

304 Gould, P.R. (1994) *The Slow Plague: A Geography of the AIDS Pandemic*. Blackwell: Hoboken, N.J.

305 Kayirangwa, E., Hanson, J., Munyakazi, L. and A. Kabeja. (2006) 'Current Trends in Rwanda's HIV/AIDS Epidemic'. *Sex Transm. Infect*. 82(sup1). pp.27–31.

306 HIVSA (n/d) HIV/Aids in SA. [Online]. Available at: https://www.hivsa.com/?q=content/hiv-aids-south-africa. [Accessed: 27 May 2020].

307 Ibid.

308 Dickinson, D. (2004) 'Corporate South Africa's Response to HIV/AIDS: Why so Slow?' *Journal of Southern African Studies*. 30(3). pp.627–649.

309 Palca, J. (1991) 'The Sobering Geography of AIDS'. *Science*. 252(5004). pp.372–373; Agyei-Mensah, S. (2005) 'The HIV/AIDS Epidemic in Sub-Saharan Africa: Homogeneity or Heterogeneity?' *Norsk Geografisk Tidsskrift – Norwegian Journal of Geography*. 59(1). pp.14–25; Kalipeni, E. and L.C. Zulu. (2012) 'HIV and AIDS in Africa: A Geographic Analysis at Multiple Spatial Scales'. *GeoJournal*. 77. pp.505–523.

310 Gilbert, L. and L. Walker. (2002) 'Treading the Path of Least Resistance: HIV/AIDS and Social Inequalities – A South African Case Study'. *Social Science & Medicine*. 54(7). pp.1093–1110. [p.1093].

311 See a critical review of this literature in Crush, J., Williams, B., Gouws, E. and M. Lurie. (2005) 'Migration and HIV/AIDS in South Africa'. *Development Southern Africa*. 22(3). pp.293–318; also, Vearey et al., 2011.

312 Anarfi, J.K. (1993) Sexuality, Migration and AIDS in Ghana – A Socio-Behavioural Study. In J.C. Caldwell (ed.). *Sexual Networking and HIV/AIDS in West Africa*. Supplement to Health Transition Review 3. Australian National University: Canberra. pp. 45–67. [p.45].

Figure 23: As part of the Hillbrow Health Precinct, the Esselen Clinic provides HIV- and TB-related treatment
Photograph by Michael Schmucker, courtesy of Nstika Architects

found to engage more frequently than others in high-risk sexual behaviour.[313] In Southern Africa, where the mining industry had established patterns of circulating migration between rural areas and the city, there was fertile ground for the epidemic, and Southern Africa was soon to exceed Central Africa in terms of infection rates.

While initial studies focused on men as the main source of transmission, new studies identified women as the most vulnerable to infection. For example, a study of the mining town of Carletonville, to the west of Johannesburg, revealed that the prevalence of HIV infection was 9.4% for men and 34.4% for women, with a prevalence rate of 66.7% for 24-year-old women.[314] The study revealed the extreme risks of infection for sexually active women. The risk is, however, not only in male-dominated contexts, such as mining towns, where sex work is often concentrated, but more generally across society where studies indicated young women are three times more at risk of infection than young men.[315]

While HIV/Aids clearly did not respect class or race, the sustained spread of the disease was among the poorer black African communities, which had been historically affected by the migrant labour system that had created high levels of urban–rural mobility and had a negative impact on household structure and stability. The major predictors of infection in the modelling of the disease, apart from race, were informality, unemployment and low levels of education. In this respect, HIV/Aids is linked to poverty, disproportionately affecting the most vulnerable in society.[316] Significantly, the disease was not oriented towards either urban or rural areas, reflecting the patterns of oscillating migration between the two.[317]

313 Ibid.

314 Bertran, A., Ballard, R., Campbell, C. et al. (2001) 'HIV Infection among Youth in a South African Mining Town Is Associated with Herpes Simplex Virus-2 Seropositivity and Sexual Behaviour'. *AIDS*. 15(7). pp.885–898.

315 Swanevelder, J.P., Küstner, H. and A. van Middelkoop. (1998) 'The South African HIV Epidemic, Reflected by Nine Provincial Epidemics, 1990–1996'. *South African Medical Journal*. 88(10). pp.1320–1325.

316 Kleinschmidt, I., Pettifor, A., Morris, N., MacPhail, C. and H. Rees. (2007) 'Geographic Distribution of Human Immunodeficiency Virus in South Africa'. *The American Journal of Tropical Medicine and Hygiene*. 77(6). pp.1163–1169.

317 Ibid.

In 1990, HIV prevalence in South Africa among antenatal clinic attendees was 0.7%, a level that suggested that containment was possible. However, even then there was a significant spatial variation, ranging from 0.06% in the Western Cape to 1.61% in KwaZulu-Natal.[318] From that time onwards, there was a sustained increase in infection rates and spatial differences widened. By 1996, it was 3.1% in the Western Cape but 19.9% in KwaZulu-Natal, with high rates also present in Mpumalanga (15.77%), the Free State (17.49%), North West (25.13%) and Gauteng (15.49%).[319] Gauteng emerged as a hub of viral infections: 0.66% in 1990, with a large jump between 1994 and 1995 from 6.44% to 12%. With the end of apartheid, Gauteng was experiencing a migration surge, with large numbers of both South African and other African migrants, and this may explain some of the rapid growth in infection.

