The History, Present and Future of Public Health in Leicester City

ROB HOWARD, APRIL 2025

Leicester Isolation Hospital staff with patients on porch c. 1910

The Annual Report of the Director of Public Health for Leicester City

APRIL 2024 TO MARCH 2025

Leicester City Council

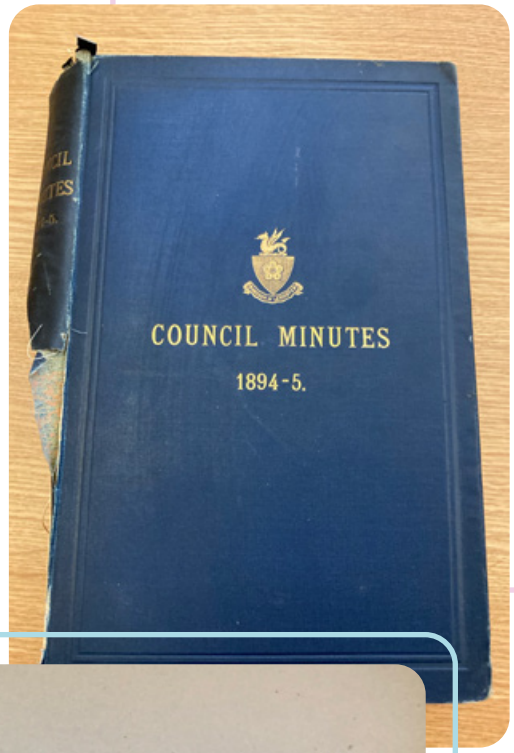
“Those who fail to learn from history are doomed to repeat it”

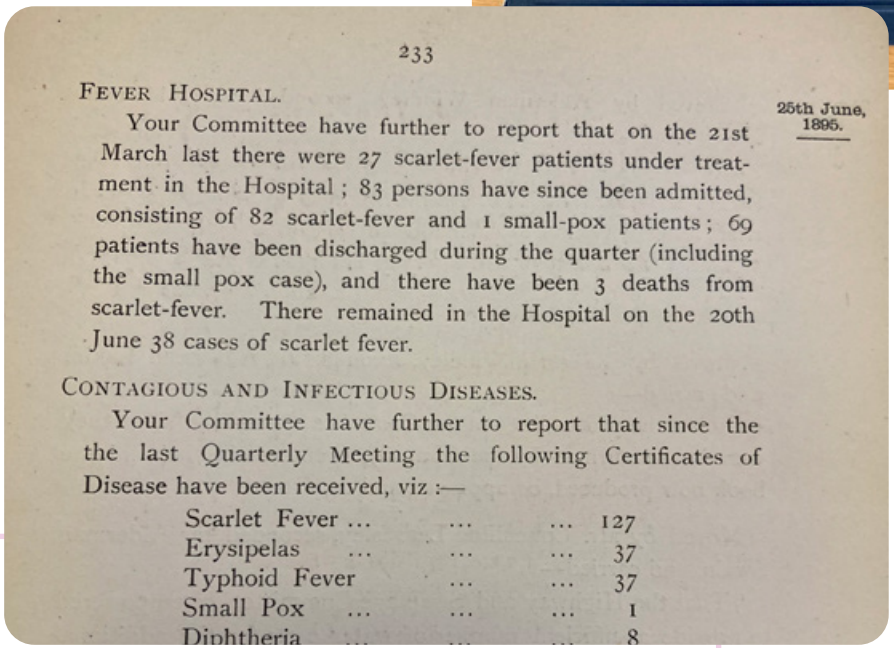
GEORGE SANTAYANA (1863–1952)

Preface

At the end of the first-floor corridor in Leicester Town Hall is a small, square room, with the smell of dusty old books and a view onto the Town Hall Square and Fountain. Loitering before a public health workshop, shortly after starting as Director of Public Health in September 2023, I notice two of the walls are filled with bookshelves containing Council minutes dating from the 1890s until the 1960s. Like a child playing only the lowest and highest notes on a piano, I reach for the very oldest; 'Council Minutes 1894–95'. These contain the minutes of several meetings of the 'Sanitary Committee', with reports from the Medical Officer of Health (MoH) and Public Analyst, Dr Joseph Priestly, my equivalent from 130 years ago.

The first paragraph I see lists the cases of Scarlet Fever and Small Pox at the 'Fever (or 'Isolation') Hospital', temporarily constructed in 1871 (on Freak's Ground just north of Northfoundpool). There is a paragraph listing the latest figures for 'Contagious and Infectious Diseases' — including typhoid fever, diphtheria and cholera, and sections on buildings 'unfit for habitation', and a report from the Food Inspector listing 'articles unfit for human food' found during inspections of shops, stalls and slaughter houses.





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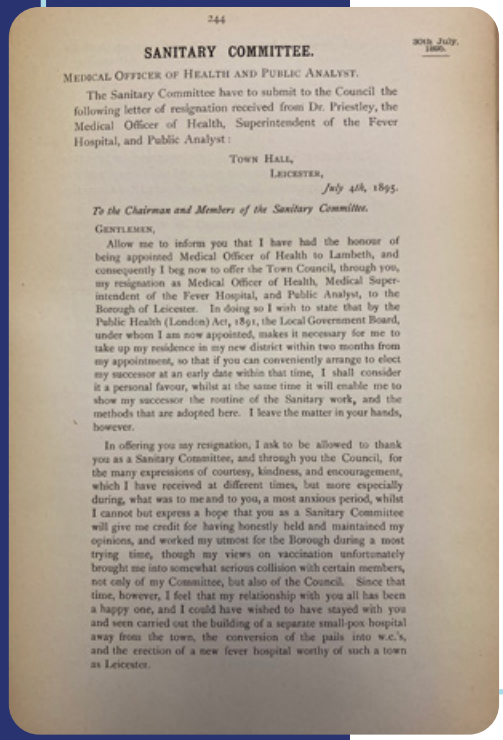
FEVER HOSPITAL. 25th June, 1895.

Your Committee have further to report that on the 21st March last there were 27 scarlet-fever patients under treatment in the Hospital; 83 persons have since been admitted, consisting of 82 scarlet-fever and 1 small-pox patients; 69 patients have been discharged during the quarter (including the small pox case), and there have been 3 deaths from scarlet-fever. There remained in the Hospital on the 20th June 38 cases of scarlet fever.

CONTAGIOUS AND INFECTIOUS DISEASES.

Your Committee have further to report that since the the last Quarterly Meeting the following Certificates of Disease have been received, viz :—

Scarlet Fever	127
Erysipelas	37
Typhoid Fever	37
Small Pox	1
Diphtheria	8



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SANITARY COMMITTEE. 30th July, 1895.

MEDICAL OFFICER OF HEALTH AND PUBLIC ANALYST.

The Sanitary Committee have to submit to the Council the following letter of resignation received from Dr. Priestley, the Medical Officer of Health, Superintendent of the Fever Hospital, and Public Analyst:

TOWN HALL,
LEICESTER,
July 4th, 1895.

To the Chairman and Members of the Sanitary Committee.

GENTLEMEN,

Allow me to inform you that I have had the honour of being appointed Medical Officer of Health to Lambeth, and consequently I beg now to offer the Town Council, through you, my resignation as Medical Officer of Health, Medical Superintendent of the Fever Hospital, and Public Analyst, to the Borough of Leicester. In doing so I wish to state that by the Public Health (London) Act, 1891, the Local Government Board, under whom I am now appointed, makes it necessary for me to take up my residence in my new district within two months from my appointment, so that if you can conveniently arrange to elect my successor at an early date within that time, I shall consider it a personal favour, whilst at the same time it will enable me to show my successor the routine of the Sanitary work, and the methods that are adopted here. I leave the matter in your hands, however.

In offering you my resignation, I ask to be allowed to thank you as a Sanitary Committee, and through you the Council, for the many expressions of courtesy, kindness, and encouragement, which I have received at different times, but more especially during, what was to me and to you, a most anxious period, whilst I cannot but express a hope that you as a Sanitary Committee will give me credit for having honestly held and maintained my opinions, and worked my utmost for the Borough during a most trying time, though my views on vaccination unfortunately brought me into somewhat serious collision with certain members, not only of my Committee, but also of the Council. Since that time, however, I feel that my relationship with you all has been a happy one, and I could have wished to have stayed with you and seen carried out the building of a separate small-pox hospital away from the town, the conversion of the pails into w.c.'s, and the erection of a new fever hospital worthy of such a town as Leicester.

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In conclusion, I may add that the numbers of congratulations and good wishes which I have already received in Leicester in connection with my new appointment must cause me regret at leaving your town.

I am, Mr. Chairman and Gentlemen,
Yours obediently,
JOSEPH PRIESTLEY.

Dr. Priestley, who has held his appointments since June, 1892, has performed his duties with great zeal and energy, and your Committee regret that the Council are about to lose the services of a very able official.

Dr. Priestley having announced his wish to be released from his duties in Leicester in two months, your Committee have lost no time in considering the question of the appointment of a successor. They do not propose that any alterations should be made in the terms of the appointments, and have issued advertisements inviting candidates to send in applications, and your Committee request authority to select a suitable candidate for recommendation to the Council for appointment.

FEMALE SANITARY INSPECTOR.

Your Committee have further to report that, acting on the suggestion contained in the Annual Report of the Medical Officer of Health for 1894, they have considered the question of the advisability of appointing a Female Assistant Inspector of Nuisances, and they request the Council to authorise them

Intrigued I start thinking about how despite our advances, much remains quite familiar in the world of public health today. I turn the page to the next meeting of the Sanitary Committee from 30th July 1895, and am stopped in my tracks by the first item on the agenda; a letter of resignation by Dr Priestly to take up a new post in Lambeth. Between the formal lines of thanks to the committee for kindness and encouragement is a statement offering clues as to the resignation and the anxiety produced as a result of an extraordinary conflict on the role of small pox vaccinations in the city:

"I cannot but express a hope that you as a Sanitary Committee will give me credit for having honestly held and maintained my opinions, and worked my utmost for the Borough during a most trying time, though my views on vaccination unfortunately brought me into somewhat serious collision with certain members, not only of my Committee, but also of the Council".

Behind this is a fascinating story of riots, protests and rebellions in opposition to mandated vaccinations, fines and imprisonment; the development of an alternative 'Leicester Method' (in today's language, contact tracing and isolation), and the gradual emergence of a consensus for both the Leicester Method and vaccinations leading to the eradication of small pox, and lifesaving reductions in a multitude of other diseases, locally, nationally and indeed worldwide.