In 1998, Swanevelder et al. wrote of nine provincial epidemics, explaining the differential rate of infection by arguing that, although all provinces were not on the same infection curve, they were not exposed at the same time. Each province could expect a slowdown in new infections in the 12th or 13th year of their trajectory and eventually there would be a convergence between provinces.[320] Swanevelder et al. were correct in highlighting the provincial differentials but, in retrospect, they were not correct in arguing that each province was on the same curve. The differentials proved to be resilient, leaving unanswered questions.[321]

One of the consequences of spatial and demographic differentials was social stereotyping. Instead of understanding the historical origins of infection patterns – most importantly, histories of migrant labour – the popular response was to stigmatise. In the early years, it was the gay community that was stigmatised, and then foreign migrant workers, particularly Malawians. Eventually, as the virus spread, black Africans more generally, and especially isiZulu speakers, became the focus of the stigmatisation.[322] In the early 1990s, the right-wing Conservative Party claimed that desegregation of social facilities would put white people at risk of contracting HIV/Aids.[323]

Unlike earlier epidemics, the institutional framing was very different. National government was the dominant player in shaping the response to the epidemic, with provincial and municipal government playing a limited role. Although provincial government had the primary responsibility for managing health services, national government was responsible for directing policy responses, and mainly shaped the way the epidemic unfolded.

Butler refers to a decade of inaction by the National Party government, before the political change in 1994.[324] He suggests that, initially, the inaction was related to an embedded homophobia. There were, however, some initial responses. In 1987, Aids was made a notifiable disease, and in 1988, an Aids Unit and a National Advisory Group were established within the Department of Health.[325]

The early 1990s was a crucial period for containing the epidemic but was institutionally fraught. The outgoing National Party government lacked the legitimacy and the will to tackle the epidemic comprehensively, while the African National Congress (ANC), the government-in-waiting, did not have access yet to the levers of power. There were some interventions though, and HIV/Aids did gradually find its way onto the national agenda as it became increasingly clear that South Africa was facing the prospects of a destructive epidemic. The Department of Health launched an advertising campaign warning of the dangers of HIV/Aids, while the ANC debated internally on whether HIV/Aids was deliberately created to infect black Africans

318 Swanevelder et al., 1998.

319 Ibid.

320 Ibid.

321 While population demographics may explain the differentials between the Western Cape and other provinces, it could not explain the difference between Limpopo, where infection rates remained low, and provinces such as KwaZulu-Natal, Mpumalanga and the North West, where infection rates were high.

322 Mahajan, A., Sayles, J., Patel V., et al. (2008) 'Stigma in the HIV/AIDS Epidemic: A Review of the Literature and Recommendations for the Way Forward'. *AIDS*. 22(2). pp.S67–S79; Nduna, M. and J. Mendes. (2010) 'Negative Stereotypes Examined through the HIV and AIDS Discourse: Qualitative Findings from White Young People in Johannesburg, South Africa'. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*. 7(3). pp.21–27; Tsampiras, C. (2020) Borders of Blame: Histories and Geographies of HIV and AIDS in South Africa, 1980–1995. In Atkinson S. and R. Hunt. (eds.). *GeoHumanities and Health. Global Perspectives on Health Geography*. Springer: Cham.

323 HIVSA (n/d).

324 Butler, A. (2005) 'South Africa's HIV/AIDS Policy, 1994–2004: How Can it Be Explained?'. *African Affairs*. 104(417). pp.591–614.

325 HIVSA (n/d).

through the infection of black sex workers. However, there was also a strong voice within the liberation movement that HIV/Aids had to be tackled head on, as reflected in the Maputo Statement on HIV/Aids in 1990.[326] Chris Hani, General Secretary of the South African Communist Party and Head of the ANC's armed wing, was one of the most forthright of the liberation leaders, insisting that the HIV/Aids threat was real. He warned that, 'We cannot afford to allow the Aids epidemic to ruin the realisation of our dreams.'[327]

By 1992, there was enough recognition of the threat of HIV/Aids across political parties and other social agencies to support the creation of the widely representative National Aids Coordinating Committee of South Africa (NACOSA). NACOSA worked on a broad-ranging negotiated plan dealing with matters including research, prevention, human rights and welfare support, producing a sense of optimism that the epidemic could be contained before it reached the level experienced by countries such as Uganda, for example. This optimism was reinforced in 1994, when the newly elected ANC government adopted the National Aids Plan as one of its first major policy interventions.[328]

However, some of the initial impetus was lost when responsibility for coordinating an anti-Aids strategy was placed in the Department of Health rather than in the Office of the President, as proposed in the National Aids Plan, making the fight against the disease a health issue rather than a multi-sectoral one.[329] In addition, the Department of Health soon became ensnared in a series of controversies, which created a rift in government and an increasingly concerned non-governmental sector.[330]

However, the real disaster in the national governmental response unfolded from 1999, when Thabo Mbeki became President and appointed a new Minister of Health, Manto Tshabalala-Msimang. Mbeki notoriously questioned the link between HIV and Aids, spurring on Aids denialism in the national leadership, and resisting the rollout of antiretrovirals (ARVs) such as AZT, citing concerns with toxicity. National government lost further credibility in the battles against the epidemic when Tshabalala-Msimang was derided internationally for offering good nutrition (garlic and beetroot) as an alternative to ARV treatment.[331]

Mbeki's administration came under increasing pressure from civil society, led by the Treatment Action Campaign (TAC),[332] which challenged both government and pharmaceutical companies in civic action campaigns and court cases, demanding public access to ARVs. By 2000, South Africa had become the epicentre of the global pandemic, and Aids had become the leading cause of death in the country. In 2000, the government set up the South African National Aids Council (SANAC), including representatives from civil society to advise on the formulation and implementation of programmes to address HIV/Aids. SANAC, which was chaired by the Deputy President, went on to become an important instrument for collaborative governance, linking domains and sectors. However, in 2000, deep tension remained between government and civil society. On 5 July 2000, civil society gained a major victory when the Constitutional Court delivered its judgment in *Minister of Health and Others v Treatment Action Campaign and Others* (the TAC Case), upholding the constitutional right of all HIV-positive pregnant women to access ARVs.

Finally, in August 2003, the government relented and agreed to roll out ARVs nationally. The programme took effect from 2004, and evolved into the largest ARV rollout in the world. Mbeki was effectively removed from office in September 2008 and, after a transition period, Jacob Zuma began his presidency in May 2009. While Zuma's presidency was sullied by multiple corruption scandals, it pursued a constructive approach to dealing with HIV/Aids, with a strong focus on testing, education and counselling, in addition to upscaling the provision of ARVs. However, Statistics South Africa reported that there were still 7.97 million

326 'Maputo Statement on HIV and AIDS in Southern Africa'. *Health Policy and Planning*. 5(4). December 1990. pp.386–388.

327 HIVSA (n/d).

328 Ibid.

329 Ibid.

330 These controversies included the *Sarafina II* scandal, in which money donated by the European Union to tackle HIV/Aids was spent on a musical, widely regarded as having little real impact, and active support by the Minister for a controversial and apparently dangerous antiviral treatment called Virodene.

331 HIVSA (n/d).

332 The head of the TAC was Zachie Achmat, who would go on to be nominated for a Nobel Peace Prize.

Figure 24: 'What Aids crisis?' published in the *Sowetan* on 11 February 2004
SOURCE: With permission, Zapiro www.zapiro.com

people living with Aids in South Africa in 2019, representing a 13.53% prevalence in the population.[333] The highest rates of infection remained among women in the 15–49 age category, with a prevalence of 22.71%. More positively, though, Aids-related deaths in South Africa peaked in 2006 at 286 588, or 42.7% of all deaths, declining to 126 805 in 2019, or 23.4% of deaths.[334] Although considerable progress has been made, it remains a significant health problem in South Africa and is now, in many respects, the forgotten epidemic.

National figures obscure the continued spatial variation in infections. The province with the highest prevalence rate is KwaZulu-Natal at 24%, with the lowest being the Western Cape at 10%. Gauteng has an estimated 16.7% infection rate.[335]

While there is a significant literature on the HIV/Aids pandemic in South Africa, there is far less on the subnational experience. Johannesburg is a partial exception, as it generally attracts more scholarly attention, both in South Africa and internationally, than other parts of the country do.

Tomlinson et al. warned that Johannesburg's global city aspirations were being threatened by the creeping disaster of HIV/Aids:

> that combination of HIV/Aids, with high unemployment and low household income levels will greatly exacerbate hardship among Africans while causing the breakdown of traditional support systems. A desperate situation among many living south of the inner city may be anticipated.[336]

333 See Statistics South Africa. (2010) *Mid-Year Population Estimates – 2019*. [Online]. Available at: https://www.statssa.gov.za/publications/P0302/P03022019.pdf. [Accessed: 17 May 2020].

334 The figures are drawn from Statistics South Africa, but we note the difference with the figures reported by UNAIDS. See UNAIDS. (2019). *UNAIDS Data*. [Online]. Available at: https://www.unaids.org/sites/default/files/media_asset/2019-UNAIDS-data_en.pdf. [Accessed: 17 May 2020].

335 https://vizhub.healthdata.org/lbd/hiv.

336 Tomlinson, R., Beauregard, R., Bremner, L. and X. Mangcu. (2003) Introduction. In Tomlinson et al., 2003.

Other scholars took a similar view, writing of the uneven effects of HIV/Aids across city space.[337] The inner city, and especially the densely settled precincts of Hillbrow and Berea, attracted attention. Hillbrow was historically a place of transience, as well as being known as Johannesburg's red-light district with its bars, strip clubs and (hotel-based) sex workers. Pettifor et al. reported that in 1998, the HIV prevalence recorded at a local clinic in Hillbrow was 41%.[338]

Hillbrow became the focus of one of the world's most ambitious Aids intervention programmes. This is an initiative of the Reproductive Health & HIV Research Unit at the University of the Witwatersrand, Johannesburg, and provides education and healthcare services to hotel-based sex workers.[339] Academics involved in the programme have also published extensively on vulnerability to HIV/Aids in the Hillbrow–Berea precinct, and especially on the sex workers who are drawn to Hillbrow from impoverished rural parts of South Africa, as well as from across South Africa's borders. With sex work in South Africa still criminalised and the occupation unregulated, sex workers are stigmatised and subject to constant bribery and harassment by the police, and to abuse from their male clients.[340] However, some writers have avoided casting sex workers as purely victims, showing how they negotiate their survival, for example, with their clients around the use of condoms.[341]