Our recent experience of responding to the Covid-19 pandemic (see previous DPH annual report 2022[1]) as well as on the more recent outbreak of measles in the city, shows how public health continues to be contested 'Plus ça change, plus c'est la même chose'[2] (the more that things change, the more they stay the same). This has cemented my view that we need to learn from history; to listen to our communities and address their concerns, but at the same time give sound objective advice and guidance. The now classic definition of public health is never truer nor more relevant — we need to use the "science and art of preventing disease, prolonging life and promoting health through organised efforts of society".[3]

1 **https://www.leicester.gov.uk/content/beyond-the-lockdowns-lessons-learned-from-leicester-s-covid-story/**
2 **https://en.wiktionary.org/wiki/plus_%C3%A7a_change,_plus_c%27est_la_m%C3%AAme_chose**
3 Faculty of Public Health, UK Faculty of Public Health Strategy 2020-2025, (London: FPH, 2019), p. 1

1945 - Town Hall in snow

This, my first annual report since taking up my post, will:

- Give a snapshot of the health and wellbeing of the people of Leicester City
- Reflect on the history of public health in the city, from communicable diseases and vaccinations to living and social conditions with a focus on fuel poverty; and the differences, similarities, and lessons we can learn for public health today
- Present a view on the future of public health for Leicester in the coming decades — highlighting some challenges and opportunities along the way.

[4] **https://www.adph.org.uk/resources/adph-awards-2022/**

It is an absolute privilege to serve as the Director of Public Health for this fantastic city, and I want to pay particular tribute to my team — the Division of Public Health within Leicester City Council — officially,[4] and for ever in my mind, the best public health team in the country.

Special thanks to those from the team who have contributed to this report:

- Mark Wheatley
- Helen Reeve
- Liz Rodrigo
- Gurjeet Rajania
- Pooja Bakhshi-Thaker
- Diana Humphries

ROB HOWARD

APRIL 2025

Leicester — a history of boundary and demographic changes, and a summary of health in the city

With around 368,600 residents, Leicester is the ninth largest city in England and the most populous urban centre in the East Midlands.[5] At 5,026 residents per km, Leicester is one of the most densely populated authorities outside of London in the country. The usual resident population has increased by around 38,700 since the 2011 census (11.7%). This is a greater increase than England (6.6%) and around twice the rate of Nottingham and Derby.

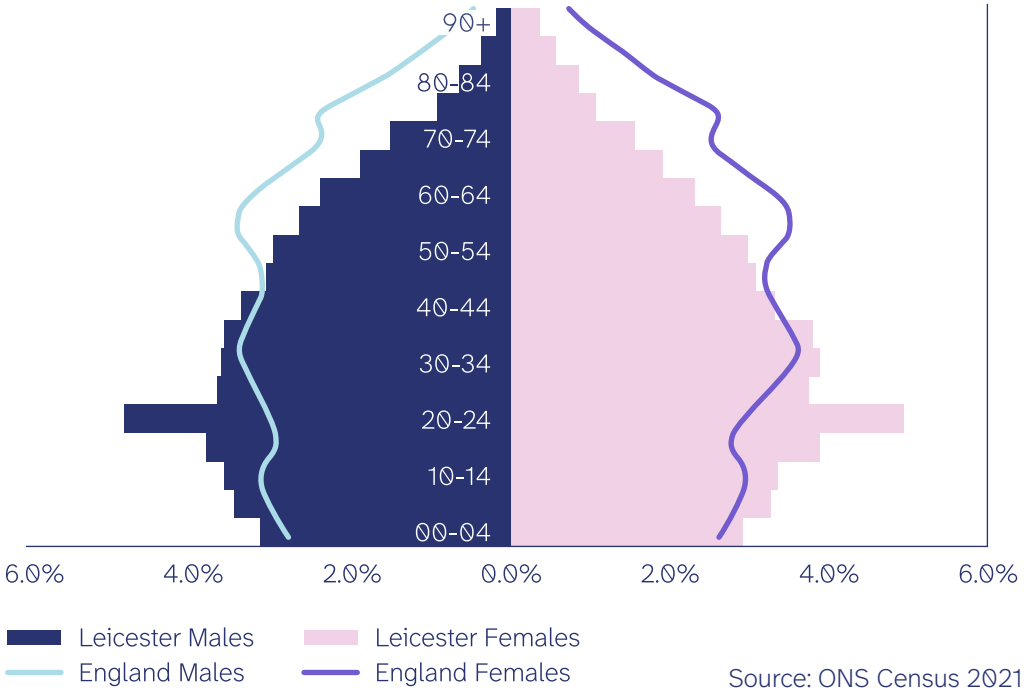
[5] Office for National Statistics, Census 2021

LEICESTER DEMOGRAPHY

Leicester's population is relatively young compared with England; 17% of Leicester's population (63,300) are aged 20–29 years old (13% in England) and 12% of the population (43,500) are aged over 65 (18% in England).

Leicester is home to a diverse range of faiths and communities. Just over 40% of Leicester residents were born outside of the UK, with 22% from Asia and the Middle East, 10% from Europe (excluding the UK) and 9% from Africa. Over the last three decades, ethnic diversity has grown. The percentage of Leicester residents reporting as White has reduced from 64% in Census 2001, to 51% in 2011 to 41% in 2021. Residents reporting as Asian have increased from 30% in 2001 to 37% in 2011 to 43% in 2021. Other minority ethnic groups have also experienced an increase over the last 30 years.

POPULATION STRUCTURE IN LEICESTER AND ENGLAND BY AGE AND SEX



Source: ONS Census 2021

LEICESTER BOUNDARY CHANGES OVER TIME

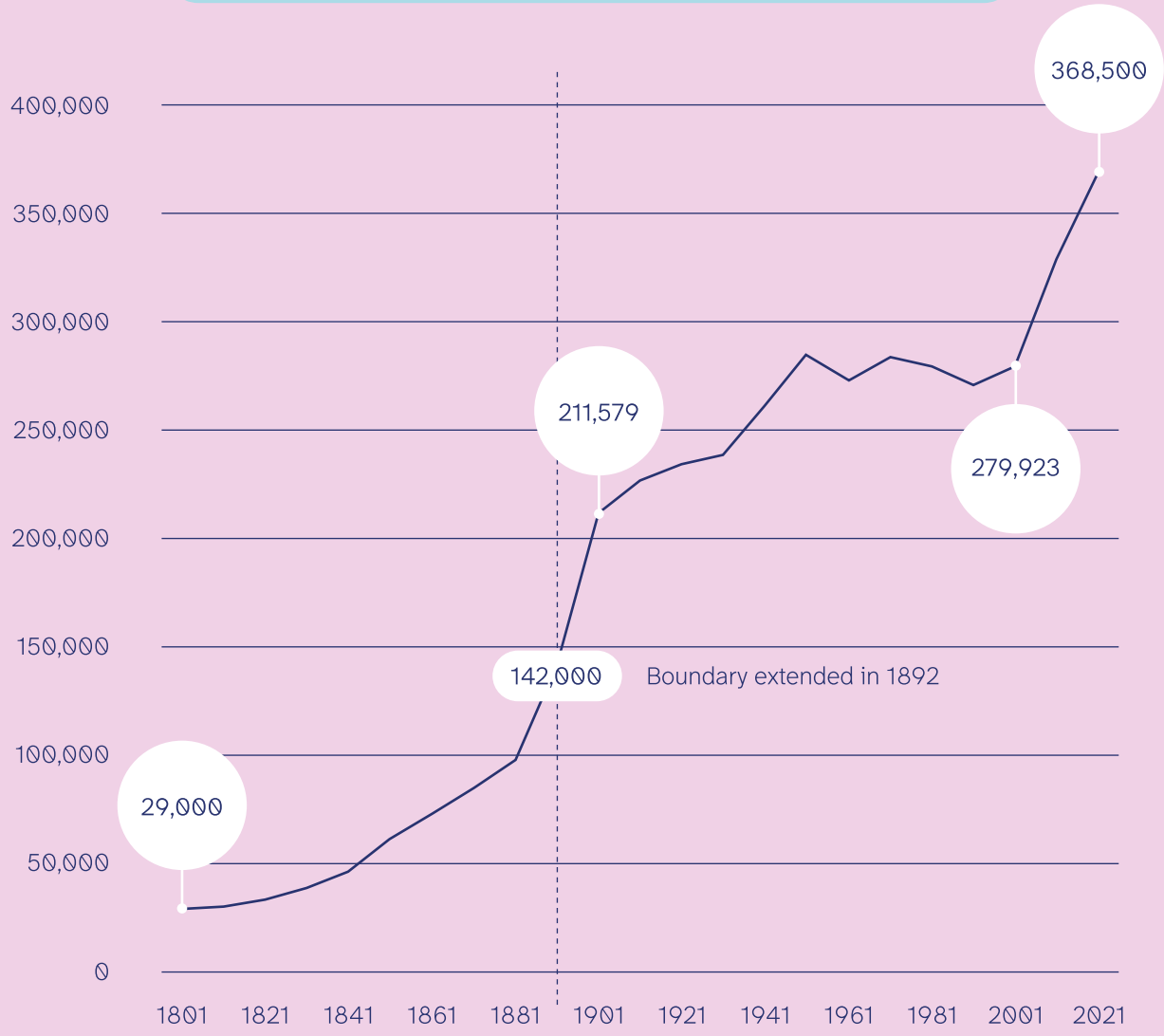
The first official census in 1801 recorded around 29,000 people in Leicester.

The growth rate accelerated during the mid-19th century, particularly with the onset of the Industrial Revolution. Leicester became a major centre for textile manufacturing, especially the hosiery industry. The city boundary extended in 1892 and the population boomed at the turn of the century, due to the city's industries continuing to expand. The period following World War II marked significant population growth for Leicester due to various factors including global political and military events and economic migration. The city saw rapid urbanisation, with new housing developments and infrastructure projects to accommodate the growing population.

Leicester continues to grow, as one of the youngest populations in the UK, with a median age considerably lower than the national average. This youthfulness, combined with high birth rates, contributes to a growing population.

We have also seen huge changes in life expectancy over the past 200 year summarised below.