HIV/Aids is of course of much wider concern than only among sex workers in Johannesburg's inner-city precincts, and there is a smattering of literature on other vulnerable groupings in the city: those living in informal settlements;[342] mineworkers;[343] female domestic workers;[344] the urban homeless;[345] and men who have sex with men.[346]

While the focus has been on national responses to HIV/Aids, there are scholars who have considered local government responses,[347] or who have argued that HIV/Aids is an urban issue and not simply a health concern.[348] Early local government responses to HIV/Aids were constrained by the challenges of the political transitions and continued local government fragmentation. However, once the new single-tier metropolitan authority for Johannesburg was established in December 2000, there was a quick response to HIV/Aids, although the municipality's power in relation to health matters was restricted largely to the regulation of environmental health and primary healthcare services, such as immunisation, material and child health, which it delivered through a network of healthcare centres and clinics.

In 2001, the-then Executive Mayor, Amos Masondo, announced that addressing the HIV/Aids crisis would be one of the six priorities of his new administration.[349] He took his cue from the establishment of SANAC nationally, and set up the Johannesburg Aids Council (JAC) to advise the City of Johannesburg on its approaches to dealing with Aids, as well as to assist with advocacy, communication and monitoring.[350]

337 Vearey et al., 2010; Thomas, E. (2003) HIV/Aids: Implications for Local Government, Housing and Delivery of Services. In Tomlinson et al., 2003. pp.185–196.

338 Pettifor, A., Beksinska, M. and H. Rees. (2000) 'High Knowledge and High Risk Behaviour: A Profile of Hotel-Based Sex Workers in Inner City Johannesburg'. *African Journal of Reproductive Health*. 4(2). pp.35–43.

339 Richter, M. (2008) 'Sex Work, Reform Initiatives and HIV/AIDS in Inner-City Johannesburg'. *African Journal of AIDS Research*. 7(3). pp.323–333.

340 Pettifor et al., 2000.

341 Wojcicki, J. and J. Malala. (2001) 'Condom Use, Power and HIV/AIDS Risk: Sex-Workers Bargain for Survival in Hillbrow/Joubert Park/Berea, Johannesburg'. *Social Science and Medicine*. 53. pp.99–121.

342 Vearey et al., 2010.

343 Macheke, C. and C. Campbell. (1998) 'Perceptions of HIV/AIDS on a Johannesburg Gold Mine'. *South African Journal of Psychology*. 28(3). pp.146–153.

344 Dinat, N. and S. Peberdy. (2007) 'Restless Worlds of Work, Health and Migration: Domestic Workers in Johannesburg'. *Development Southern Africa*. 24(1). pp.186–203.

345 Lohrmann, G., Botha, B., Violari, A. and G. Gray. (2012) 'HIV and the Urban Homeless in Johannesburg'. *SAJ HIV MED*. 13(4). pp.174–177.

346 Rispel, L., Metcalf, C., Cloete, A., Reddy, V. and C. Lombard. (2011) 'HIV Prevalence and Risk Practices among Men Who Have Sex with Men in Two South African Cities'. *AIDS Journal of Acquired Immune Deficiency Syndromes*. 57(1). pp.69–76.

347 Vearey, J. (2011) 'Challenging Urban Health: Towards an Improved Local Government Response to Migration, Informal Settlements, and HIV in Johannesburg, South Africa'. *Global Health Action*. 4(1). pp.1–19. [Online]. Available at: https://www.tandfonline.com/doi/pdf/10.3402/gha.v4i0.5898. [Accessed: 30 August 2020].

348 For example, Tomlinson et al., 2003; Thomas, 2003; Vearey et al., 2010.

349 City of Johannesburg. (2001) *City Development Plan 2001/2002*. City of Johannesburg: Johannesburg.

350 City of Johannesburg. (n/d) HIV/Aids Programme. [Online]. Available at: http://docplayer.net/35293586-City-of-johannesburg-hiv-aids-programme.html. [Accessed: 18 May 2020].

The city's first HIV/Aids strategy was prepared in 2002, and in 2004, the *Jozi Ihlomile* (Joburg is armed) strategy was launched with a strong community-based orientation focusing on engaging community leadership, local education, home-based care, and volunteer-based testing and social support. The initial focus was on informal settlements, but the programme expanded to 45 deprived wards in the city.[351]

The State of the City addresses are indicative of the shifting priorities of the city administration.[352] Up until 2012, HIV/Aids was mentioned in each address as a city priority, or at least as a continuing challenge, but after 2012, there was hardly a mention. It seems that the sense of crisis was over because of the declining death rates and the rollout of ARVs. It may also be that the broader economic impact had already been factored into economic calculations of government and the private sector and was, evidently, not a major continuing concern. The continuing economic burden of HIV/Aids was on poor households who were losing income earnings, spending time caring for sick relatives, and spending money on healthcare and funerals. Nevertheless, HIV/Aids interventions remained a focus of the city's Department of Health and a small but committed band of officials continued with the programme, including with the rollout of ARVs in the city's 50 plus clinics. In the period 2011 to 2017, the number of patients receiving ARVs in clinics run by the city increased from 39 924 to 296 485 (with other patients receiving ARVs from provincial-run hospitals and clinics).[353]

A renewed impetus to the HIV/Aids effort came with the launch of the UNAIDS 2016–2021 Strategy, *On the Fast-Track to End Aids*. Fast-Track Cities emerged as a partnership between UNAIDS, UN-Habitat, among others. Johannesburg was recruited to join the initial participant cities,[354] and became a signatory to the *Paris Declaration on Fast-Track Cities*, which committed to ending the HIV/Aids epidemic by 2030,[355] and to achieving the 90-90-90 Target Goals by 2022 (meaning 90% of people living with HIV knowing their HIV status; 90% of people knowing their status on HIV treatment; and 90% of people on treatment having suppressed viral loads).[356] The City of Johannesburg moved ahead in preparing an implementation plan to scale up interventions to meet the targets and this revived the focus on *Jozi Ihlomile*.[357] Major successes at the time included reducing mother-to-child transmission of HIV to 2%, and an increase in the number of medically circumcised men from 18.6% in 2012 to 30.8% in 2017.[358]

The City of Johannesburg still has more than 600 000 residents living with HIV/Aids, greater than any other city worldwide, with Stuart et al. reporting in 2018 that, with current trends, we may expect a further 303 000 new infections and 96 000 Aids-related deaths between 2017 and 2030.[359] While the most virulent phase of the pandemic in South Africa has abated, largely due to the belated rollout of ARVs and to changes in social behaviour, the pandemic is clearly not over. Death rates peaked in 2006, but total numbers of cases are still rising, although at a reducing number, and may peak only around 2022/23, or later.[360] Some parts of the country have experienced a falling total number of infections,[361] but the challenge for Johannesburg is the continuing in-migration of people, including those infected.

351 Lerutla, M. (n/d) 'Jozi Ihlomile': A Unique Model of HIV and Aids Education in Johannesburg. [Online]. Available at: https://slideplayer.com/slide/6641225/. [Accessed: 18 May 2020].

352 The State of the City addresses are online at https://www.joburg.org.za/about_/government/Pages/Executive/state-of-the-city.aspx. [Accessed: 2 September 2010].

353 City of Johannesburg. (2017) SA: More Joburg Residents Access HIV Treatment and Care Services. *Polity*. 29 November 2017. [Online]. Available at: https://www.polity.org.za/article/sa-more-joburg-residents-access-hiv-treatment-and-care-services-2017-11-29. [Accessed: 18 May 2020].

354 See Fast-Track Cities Global Web Portal at http://www.fast-trackcities.org/cities. [Accessed: 18 May 2020].

355 This is in fact a target set in the UN's Sustainable Development Goals.

356 Stuart, R., Fraser-Hurt, N., Kerr, C. et al. (2018) 'The City of Johannesburg Can End AIDS by 2030: Modelling the Impact of Achieving the Fast-Track Targets and What It Will Take to Get There'. *Journal of the International Aids Society*. 21. e25068.

357 Stuart et al., 2018, p.8.

358 City of Johannesburg, 2017.

359 Stuart et al., 2018.

360 Ibid.

361 Molapo, T. and N. Massyn. (2019) 'HIV and Aids'. *District Health Barometer 2017/18*. A Report of the Health Systems Trust. pp.191–208.

Photograph by **Thapelo Morebudi/*Sunday Times***

Learning from history: Six persisting themes

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The Covid-19 pandemic struck South Africa like a whirlwind early in 2020. It is not the subject of this account but provides the context within which this history is written. Each epidemic has, however, happened within its own temporal, social and epidemiological circumstances, and it is difficult to draw direct lessons from one epidemic to another, even if Johannesburg is the common setting. Nevertheless, there are common themes that track across the various epidemics, and it may be useful to highlight these themes, suggesting their relevance to the current crisis.

The first of these is the **unpredictable course of epidemics/pandemics**. History cannot of course tell us what path the Covid-19 pandemic will take, but it does tell us that epidemics or pandemics often follow trajectories that may seem inexplicable at the time. Johannesburg was fortunate that epidemics were generally more moderate here than in other parts of South Africa, for reasons that were puzzling at the time, but which may include its inland location (giving it more time for preparations), its relatively efficient municipal health department, and earlier circulation of milder forms of a virus. This is clearly not an unequivocal pattern, however, with the polio epidemics of the first part of the 20th century more virulent in Johannesburg than elsewhere in the country, and high rates of HIV/Aids, with Johannesburg a hub of migrant circulations. There were also demographic peculiarities with the 1918 influenza, for example, affecting the 20–40-year-old group far more than the young and the elderly, and polio affecting white, rather than black, children.

In 2020, we have the advantage of spatial and demographic data systems and sophisticated modelling techniques; and yet, the course of the disease is still, very often, a surprise. It is too early to know the course of the Covid-19 pandemic in South Africa, but it has evolved to date in unpredictable ways. At first, South Africa did well compared with North America and Europe, for example, but a sharp increase followed from around the second week of June 2020. By 14 September, there were more than 650 000 confirmed cases in South Africa, with the country having peaked in July with the fifth highest absolute number in the world after the US, Brazil, Russia and India.[362]