POPULATION OF LEICESTER FROM 1801 TO 2021



MALE AND FEMALE LIFE EXPECTANCY 1800s TO PRESENT

Period	Male Life Expectancy	Female Life Expectancy	Key Influences
1800–1850	35–40 years	35–40 years	High infant mortality, poor sanitation, infectious diseases (e.g., cholera, smallpox), industrialisation.
1850–1900	40–45 years	40–45 years	Improvements in sanitation and public health, but high infant mortality continued, and industrial working conditions.
1900–1950	50 years	55–60 years	Early public health reforms, improved medicine, decline in infectious diseases. World Wars impacted short-term trends.
1950–1980	60–65 years	65–70 years	Growth in healthcare access (NHS established in 1948), post-war recovery, economic improvements.
1990–2000	70–74 years	75–79 years	Increased awareness of lifestyle issues, growth of the NHS, but still challenges with health inequality in some areas.
2000–2020	74–78 years	79–82 years	Continuing healthcare access, focus on preventative care, but continued health inequality.

LEICESTER POPULATION BY ETHNICITY

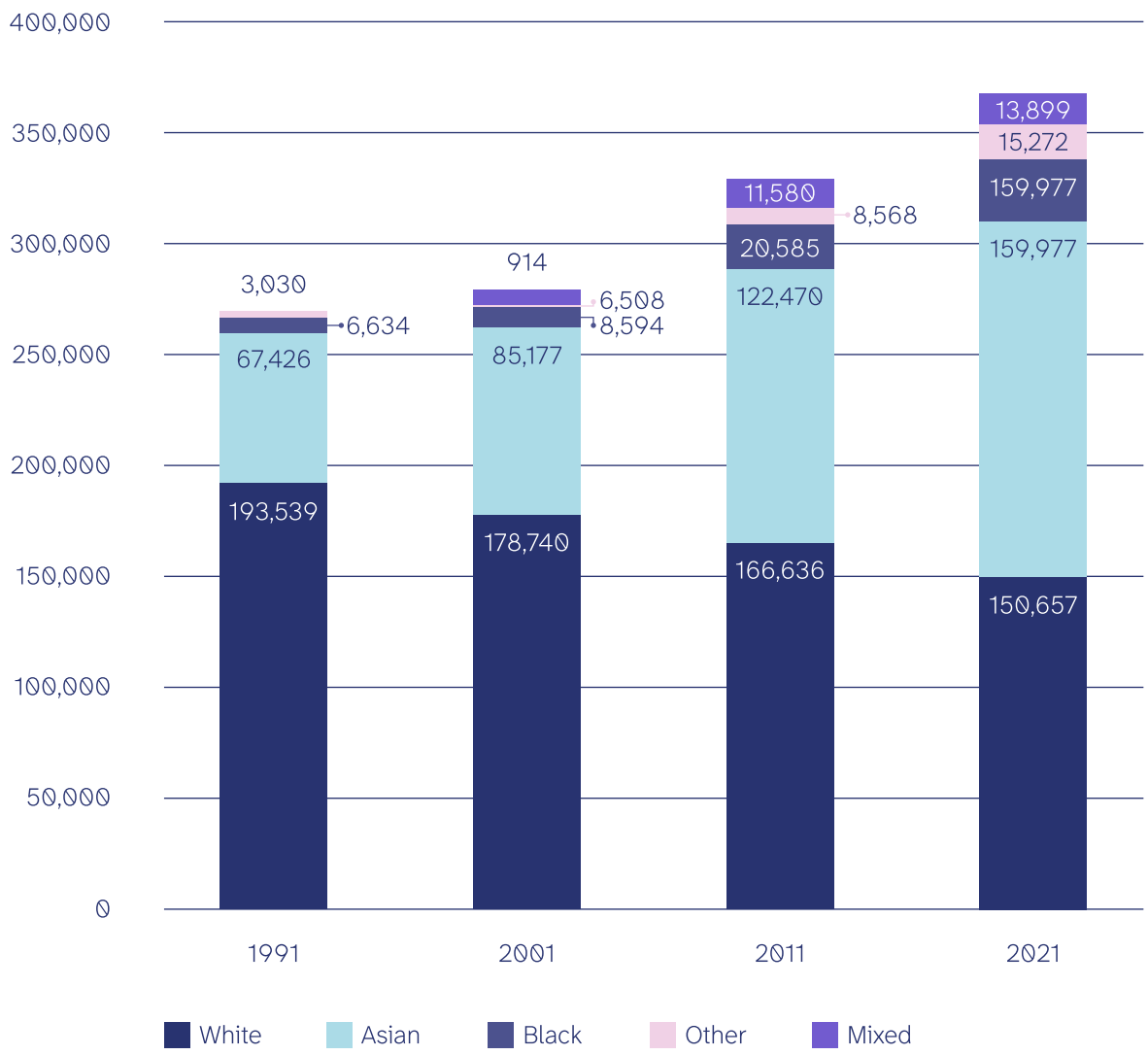
1800s: Predominantly White British, with small Irish and other European communities (including Italian and Jewish communities). The city attracted many Irish migrants, especially in the 1840s, during the Irish Famine.

Mid-1900s: Caribbean and South Asian migration becomes significant, especially post-WWII.

The first census to include a question on ethnicity was 1991. Between 1991 and 2021, Leicester's total population has increased by almost 100,000 from, 270,629 to 368,571.

Over the last forty years, the number of White residents has decreased while the number of residents from all other broad ethnic groups has increased.

LEICESTER POPULATION CHANGE BY BROAD ETHNIC GROUP



Ethnic groups in Leicester over the last 3 decades, Source: Census 1991, 2001, 2011, 2021

LEICESTER DEPRIVATION

Leicester is one of the most deprived areas in England and is ranked 32nd out of 317 local authority areas on the 2019 national Index of Multiple Deprivation (where 1 is worst). In Leicester, 36% of Leicester's population live in the most deprived 20% of areas in England and a further 38% live in the 20–40% most deprived areas. Only 2% of the Leicester population live in the 20% least deprived areas.

Areas of high deprivation usually have relatively low income, few good employment opportunities, and a high prevalence of poor health and disability compared to less deprived places. Deprivation is associated with a range of poor health behaviours and outcomes such as high smoking rates, high obesity rates, and experience of dental decay in children. In England, men in the most deprived areas can expect to live in good health for almost 20 years fewer than those who live in the least deprived areas.[6]

LEICESTER GENERAL HEALTH AND LONG-TERM CONDITIONS

Census 2021 asked respondents to assess their general health on a five-point scale as Very good, Good, Fair, Bad or Very bad. 82% of Leicester residents described their general health as either 'Very good' (49%) or 'Good' (33%). 5% described their health as either 'Bad' (4%) or 'Very bad' (1%). Levels of general health are similar for Leicester and England. Census 2021 asked respondents whether they had any physical or mental health conditions expected to last 12 months or more and then a further question for those answering yes as to whether these conditions or illnesses reduced their ability to carry out day-to-day activities.

Age-standardised rates are reported to allow for comparisons between populations that may have different age profiles. For example, Leicester has a younger population profile than England. Age-standardised proportions show 18.6% of Leicester residents have a disability limiting day-to-day activities compared with 17.7% in England.

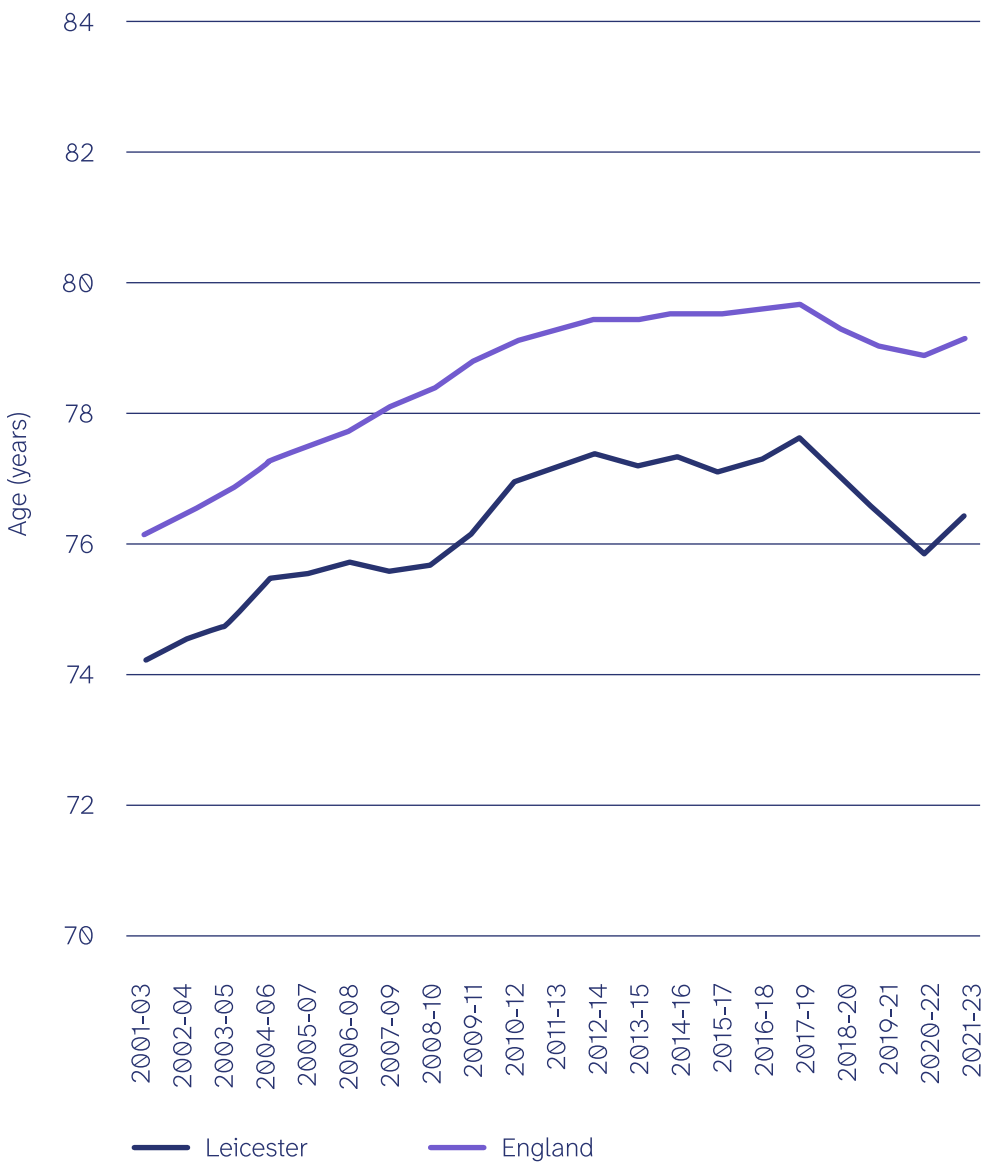
LEICESTER LIFE EXPECTANCIES

Life expectancy data from 2001–03 to 2021–23 shows Leicester residents have consistently had shorter life expectancies compared to the national average for many years, and life expectancy had plateaued in the decade to 2019. Following the Covid-19 pandemic there was sharper drop in life expectancy in Leicester compared to England.