There was considerable variability in the spatial patterning of the pandemic. The first known case was confirmed in KwaZulu-Natal on 5 March 2020, but levels of infection in this province increased slowly relative to Gauteng, the Western Cape and the Eastern Cape. The first major surge in infection happened in the Western Cape, with confirmed infections reaching 10 000 by 18 May and 50 000 by 20 June. It remained the province with the largest number of confirmed infections until 7 July, when there were more than 72 000 cases in the province. The next infection surge was in Gauteng from the end of June, with a huge surge of cases through early July, and with the province reaching 81 000 confirmed cases by 9 July, when the province was established as the epicentre of the pandemic in South Africa. It reached 128 000 by 19 July. Within Gauteng, Johannesburg was the hub, with just over 56 000 cases by 19 July, or nearly one-half of the provincial total. The infections in Johannesburg started in the middle-class suburbs, reflecting the global mobility of their residents but, by mid-July, the main hotspots were in townships, including Soweto and Alexandra. Beyond the Western Cape and Gauteng, the third hub of infection was

362 The situation is somewhat different in per capita terms as South Africa's confirmed infections in fact exceeded India and Russia, although it was less than some Latin American and Middle Eastern countries.

the Eastern Cape, with 61 000 infections by 19 July. Although the hotspots in this province were initially the large urban centres, there was a rapid spread into small towns and rural areas. By mid-July, KwaZulu-Natal was emerging as an area of concern as was the mining belt in North West; but in other provinces, infection rates remained relatively low. By 24 September, Gauteng had 650 749 confirmed cases, and Johannesburg had 86 285, although the high per capita rates of infections were in the cities in the Eastern Cape.

At the time of writing, there is no way of knowing the course that the pandemic will ultimately take. While improving our understanding of the pandemic and our predictive capacities is important, the huge cone of uncertainty and unpredictability that will invariably remain means that the most crucial capability in responding to an epidemic/pandemic is agility and rapid responsiveness.

The second cross-cutting theme is the **prevalence of scapegoating as a response to a public health crisis**. It is clear from history that people reach for blame and that it requires a strong and progressive leadership to direct the societal focus more productively. In South Africa's racially divided society, 'racial pathologising'[363] was a common response, with Africans, Indians, coloureds, Chinese people and others identified at various times as the cause or carriers of disease. Pathologising has also taken place along the lines of class, ethnicity, national origin and sexual identity. Stigmatisation of this sort has worsened levels of social conflict and discrimination, and has made it difficult to contain disease, as those who are infected have been reluctant to come forward for treatment. An airborne disease, such as influenza and the coronavirus, may be more egalitarian in the way it infects individuals, but even so, there are still levels of scapegoating and discrimination requiring effective leadership as an antidote. What is clear across almost all epidemics in history is that the elites work to protect themselves, seeking to contain the crisis within poorer (or blacker) communities.

There have been degrees of scapegoating during the Covid-19 pandemic. Initially, foreign nationals, including Chinese people, were targeted, but as the virus spread increasingly through community transmission, individuals from places in South Africa with high rates of infection were targeted, and some of those testing positive were stigmatised. There were reports of individuals testing positive being ostracised from communities, and of communities protesting the admission of Covid-19 patients to local clinics and hospitals. This led to the intervention of President Ramaphosa, who warned that stigmatisation must stop and that 'now, more than ever, our friends, families, colleagues and neighbours need our empathy and support'.[364]

Third, epidemics impact on far more than public health alone, **having major effects on the economy and on the livelihood of households**. The Covid-19 pandemic is the first time there was a shutdown of the economy, and so there is little precedent to draw on. In this sense, history can only provide us with fragmented insight. Until around 1950, Johannesburg's economy was dominated by mining and so the dominant concern of the social and political elite was the impact of epidemics on the functioning of this industry, with the effect on the mining workforce and on the share prices and profits of mining companies being the major concerns. By the time HIV/Aids struck, however, the economy was more diverse and less mining dependent, but the impacts of the epidemic on the economy were muted by its disproportionate effect on semi-skilled and unskilled labour cohorts, where unemployment levels were high. However, while the macro-economic effects of HIV/Aids are not clear, the effects of the epidemic on vulnerable households are immense as the burden of HIV/Aids rests mainly on poor households.

While there is no precedent for the economic impact of Covid-19, most epidemics have impacted harshly on segments of society already marginalised and vulnerable. In addition to the ravages of the disease itself, official actions, such as the relocation of settlements, may leave households more economically

363 Phillips, 2012, p.51.

364 *IOL*. 30 June 2020. [Online]. Available at: https://www.iol.co.za/news/south-africa/ramaphosa-warns-against-stigmatisation-of-covid-19-patients-50131548. [Accessed: 2 September 2020].

Figure 25: The police intimidate homeless people ignoring the national lockdown in Hillbrow, Johannesburg, 28 March 2020

Photograph by Alaister Russell/*Sunday Times*

vulnerable than before. Without targeted responses to support vulnerable households during and after the event, an epidemic may leave society more unequal, and more conflict-ridden, than before. Of the epidemics experienced by Johannesburg, Covid-19 has, arguably, had the greatest impact on the economy. The economy was already struggling before the epidemic, with GDP growth negative and unemployment at nearly 30%. The national lockdown to contain the spread of the virus, which took effect from 27 March, had a hugely negative impact on the economy, indicating the tensions which invariably result between containing epidemics and sustaining livelihoods and economic activity.

The South African Reserve Bank forecast a GDP change of –6.1% for 2020, similar to the International Monetary Fund's projection of –5.8%.[365] While national government has announced a R500-billion fiscal support package, the combined shocks to supply and demand in the economy mean that South Africa is unlikely to avoid the projected depression. Major challenges include: the massive loss of jobs; the devastating impact of the lockdown on small business, including in the hospitality sector; disruptions to supply chains; and loss of revenue to government at a time when demands for government response have increased dramatically.