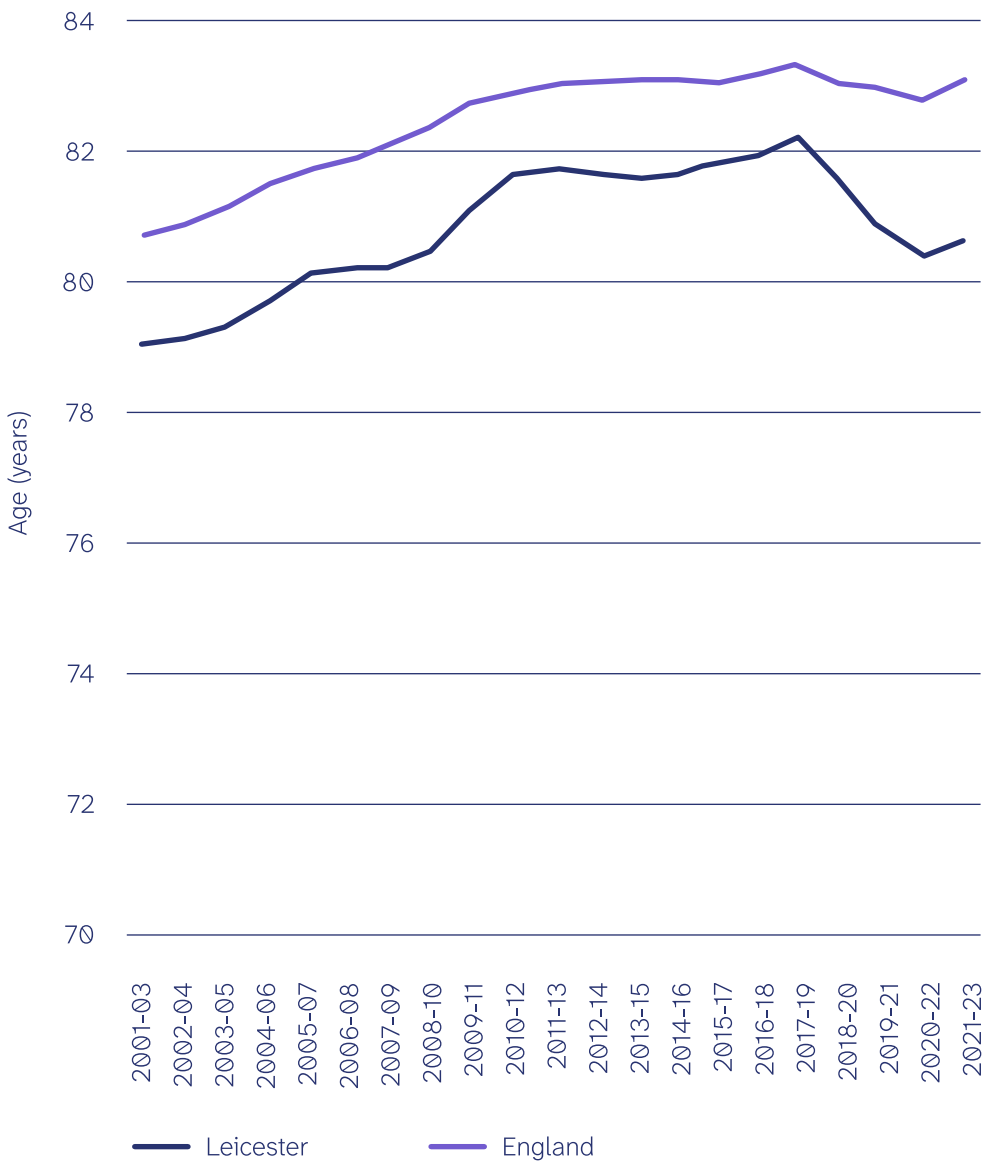
Life expectancy peaked for both Leicester males and females in 2017–19 at 77.7 and 82.2 respectively, and is now currently 76.5 for males and 80.6 for females in 2021–23. The life expectancy gap between Leicester and England is wider now compared to pre-pandemic years at 2.7 years for males and 2.4 years for females.

[6] English Indices of Deprivation: **https://www.gov.uk/government/statistics/english-indices-of-deprivation-2019**

MALE LIFE EXPECTANCY 2001-03 TO 2021-23



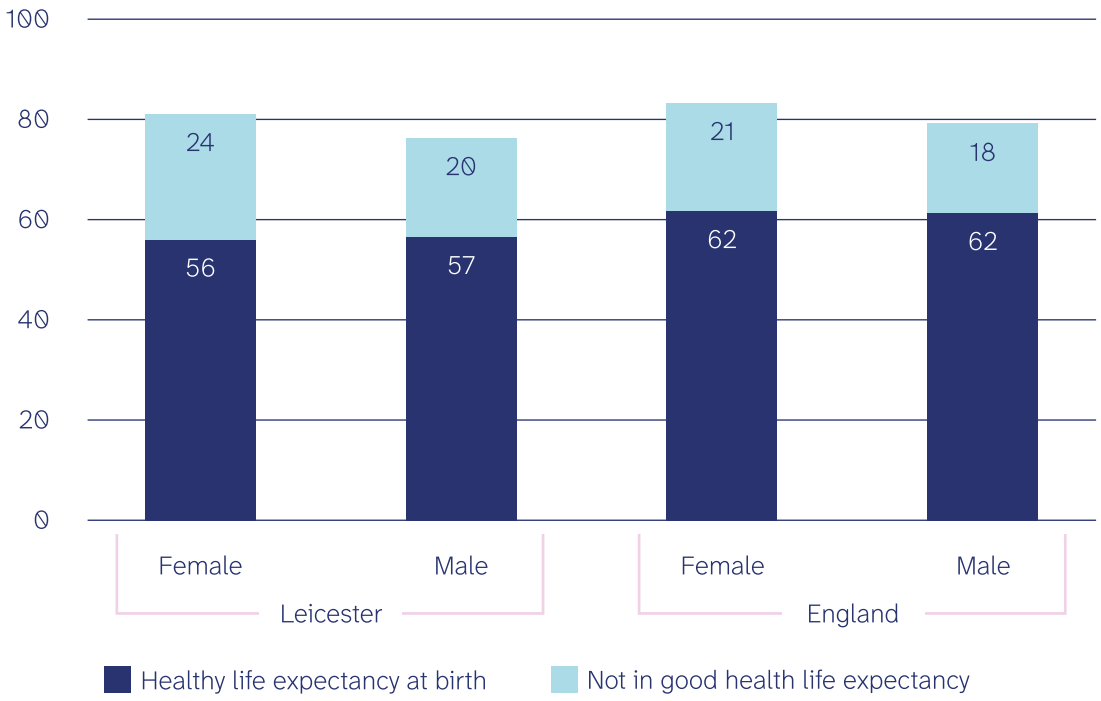
FEMALE LIFE EXPECTANCY 2001-03 TO 2021-23



Office for National Statistics (ONS) National Life Tables

In addition to having shorter life expectancies Leicester residents can expect to have more years in ill health compared to the national average. Leicester females can expect 56 years healthy life and a further 24 in ill health compared to 62 healthy years and 21 ill health years for the England average. Leicester males have a slightly longer healthy life expectancy and a shorter ill health life expectancy leading to a shorter life expectancy overall.

LIFE EXPECTANCY AND HEALTHY LIFE EXPECTANCY 2021–23



Source: OHID Fingertips / ONS mortality data Age Standardised Rates 2021–23.

LEICESTER MAIN CAUSES OF DEATH

The main causes of death in Leicester are cardiovascular diseases (23%), cancer (20%) and respiratory diseases (10%). Mental disorders (9%), nervous diseases (6%), and digestive diseases (5%) also are contributors to deaths in Leicester.[7]

Leicester reports significantly higher rates of premature/under 75 mortality from:

- Cancer (132.7 per 100,000) compared to national rate of 121.6 in England.
- Cardiovascular diseases 108.3 per 100,000) compared to national rate of 77.1.
- Respiratory disease 39.8 per 100,000 compared to national rate 30.3.
- Liver disease 28.4 per 100,000 compared to national rate 21.5.
- Dementia and Alzheimer's disease 159.2 per 100,000 compared to national 109.9.

[7] Office for National Statistics mortality data, 2021–23

One Hundred Years of Public Health — 1848–1948

The 1948 Medical Officer of Health (MoH) for Leicester annual report (by Dr E.K. Macdonald) marked the 100 year anniversary since the introduction of the 1848 Health Act which made appointing a MoH mandatory for local authorities. To celebrate this milestone, his Deputy MoH, Dr Hutchison, wrote a short chapter summarising key issues from these reports. This is a fascinating read and contains the following examples and highlights:

1846

Town Improvement Committee appointed Dr Barclay and Mr Buck as medical officers 'for the purpose of removing nuisances and annoyances' in advance of the 1848 Health Act mandating Medical Officer of Health (MoH).

1849

Mr Buck was appointed MoH and immediately put forward schemes for removal of obnoxious material from cesspools, cleaning and ventilation of lodging houses, closer inspection of slaughter houses and work to reduce diarrhoeal diseases in infants to reduce infant mortality.

1851

Infant mortality 194.5 per 1000, (peaked 1871 at 252, by 1948 dropped to 38).

1852

Deaths from diarrhoea 139 (peaked 1897 with 472 deaths). The MoH expresses concern on the slow progress of the construction of mains sewers.

1856

MoH reported a steady increase in cases of TB (Consumption).

1858

174 deaths from scarlet fever and 117 from diarrhoea. MoH commented on overcrowding in schools being 'injurious to health'.

1859

86 deaths from "hooping cough" (pertussis). The MoH also condemned the fact that many parents worked in factories, leaving children in the care of older siblings or neighbours. When children were not quiet, it was reported that some resorted to "remedies of an alcoholic and narcotic character, such as gin or Godfrey's cordial."

1861

A sharp increase in TB among factory workers. Dr Moore, the MoH states that the Local Health Board had not adequate powers to improve working conditions.

1863

236 deaths from scarlet fever (none since 1942).

1864

MoH commented on shortage of nurses to look after patients with smallpox.

1867

Saw the introduction of a social insurance scheme allowing sick pay for females on the condition that they breastfed their children! This year also saw birth of health education with leaflets advising on avoiding diarrhoea and infant feeding advice.

1868

249 deaths from measles. The report also had commentary on work with local registrar that found cases where deaths for same person had been registered 3 times by different 'unqualified quacks and herbalists' meaning the family were given funding for funeral costs 3 times!

1870

Made a plea for an isolation hospital for scarlet fever. The suggestion was turned down.

1872

314 deaths from smallpox. This year also saw the construction of a smallpox hospital (became a fever hospital in 1873) on Freake's ground.

1874

MoH put forward theory that summer diarrhoea was caused by the heat.

1876

The Assistant MoH put forward alternative theory that diarrhoea was caused by 'the introduction of minute living organisms into the system by means of air or by food' and that in areas with poor sewers and cesspit milk was often infected.

1879

Introduction of compulsory registration of infectious disease (now known as notifiable diseases). Despite significant complaints by medical professionals for creating 'new onerous and unnecessary obligation' in practice no complaints were made to the MoH and the birth of one of the most significant developments for understanding and controlling infectious diseases was born.

1882

MoH concerned about increasing cases of TB and gave advice on opening windows and better ventilation.

1883

Recommended systematic food sampling be introduced.

1885

A laboratory opened in the Town Hall postulating that TB from infected milk was causing human infection.

1886

The Lancet sent a special commissioner to Leicester to investigate the “Leicester Method’ to control smallpox.

1887

The opening of Spinney Hill Park encouraging fresh air and exercise bringing ‘pleasure to the local inhabitants’.

1888

MoH commented favourably on arrangement for sharing of data with colleagues in large towns in the area. Eventually taken over by the Local Government Board as a national surveillance system.

1889

The medical officer referred to a statement in the Manchester Guardian which asked, “would not our own (Manchester) City Council do well to send a selected deputation in order to learn what is be learned at Leicester of the means by which the death rate can be reduced by nearly 30% in eight years?”

1889

MoH made a plea for the replacement of ‘pail’ system for modern Water Closets (WCs).

1891

Saw health education become part of the school curriculum.

1898

211 measles deaths and the start of construction of the new fever hospital.

1898

Marked the 50th from the local medical officer and presented the following comparative data on child mortality as a proportion of all deaths in 1849 and 1898:

Population		Total number of births	Total number of deaths	% of deaths <age 5 to the total death rate
1849	58,000	2,807	1,681	49.8
1898	208,662	6,152	3,480	50

Isolation Hospital, Leicester. Nurse with 2 female patients reclining on porch area of hospital

1899

Large outbreak of diphtheria and 331 deaths from TB. 9/22 milk samples taken contained TB.

1900

Completion of the Groby Rd Isolation Hospital. Peak of deaths from diphtheria — 316 deaths (1948 1 death). Corporation opens a milk sterilization depot.

1902

MoH arranged for free diphtheria antitoxin supplies to GPs.

1905

Municipal milk depot established for babies not being breastfed. Infantile diarrhoea much diminished.

1907

MoH commented on growth of a garden suburb at Humberstone, developed on garden city lines.

1913

Attention was given to housing, with efforts to demolish old houses and construct new ones that could be maintained.

1918

Influenza epidemic — 1100 deaths, mostly during October and November. Undertakers were unable to cope. In week ending November 2nd 262 persons died. Hospital wards were evacuated to create space for patients.

1919

Post WWI a second influenza wave caused a further 500 deaths.

1920

MoH complained about the slow progress of house building.

1924

429 cases of diphtheria and 34 deaths. There were now 12 health visitors and 184 ante-natal sessions were held.

1926

Outbreak of Polio (81 cases and 7 deaths). Leicester Corporation had built more than 1,000 houses, with a further 667 constructed by private enterprise — described as homes for working-class people.

1928

Infant mortality rate dropped to 70.71 per 1000 births — the lowest on record.

1929

Local Government Act and North Evington Poor Law Infirmary transferred to the Public Health Department and became the City General Hospital.

1930

Infant mortality rate dropped again to 55.7 per 1000 births. A report on alcohol abuse which was increasing.

1936

No deaths from measles or scarlet fever reported.

1937

1709 families had moved into new housing.

1938

Infant mortality 45.9 / 1000 births — another record. Most work focussed on Air Raid Precautions.

1939

WWII.

1945

Opening Radiography Centre (Mass X-Ray Service).

1946

Infant diarrhoea rose again. National Health Service Act passed.

1947

Large outbreak polio — the most severe in history of the city. Health Visiting and School Nursing Services integrated.

1948

The year the NHS was created. This year saw only 1 death from diphtheria, and no deaths from scarlet fever or measles.

Despite the successes over this period for public health services, Dr MacDonald has the humility to state “It would be wrong to assume that all these improvements in the health of the population were solely due to the influence of the Public Health Department. Many other agencies have helped to improve the all-round standard of health among the community e.g., hospitals... GPs... better housing, better standards of nutrition, better education, and social legislation”.

A LIFETIME OF PROGRESS: PUBLIC HEALTH IN LEICESTER FROM 1948 TO TODAY

Since the founding of the NHS in 1948, the landscape of public health in Leicester has transformed in ways that would have once seemed unimaginable. From the near elimination of infectious diseases that once dominated annual health reports, to rising life expectancy and improved living conditions, the progress over the last 75 years is a testament to the power of coordinated public health and local authority action.

Vaccination has played a central role in this transformation. In the immediate post-war years, childhood diseases like diphtheria, polio, and measles caused significant illness and death. But thanks to the development and rollout of effective vaccines, these conditions are now rare. In 1948, Leicester saw one death from diphtheria, a disease that had killed hundreds in previous decades. By the 1950s, mass immunisation campaigns — supported by schools, GPs, and public health nurses — had begun to change the trajectory of many diseases that once devastated communities. The introduction of the MMR vaccine in the 1980s, offering lifelong protection against measles, mumps, and rubella, marked another major milestone.

As we will see in the next chapter, the eradication of smallpox in 1980, following global mass vaccination efforts, was the ultimate validation of the combined approach of both vaccination and effective social measures, pioneered in Leicester nearly a century earlier. The development of new treatments has also played a key role in improving health outcomes. In the 1970s, new antibiotics dramatically reduced the duration and severity of Tuberculosis (TB) , which had once required years of treatment in sanatoriums. Diseases that were once fatal or debilitating could now be managed, cured, or prevented altogether. The widespread availability of these treatments through the NHS has meant that health outcomes have improved not just for the wealthy, but across the population.

But the progress hasn't only come from medical advances. As we see in Chapter 4, living conditions in Leicester have also changed beyond recognition. Post-war housing programmes, slum clearance initiatives, and the expansion of social housing provided many families with warm, safe, and sanitary homes for the first time. The provision of clean drinking water, proper sewerage systems, and waste collection continued to reduce the spread of disease and improve quality of life.

Mass radiography unit demolition Castle Street 1964

From the 1970s onward, improvements in food safety, environmental health, air quality, and workplace standards continued to reduce preventable illness and premature death. More recently, efforts to combat fuel poverty and improve housing energy efficiency have shown how public health today is still deeply rooted in the environments where people live, work, and grow up.

Yet the last 75 years have not been without significant challenges. Inequalities in health outcomes persist. Leicester continues to face higher rates of long-term conditions such as diabetes, cardiovascular disease, and respiratory illness — especially in areas of higher deprivation. Life expectancy in the city lags behind the national average, and too many people spend a significant portion of their lives in poor health. The Covid-19 pandemic exposed and, in some cases, deepened these health gaps.

Today, we also face new challenges. Climate change, antimicrobial resistance, rising mental health needs, and the cost-of-living crisis all threaten to reverse some of the gains of previous decades. And while vaccines remain one of our most effective tools, vaccine confidence cannot be taken for granted. The recent outbreak of measles in Leicester reminded us of the importance of sustained public engagement, access, and trust in health services.

Despite these pressures, the story of public health in Leicester since 1948 is one of extraordinary achievement. Deaths from many infectious diseases are now vanishingly rare. Housing, sanitation, and access to care have improved dramatically. And where once there was little support for those in poor health, we now have a universal health system and a public health team rooted in communities.

The task ahead is to protect and build on these gains — to ensure that progress is not only maintained, but shared more fairly across our city. The foundations are strong, but the work continues.

LIST OF MEDICAL OFFICERS OF HEALTH IN LEICESTER SINCE 1849

1849–1852	John Buck
1852–1866	John Moore
1866–1878	J. Wyatt Crane
1878–1885	William Johnstone
1885–1891	Hy. Tompkins
1891–1895	Joseph Priestly
1895–1901	Henry G. H. Monk
1901–1935	C. Killick Millard
1935–1960	E. K. Macdonald
1960–1973	B. J. L. Moss

The responsibility for public health was taken over by the NHS from 1974 until 2013 when it returned to local government. Since then the Directors of Public Health have been:

2013–2015	Deb Watson
2015–2019	Ruth Tennant
2019–2023	Ivan Browne
2023–	Rob Howard

Communicable Disease Control — past and present

In order to compare the experiences and attitudes to infectious disease historically and in the present day, I will look at 2 main topics:

- Smallpox and attitudes to compulsory vaccination in the 19th century, and the lessons learnt from this and our recent experience with Covid-19 and measles
- Tuberculosis (TB) — historic and current challenges.

Smallpox in 19th Century Leicester: Public Resistance, the "Leicester Method", and Lessons for Public Health Today

The experience of smallpox in 19th-century Leicester offers a rich historical case study of public health, community resistance, and innovation in disease control. Amid widespread fear of the disease and growing state involvement in health, Leicester became a focal point for resistance to compulsory vaccination and the development of alternative approaches, culminating in the "Leicester Method". While initially controversial, the eventual compromise between vaccination and broader public health measures (including what we now call contact tracing and isolation) was instrumental not only in managing outbreaks locally but also in shaping strategies that contributed to the global eradication of smallpox.