Fourth, **epidemics have left their imprints in the spatial form and organisation of the city**, with concerns over public health frequently coming together with fears around racial mixing, density and slums. The pneumonic plague of 1904 was minor in terms of deaths but had an enduring legacy on spatial form, establishing a pattern of spatial marginalisation of black communities that prefigured apartheid. The 1918 influenza contributed to the promulgation of the Native (Urban) Areas Act, 1923, a precursor to the Group Areas Act, 1950, which had an enormous impact on the shaping of South Africa's towns and cities. Even the threat of an epidemic provoked calls for the removal of slums

365 National Treasury. (2020) *Economic Measures for Covid-19*. RSA: Pretoria. [Online]. Available at: http://www.treasury.gov.za/comm_media/press/2020/20200428_COVID_Economic_Response_final.pdf. [Accessed: 5 September 2020].

and more rigorous application of segregationist laws. The passing of the Slums Act, 1934, for example, may be tracked to political pressures, which intensified during the period in which there were fears over public health. HIV/Aids came at a very different time in South Africa's history, when South Africa was transitioning away from its colonial and apartheid past. Its effects on the urban form were more subtle. It may have stirred concerns around inter-racial and inter-class mixing, and so constrained processes of urban integration. With its disproportionate effects on poor households, HIV/Aids certainly increased urban inequalities.

The Covid-19 pandemic immediately impacted the urban debate, although of course we do not know what its spatial legacies will turn out to be. Internationally, it has raised questions around urban density, and in South Africa this has taken the forms of concerns around informal settlements. Moves by the national Department of Human Settlements to de-densify and relocate residents of informal settlements into Temporary Residential Areas (TRAs) were criticised and met with resistance from academics, organisations of civil society and the media. However, the Department persisted with its plan and instructed provincial and municipal governments to decant the population of selected informal settlements into TRAs. In the case of Johannesburg, the initial focus is on the relocation of around 6 000 residents from informal settlements around the city into a TRA in the north of the city near Rabie Ridge. This is explained as Phase I of a larger scheme and is motivated in terms of the need to de-densify the city to achieve the requirements of social distancing.[366] The question remains as to what extent the de-densification impulse actively promoted by the Department of Human Settlements reflects a pre-existing agenda to eradicate, rather than upgrade, informal settlements. History at least alerts us to the opportunistic use of epidemics.

Epidemics have impacted on various forms of city infrastructure. The physical impact of the epidemic through slum eradication, new (often segregated) housing, and de-densification initiatives is indicated above, but there are other forms of infrastructure. Research infrastructures are important and have been a product of several of the epidemics. The smallpox epidemic of 1893 led to the creation of a research laboratory for producing a local vaccine, while the polio epidemics of the 1940s led directly to the development of the Poliomyelitis Research Foundation, which developed a vaccine critical to containing the disease. Other forms of research have also evolved through the historical progression of epidemics. The development of spatial data systems emerged in a crude form during the epidemics of 1904 and 1918/19 but, enabled by increasingly sophisticated geographic information systems, was a significant feature of the HIV/Aids pandemics and of Covid-19. The latter is associated with a range of digital tools developed globally, including virus tracing apps, and may leave a considerable legacy in the development of an information infrastructure, although with the possible downside of intensified surveillance which intrudes on personal privacy and civil liberties.

Fifth, **the nature and quality of governance impacted on the nature and severity of the epidemics**. Dealing with epidemics requires degrees of responsiveness, flexibility and innovation that are generally not required during the everyday course of government and quickly highlight underlying strengths and weaknesses within a governance regime.

The arrival of smallpox in 1893 happened in the context of fledgling governmental arrangements overall, and a serious trust deficit between Pretoria and the Witwatersrand. While a common cause was eventually established, there were crucial weeks lost. The internment camps were managed under a military regime. Lessons of governance are not easily drawn into other contexts, but the varying quality of management in these camps clearly had a huge impact on death rates. The 1904 plague came at an early stage in the new post-war administration. However, Johannesburg had an effective, albeit fledgling, health infrastructure and this clearly made a significant difference, although the extremely racialised nature of the response overshadows the efficiency of the administration. In 1918, Johannesburg managed the influenza epidemic better than many other places, although factors other

366 The Mayor of Johannesburg, Geoff Makhubo, cited in *Business Tech*. 17 July 2020. [Online]. Available at: https://businesstech.co.za/news/property/417345/joburgs-big-plans-for-social-distancing-including-moving-6000-people-to-de-densify-townships/. [Accessed 5 September 2020].

Figure 26: About 102 families in Kliptown, Soweto, received food parcels with help from Melrose North residents and the Angel's Network in Waverley, 18 May 2020

Photograph by Alon Skuy/*The Sunday Times*

than governance may explain much of the variance in death rates. Institutionally speaking, however, 1918 is most important in terms of highlighting the lack of a national health infrastructure.

The HIV/Aids pandemic came at a time when a national health infrastructure was in place, and when national government was poised to play the leading role in coordinating the response to the pandemic. However, tragic deficiencies in the national response contributed to South Africa's positioning as the global epicentre of the disease. It was only when national policies shifted, most importantly in terms of access to ARVs, that death rates began to drop.