THE CONTEXT OF SMALLPOX AND COMPULSORY VACCINATION

Smallpox was one of the deadliest infectious diseases of the 19th century, causing high mortality and morbidity. Following Edward Jenner's development of the smallpox vaccine in 1796, vaccination became a central pillar of disease control in Britain. The Vaccination Acts of 1853, 1867, and 1871 progressively made vaccination compulsory and enforceable, particularly targeting infants and young children.[8] The intention was to create population-level immunity, but in cities like Leicester, these laws provoked considerable backlash.

Opposition stemmed from concerns about the safety and efficacy of vaccination, infringements on personal liberty, and distrust of the medical profession. Many working-class residents viewed the enforcement of vaccination as punitive and authoritarian, particularly as non-compliance could lead to fines and imprisonment.

[8] Porter, D. and Porter, R. (1988) 'The Politics of Prevention: Anti-Vaccinationism and Public Health in Nineteenth-Century England', Medical History, 32(3), pp. 231–252.

PROTESTS AND THE ANTI-VACCINATION MOVEMENT

Leicester became a centre of organised resistance to compulsory vaccination. The anti-vaccination demonstration of 1885 is emblematic of this sentiment, attracting an estimated 80,000 protesters.[9] The scale and organisation of the protest — complete with banners, marching bands, and speeches — demonstrated the depth of local opposition. Anti-vaccination candidates were elected to the Board of Guardians[10], enabling them to reduce enforcement and promote alternative measures.

THE LEICESTER METHOD: AN ALTERNATIVE MODEL

Leicester residents, with liberal and radical leanings, strongly opposed the mandate and formed the Leicester Anti-Vaccination League in 1869. Between 1869 and 1881, 1,154 prosecutions were recorded, including 61 imprisonments. The Leicester Corporation Act 1879 introduced an alternative method of disease control, later known as the Leicester Method. Now referred to as Test, Trace and Isolate, it emphasised immediate isolation of cases, thorough contact tracing, disinfection of infected households, and the use of dedicated isolation hospitals.

Voluntary vaccination was still offered, particularly for close contacts during outbreaks, but the emphasis was on hygiene and containment. Despite official warnings, Leicester experienced relatively few smallpox deaths during subsequent outbreaks, which bolstered the community's belief that their alternative approach — focusing on sanitation and isolation — was superior to enforced vaccination.

THE ROLE OF COMPROMISE: FROM CONFRONTATION TO COLLABORATION

The success of the Leicester Method highlighted the value of environmental and social measures in disease control. However, the limitations of a largely non-vaccination approach also became apparent in subsequent years, particularly during more severe outbreaks. Over time, a more balanced model of public health emerged in the UK — one that retained the importance of vaccination while also recognising the role of sanitation, education, and consent. This shift was codified in the Vaccination Act of 1898, which introduced a "conscientious objection" clause. Parents could now opt out of compulsory vaccination on ethical grounds.

GLOBAL IMPACT AND THE ERADICATION OF SMALLPOX

While Leicester pioneered local non-vaccination approaches, vaccination remained central to the global eradication of smallpox in the 20th century. The World Health Organization's (WHO) intensified smallpox eradication campaign, launched in 1967, used mass vaccination combined with many of the principles trialled in Leicester — surveillance, contact tracing, containment, and isolation. Smallpox was declared eradicated in 1980, a remarkable feat that required widespread immunisation to create herd immunity, supported by rigorous public health infrastructure and community cooperation.[11]

[9] Durbach, N. (2005) Bodily Matters: The Anti-Vaccination Movement in England, 1853–1907. Durham: Duke University Press.
[10] **https://en.wikipedia.org/wiki/Board_of_guardians**
[11] Fenner, F., Henderson, D. A., Arita, I., Ježek, Z. and Ladnyi, I. D. (1988) Smallpox and Its Eradication. Geneva: World Health Organization.

Two boys with smallpox, photographed by Dr. Allan Warner, Assistant Medical Officer of Health, at the Isolation Hospital at Leicester in 1901. Atlas of Clinical Medicine, Surgery, and Pathology, 1901[12]. Shows two boys, both aged 13 years. The one on the right was vaccinated in infancy, the other was not vaccinated. They were both infected from the same source on the same day.

[12] **https://archive.org/details/b21513508_0001/page/n425/mode/2up?view=theater**

Lessons for Public Health in Leicester Today

COVID-19

The legacy of Leicester's 19th-century experience with smallpox informed the city's response to Covid-19, particularly in tackling vaccine hesitancy. Just as public resistance to compulsory vaccination in the 1800s was rooted in concerns around safety, liberty, and trust in authority, similar themes emerged during the Covid-19 pandemic. Leicester recognised early on that building trust was fundamental to increasing vaccine uptake, especially in communities historically underserved or marginalised by state systems.[13]

Drawing on behavioural science, our local public health teams developed tailored communication strategies that reflected the real-world contexts in which people make health decisions. Rather than relying solely on national messaging, we crafted locally relevant campaigns that were empathetic, culturally sensitive, and framed around collective responsibility. These campaigns were informed by insights from behavioural science on what motivates behaviour change — such as the influence of trusted messengers, social norms, and the importance of clarity and repetition.[14] Our work using the COM-B behaviour science model[15] emphasised that addressing vaccine hesitancy requires both emotional resonance and factual accuracy — combining data with storytelling to speak directly to community concerns.[16]

A cornerstone of Leicester's response was the creation of the Vaccine Community Champions programme. Community members from diverse backgrounds were trained and supported to become advocates for vaccination within their own networks. These Champions were not merely conduits for information; they were active listeners who helped bridge the gap between communities and health services. They played a critical role in identifying barriers, addressing concerns, and countering misinformation circulating on social media — particularly in relation to vaccine safety, fertility myths, and conspiracy theories.[17]

In addition to vaccine outreach, Leicester also developed its own contact tracing programme, staffed by people who lived and worked in the same communities they were serving. This localised approach improved the speed and effectiveness of tracing efforts, and more importantly, helped to foster trust. People were far more likely to answer the phone or open the door when contacted by someone with a shared cultural background or local knowledge, and who could offer practical support and advice alongside public health guidance.

By investing in community-based solutions and listening to people's lived experiences, Leicester was able to build the trust necessary for a successful public health response. The historical lesson — that health interventions must be done with communities, not to them — was not only remembered, but actively applied. In doing so, Leicester demonstrated how the principles of consent, communication, and collaboration remain as vital today as they were in the era of the Leicester Method.

[13] Royal Society for Public Health (2021) New polling shows vaccine hesitancy highest in BAME groups. Available at: **https://www.rsph.org.uk/about-us/news/new-poll-finds-bame-groups-less-likely-to-want-covid-vaccine.html** [Accessed 9 Apr. 2025].

[14] Behavioural Insights Team (2021) Four principles for developing effective COVID-19 vaccine communications. Available at: **https://www.bi.team/blogs/four-messages-that-can-increase-uptake-of-the-covid-19-vaccines/** [Accessed 9 Apr. 2025].

[15] **https://social-change.co.uk/files/02.09.19_COM-B_and_changing_behaviour_.pdf**

[16] Michie, S. and West, R. (2021) 'Behavioural, Environmental, Social and Systems Interventions Against COVID-19', BMJ, 372, n92. DOI: 10.1136/bmj.n92.

[17] **https://www.leicester.gov.uk/content/beyond-the-lockdowns-lessons-learned-from-leicester-s-covid-story/healthy-places/#Community%20Champions**

MEASLES 2024 OUTBREAK

Measles is one of the most contagious diseases in the world. It is caused by a virus that can spread through the air when someone who is infected coughs or sneezes. The virus can stay in the air for up to two hours and infect people who breathe it in. On average, one person with measles can pass it on to 12 to 18 other people if they aren't protected. Leicester, like many industrial cities in the UK, experienced regular and sometimes severe outbreaks of measles throughout the 19th and early 20th centuries. These outbreaks were particularly devastating for young children and often occurred in overcrowded urban areas where poor housing, sanitation, and limited access to healthcare made the spread of infectious diseases more likely. Measles was a common childhood illness, but it could lead to serious complications, including pneumonia and encephalitis. The introduction of the measles vaccine in the late 1960s significantly reduced cases across the UK, including in Leicester. The MMR vaccine, which protects against measles, mumps, and rubella, is given in two doses. It is very safe and works extremely well — giving 97% protection for life — and helps stop the disease from spreading in the community.

In 1868, 249 people died from measles in Leicester. The 1898 report recorded 211 deaths during an epidemic. In England and Wales in 1941 saw 1145 measles deaths. Last year there were 3, with none in Leicester.

2024 saw a significant increase in measles cases in Leicester with around 150 confirmed cases. To keep everyone safe, especially babies and those who can't have the vaccine, at least 95% of people need to be vaccinated. However, vaccination rates have fluctuated over time, and occasional outbreaks have reappeared in areas or communities with lower uptake. The 2024 measles outbreak in Leicester tested the city's public health system once again — but also demonstrated how the lessons of history had been meaningfully applied. As with the Covid-19 pandemic, addressing vaccine hesitancy was central to the response. While concerns about the MMR (measles, mumps, and rubella) vaccine have persisted for decades, the legacy of misinformation stemming from Andrew Wakefield's now-discredited claims of a link between the vaccine and autism continued to influence public perceptions.[18]

However, vaccine hesitancy during the measles outbreak proved to be more complex and nuanced than misinformation alone.

In some communities, particularly among certain religious groups, concerns were raised about the porcine-derived content in some formulations of the MMR vaccine. While these concerns were not new, they had not always been adequately addressed in previous public health campaigns. In 2024, Leicester's public health team and LLR Integrated Care Board (ICB) responded proactively by ensuring that non-porcine gelatine-free vaccine formulations were made available at vaccination sites across the city. This practical accommodation, made in consultation with religious leaders, helped address a key barrier to uptake.[19]

Just as we had mobilised Vaccine Champions during Covid-19, the city adapted this approach through its Community Wellbeing Champions network. Alongside the excellent team from the LLR ICB and our own brilliant public health officers, these individuals and organisations (now over 600 members), already embedded in local communities, were trained to support the measles response by listening to concerns, providing accurate information, and helping to dispel persistent myths.[20] Crucially, they worked in partnership with schools, GPs, local places of worship, and community centres — spaces where trust was already established.

[18] Godlee, F., Smith, J., and Marcovitch, H. (2011) 'Wakefield's article linking MMR vaccine and autism was fraudulent', BMJ, 342, c7452. DOI: 10.1136/bmj.c7452.
[19] British Islamic Medical Association (2023) MMR and Islam: Guidance on the use of porcine products in vaccines. Available at: **https://britishima.org** [Accessed 9 Apr. 2025].
[20] Leicester City Council (2024) Community Wellbeing Champions Programme: Interim Evaluation Report. Leicester: Public Health Team.

To ensure accessibility, we deployed roving vaccination units that brought the service directly to the heart of communities. These mobile teams visited schools, religious venues, and community hubs, removing logistical barriers such as travel, time, or unfamiliarity with health settings.[21] As a result, nearly 600 people received the MMR vaccine helping to end a potentially very serious outbreak. This approach was particularly effective in reaching children and young people who had missed their routine childhood vaccinations during the Covid-19 pandemic or due to longstanding hesitancy.

Once again, the city's response was shaped by the understanding that community trust, cultural sensitivity, and local partnership are as important as clinical effectiveness in any vaccination campaign. By applying the lessons of Leicester's own past — combining historical awareness with practical compassion — we were able to contain the outbreak and rebuild confidence in routine immunisation.

Social media post promoting roving vaccination unit in community settings, 2024.

IN SUMMARY, THE LEGACY OF LEICESTER'S HISTORY OF INFECTIOUS DISEASE CONTROL CONTINUES TO OFFER IMPORTANT LESSONS:

- **Trust and Consent Matter:** Public health interventions are most effective when communities understand, trust, and consent to them. Heavy-handed enforcement can backfire and erode compliance.
- **Vaccination and Public Health Infrastructure Must Work Together:** Vaccines are essential tools, but they work best within broader systems of hygiene, housing, education, and healthcare access.
- **Community-Led Innovation Has Value:** Leicester's community response, while controversial, contributed valuable insights into disease control that shaped national and global policy.
- **Tailored Responses Are Crucial:** As seen during the Covid-19 pandemic, one-size-fits-all approaches can be less effective than strategies adapted to local conditions and cultures.

[21] BBC News (2024) 'Measles outbreak: Leicester uses mobile vaccine teams to reach affected communities', BBC News, 12 February. Available at: **https://www.bbc.co.uk/news** [Accessed 9 Apr. 2025].

Tuberculosis (TB)

A HISTORY OF TB IN ENGLAND AND WALES.

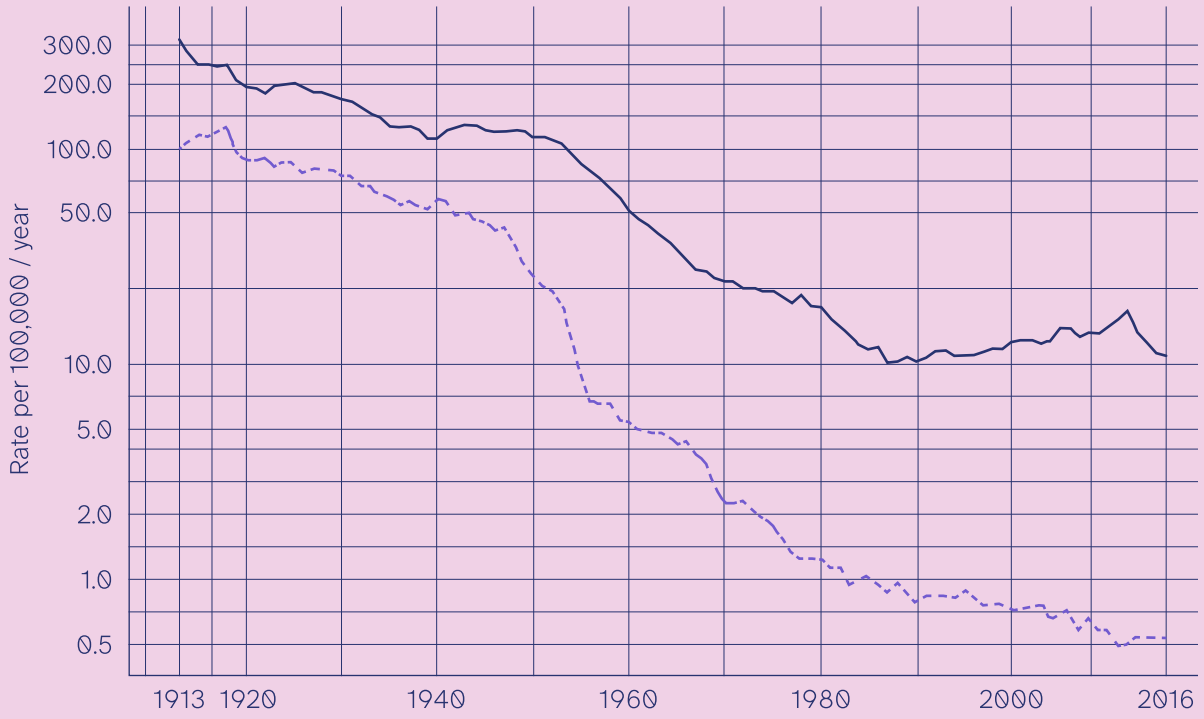
Tuberculosis (TB) posed a significant public health challenge in Leicester during the 19th and early 20th centuries. The city's rapid industrialisation led to overcrowded housing and poor sanitation, creating ideal conditions for the spread of TB, commonly known as "consumption." The disease primarily affected the lungs and was highly contagious, thriving in densely populated working-class neighbourhoods.

Medical understanding of TB evolved notably after Robert Koch's discovery of the tuberculosis bacillus in 1882, confirming its infectious nature. This breakthrough prompted targeted public health interventions in Leicester, including the establishment of open-air schools and specialised hospitals aimed at controlling the disease.

One prominent example is the Western Park Open Air School, Leicester's first open-air school for children with respiratory problems, which opened on 7 November 1930. The school was designed to provide a healthy environment with ample fresh air and sunlight, believed to be beneficial for children susceptible to TB. The school's design featured wide-opening windows to maximise ventilation.

In 1937, it was recognised by the Royal Institute of British Architects for its modern design and was later granted Grade II listed status by Historic England. Leicester's Chief School Medical Officer, Allan Warner, described the school as offering a "healthy environment" aimed at restoring children's health and developing them into "hardy men and women," reflecting the interwar emphasis on building robust citizens.

TB INCIDENCE AND MORTALITY RATES 1913–2016



TB incidence (solid line) and mortality (dashed line) rates per 100,000 populations per year in England and Wales, 1913–2016. The introduction of Isoniazd and Rifampicin in the 1970s enabled treatment to be reduced from 18 months to 9 months and in the 80s, adding pyrazinamide reduced this further to 6 months.

[22] Philippe Glaziou et al. Thorax 2018;73:702-703

In addition to educational initiatives, Leicester developed specialised medical facilities to treat TB patients. Founded in 1771, The Leicester Royal Infirmary expanded its facilities over time to address various health needs, including the Groby Road Isolation Hospital and Santorium for the treatment of many infectious diseases including TB. With the arrival of the NHS in 1948, it was renamed the Leicester Isolation Hospital and Chest Unit. As conditions began to improve after the war and antibiotics and vaccinations were introduced, the burden of TB was hugely reduced, with the rate falling from 60 deaths per 100,000 population in 1945, to just 2 by 1970.

The establishment of these open-air schools and specialised hospitals in Leicester reflected a broader public health strategy aimed at combating TB through environmental and educational interventions. These efforts, championed by medical professionals like Dr Allan Warner and supported by public health officials, laid the groundwork for modern approaches to disease prevention and health promotion in the city.

Charles St 1920, now location of Leicester City Council

TB TODAY

Sadly this initial progress has not continued. In 2023, TB became the world's leading cause of death from a single infectious agent. More than 10 million people continue to fall ill with TB every year and in 2023, 1.25 million died from the disease. The World Health Organisation's 'End TB' strategy aims to reduce incidence and burden of TB disease. The UK reaffirmed its commitment to these aims in 2023 but to date neither the WHO or the UK are on target to meet any of the long term or intermediate outcomes.

England is a low TB incidence country but a decline in notifications over the last decade has now reversed, notifications are increasing at a faster rate and we are moving further away from the trajectory needed to achieve the WHO's End TB targets. 2023 data showed an 11% increase compared with 2022 and provisional data for the first three quarters of 2024 indicated a further 13.7% increase against the same period in 2023. The 2023 increase is the largest reported rise in the current reporting period (1971 to 2023) and while rates remain below the peak in 2011 (15.6 per 100,000), the ongoing increase in notifications means England is moving further away from the WHO End TB targets and from its low incidence status.