The Disaster Management Act, 2002, strengthened the role of the national centre in managing epidemics by providing for a national framework for disaster management coordinated from the centre. When Covid-19 struck, the system was quickly activated, with responses nationally coordinated by a National Coronavirus Command Council chaired by the State President, and with structures cascading down to provincial and municipal level. This was a far cry indeed from the influenza pandemic of 1918/19, for example, when national infrastructure barely existed, and responses were local and variable. Debates will continue for a long time as to whether this hierarchical structure, and the severe measures introduced to contain the pandemic, amounted to constitutional overreach and stretched the bounds of democratic accountability, but the structure allowed for coordination in a way that was unimaginable a century before. This does not mean, however, that the system always functioned as intended. The 2020 pandemic reveals many of the flaws and fault-lines of a compromised governance system as well as offering possibilities for post-crisis reform.

An important aspect of the Covid-19 pandemic is that it is happening in the Information Age, with technology allowing for a rapid flow of information

globally, and with data mapped and visible. In previous epidemics or pandemics, data were gradually assembled, with mortality rates, for instance, only apparent in the months or years after the outbreak as a result, for example, of the work of a government-appointed commission. Even in the case of HIV/Aids, data on disease prevalence were only gradually assembled, in part through surveys of women attending antenatal clinics. Also, as a decades-long pandemic it lacked the media intensity associated with sudden-onset epidemics. Nevertheless, Covid-19 in South Africa exposed weaknesses in the flow of information and in systems to collate, map and interpret data.

Sixth, **epidemics have shaped governance in different ways**. The smallpox epidemic ironically produced a collaborative structure between local (Witwatersrand) and national (ZAR) players, but an overall deterioration in the political environment meant that this was not sustained. The severity of the epidemics in the South African War internment camps, or at least the exposure of their severity to the British public, led to reforms in the management of the camp (although the overall system remained firmly in place). The 1904 plague contributed to the emergence of separate administrations for different race groups, but it was the 1918 influenza epidemic that arguably had the biggest impact on institutional arrangements (supported also by lessons from the earliest polio epidemic). It hastened the emergence of a national public health system; the creation of formal systems of land management and town planning; and the formulation of institutional mechanisms for managing and regulating segregated locations (later called townships). The 1918 pandemic was also marked by the increased role of voluntary associations in civil society, although mainly in the role of providing social support.

The HIV/Aids epidemic may not have changed the architecture of government, but it did compel government to be more responsive to civil society, including through the establishment of SANAC, and its provincial and municipal counterparts. The pandemic arguably mobilised civil advocacy roles in a way that no other happening in the post-apartheid era has done, and changed the relationship between the executive and judiciary in government.

The impacts of Covid-19 on governance are still not clear. In some countries, South Africa possibly included, the pandemic may have reinforced the role of national government, but, in other countries, incoherent and divisive governmental response may have had the opposite effect. Similarly, the performance of subnational governments, including municipalities, has varied, and the position of these levels of government may emerge from the pandemic very differently. The pandemic may have exposed severe deficiencies in the functioning of government but may also have produced innovative new arrangements and processes, and positively shifted relationships within government and between government and civil society.

A final comment

Covid-19 is not the first epidemic to strike Johannesburg, and it may not even be the worst. In terms of loss of life, the HIV/Aids pandemic from the late 1980s to the present has had effects that are massively more severe, while the influenza pandemic battered Johannesburg in October 1918, even if its effects were felt less severely than elsewhere in the country. Nonetheless, Covid-19 is a pandemic of immense proportions.

In responding to the pandemic and its aftermath, can we learn from history? Although the location was the same, Johannesburg, each epidemic happened in very different temporal contexts, with immense variation in terms of population, society, politics, medical knowledge, and more. Also, each epidemic took a different course, with a very different epidemiology. Clearly, we cannot transcribe directly from one epidemic to another, and the knowledge of history must be deployed judiciously. Nonetheless, there are critical themes, including those which have been discussed above, that cut across each of the historical moments, and in this sense, they may help shape our attention in productive ways.

A final point is that the Covid-19 pandemic will soon become part of the historical account, and it is critical that we maximise the positive learning potentials from this traumatic happening. The epidemic will surely provoke immense global and national literature, but we must also understand how the pandemic landed in our local context and intersected with local governance, politics, economy, environment and social organisation.

About the author

Philip Harrison |

Prof. Philip Harrison is the South African Research Chair in Spatial Analysis and City Planning funded by the National Research Foundation and hosted by the University of the Witwatersrand. He served as a member of the National Planning Commission in the Office of the President from 2010 to 2015. Previously, Prof. Harrison was Executive Director in Development Planning and Urban Management at the City of Johannesburg for four years from 2006 to 2010. Prior to that, he held a number of academic positions at the Universities of the Witwatersrand and Natal, including Professor and Chair of Urban and Regional Planning at Wits from 2001 to 2006. He has published widely in the fields of city planning and regional and urban development. His most recent publications include the jointly edited books *Changing Space, Changing City: Johannesburg after Apartheid* (Wits University Press), and *Densifying the City? Global Cases and Johannesburg* (Edward Elgar).

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GAUTENG CITY-REGION OBSERVATORY

6th Floor University Corner
11 Jorissen St (Cnr Jorissen and Jan Smuts)
Braamfontein
Johannesburg
Gauteng, South Africa

tel +27 11 717 7280
email info@gcro.ac.za
www.gcro.ac.za