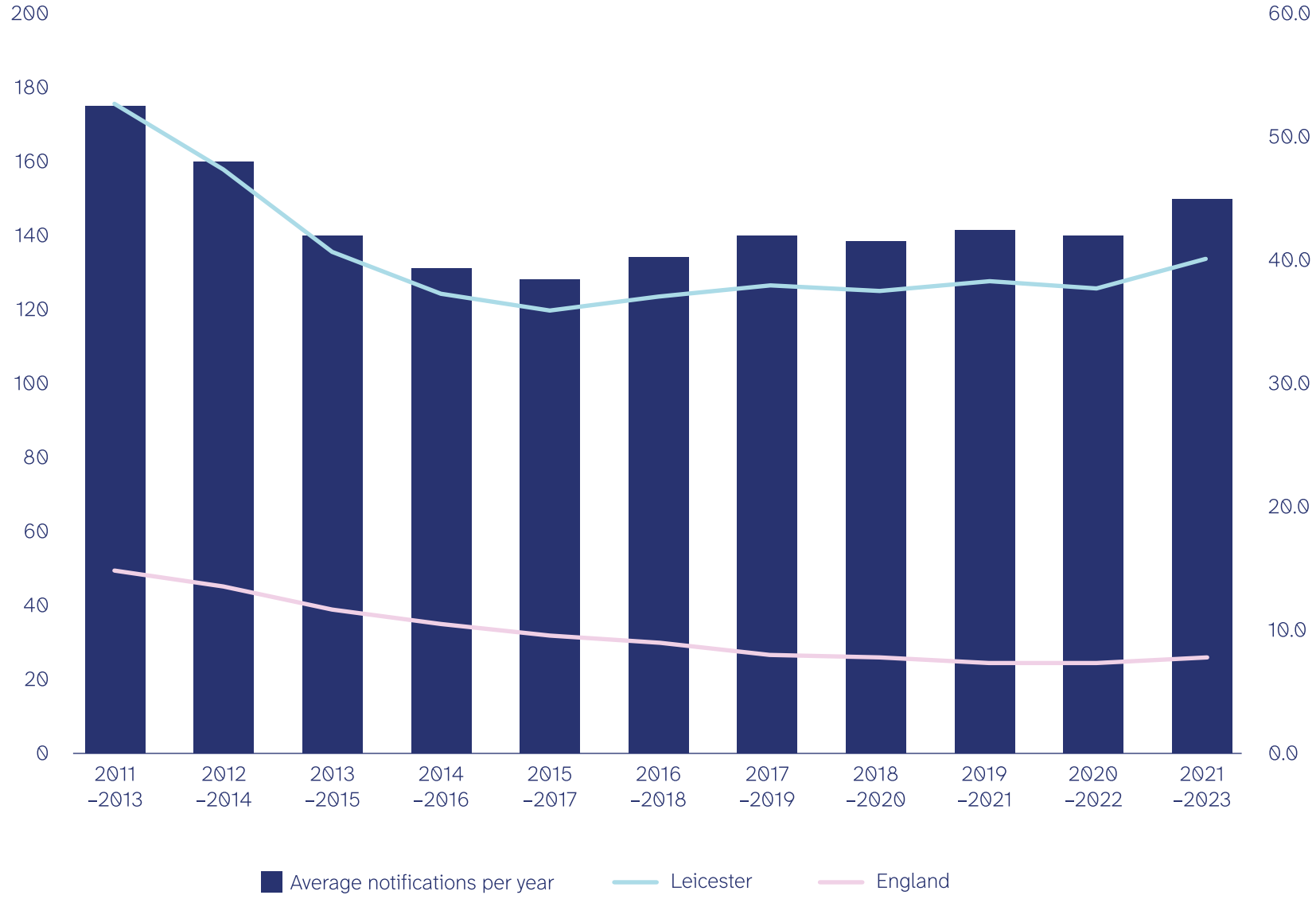
Notification rates in Leicester are now at their highest point for a decade at 40.7 per 100,000 and are the highest in England. Country of birth is the single biggest contributor to case numbers with over 90% of cases in those born in a country of high incidence with the majority of these born in India. Since Brexit, a large increase in non-EU migration is likely to be a contributory factor to increasing notifications in younger males between 25 and 34 years of age. Economic migrants bring much needed skills to the city and county and it is vital that we have adequate latent TB screening processes to ensure those that may previously have been exposed to TB are supported and treated to prevent activation of the disease.

This changing pattern of migration is projected to continue with an increasing number of economic migrants from high incidence countries. The workforce shortages in our health and social care sector mean that offering latent screening and treatment to migrants must be a priority. Increased complexity of cases including drug resistance, comorbidities and the presence of social risk factors creates additional pressure on TB services and long stays in hospital place financial and resource pressure on our health systems. TB is a preventable and curable disease but should not be treated in isolation from its wider contributing determinants such as access to housing and other social support.

A TB Health Needs Assessment (HNA) recently completed by Leicester City Public Health shows increasing case numbers and increasing risk of a continued upward trajectory in the future. However joint work across the system has recently increased the numbers of latent TB screening tests being undertaken, and boosted the size of the local TB Treatment Service.

Recommendations from the HNA are being incorporated into the local TB strategy and implementation plan. This will aim to increase detection and control of TB, support a skilled and resilient workforce, and raise awareness and reduce stigma in communities and professionals.

AVERAGE NUMBER OF TB NOTIFICATIONS IN LEICESTER AND TB NOTIFICATION RATES PER 100,000 IN LEICESTER AND ENGLAND: 3-YEAR RATES



Average TB notification rates: Leicester and England

INCREASE DETECTION AND CONTROL OF ACTIVE AND LATENT TB

Increase LTBI screening in the eligible population

- Develop a flag for System One that triggers eligibility for LTBI
- Develop business case for targeted expansion of LTBI programme

Increase early identification of active TB disease

- Increase proportion of cases starting treatment within 4 months

Strengthened links between TB services and GPs

- Identify GP champions

Increased awareness of TB in GP and other health professionals

- Develop information package on TB

Increased awareness of TB in key local employers and organisations

- Develop and provide training package on TB for all relevant organisations
- Develop employer engagement action plan

ENSURE A SKILLED WORKFORCE BUILDING ON ITS SUCCESSES AND WORKING WITHIN ITS CAPACITY AND RESOURCES

TB workforce aligns with RCN, NICE and WHO standards

- GIRFT reports are used alongside audits of current services
- Business case developed to increase staffing to align with recommended standards

Build on successful completion rates for active and latent TB

- Carry out a feasibility study looking at additional methods of support such as community pharmacies

Increase TB knowledge in other health professionals

- Development of a package of information material including referral pathways and access to treatment

People accessing services are provided with a holistic package of care

- Develop a directory of other organisations that could provide support to a person undergoing treatment e.g. housing support etc
- Carry out patient pathway process maps on latent and active TB pathway
- Quality assurance framework on TB services

RAISE AWARENESS AND REDUCE STIGMA OF TB WITHIN OUR POPULATION

Ensure the voice of those with lived experience is heard

- Set up a process for involvement in all parts of the strategy and services

Increase awareness for those at risk of TB

- Focus groups to understand knowledge, barriers and enables to accessing treatment
- Information packages developed

Increase awareness of TB in wider professional groups

- Development of a package of information material including referral pathways and access to treatment

Increase general population awareness of TB

- Focus groups with community wellbeing champions to understand stigma and enablers
- Develop a suite of information material to include signs and symptoms, transmission, where to go if concerned and other key messages
- Ensure all material is produced using behavioural insights methodology

PREPARE FOR THE FUTURE AND PLAN ACCORDING TO NEED

Understand current demand and future projections

- Carry out a LLR JSNA
- Modelling of future projected demand
- Identify potential gaps in resources and provision based on JSNA, GIRFT report etc

Allocate resources based on need

- Ensure TB rate projections for the most vulnerable are separated from overall population projected figures
- Provide a flexible adaptive response appropriate for our diverse community settings
- Ensure the strategy has SMART objectives targeting resources based on evidence of need

Living and Social Conditions — past and present

Leicester has a long spanning history of planning and development dating back to the Roman period. The earliest evidence of this is our records of the Roman town of Ratae Corieltavorum, with its ordered street network linking key civic buildings. It is estimated that Ratae reached a population peak of around 6,000 in the late 2nd and 3rd centuries[23]. When the Romans conquered Britain in the 1st century, they built extensive public health facilities, such as public baths, toilets, fountains and sewers. The Jewry Wall Roman Baths[24] located in Leicester is one of the largest pieces of Roman masonry still standing in Britain.

Through the Medieval era, Leicester grew slowly. Diseases like the plague were widespread due to poor sanitation.

In the late 18th century, the town started to grow dramatically. This was due to transport infrastructure and demand for labour from the town's expanding hosiery, boot and shoe trades.

In the 19th century the workforce was accommodated by cheap, badly built cottages centred around a courtyard only accessible through narrow entries. This often-lacked sunlight, fresh air and proper ventilation. Most of the cottages had two rooms- one up and one down. Cooking would have taken place over a fire or on a range, there would have been no internal water supply, and the washing would have been done outside. In the 1840s death and disease were shown to be more prevalent in the streets with no drainage.

Slum Clearance Braunstone 1930s

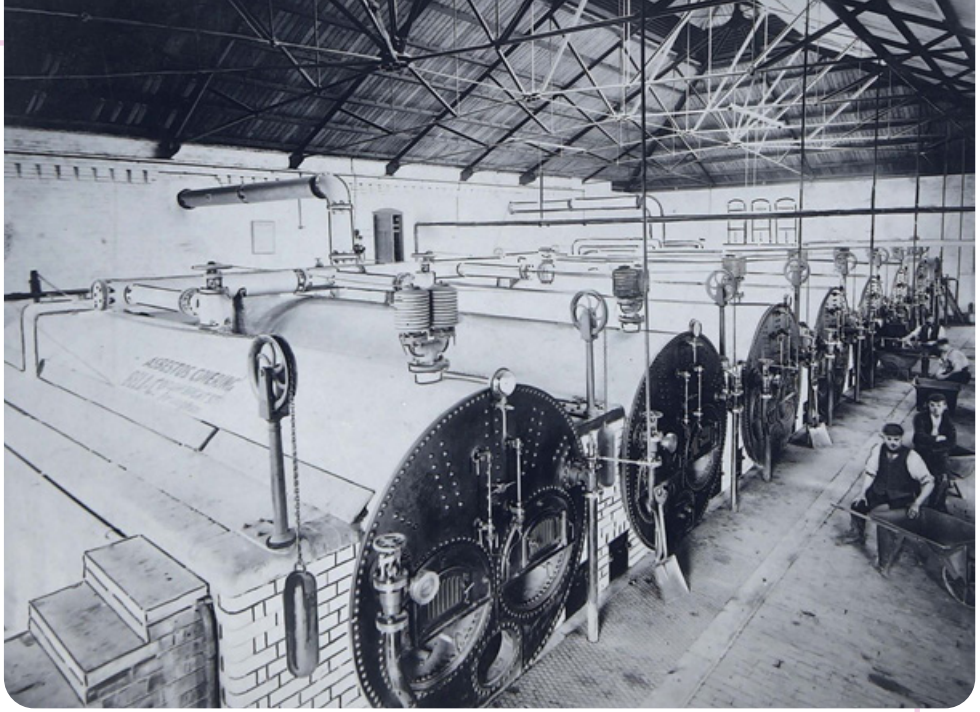
[23] Reinventing Ratae: exploring Roman and medieval Leicester — The Past
[24] Jewry Wall Roman Baths - Story of Leicester

In 1851 there was the summer epidemic of diarrhoea which killed many of the elderly and the very young.[25] In 1871 this was killing one in four Leicester children before their first birthday. As a result, Leicester had the child mortality rate which was twice the national average and on par with London, Manchester and Liverpool. Sadly, this continued into the 20th century. The causes of the epidemic were believed to be poor sanitation and water contamination. The outbreak highlighted the urgent need for reform in urban sanitation systems, which would become a focus of public health authorities in the following decades. Leicester started to receive piped water in 1853 and was the first town to set up a wastewater treatment works.[26]

In 1898, a new sewage system powered by the Abbey pumping station enabled the Town Council to phase out the use of pail closets in the slums.[27] Ashpits were removed as pail closets were converted into water closets. Once this was rolled out at a large-scale Leicester's public health improved dramatically, overtaking many other large towns such as Nottingham. Pail closets were associated with diseases such as Cholera, Typhoid fever, Dysentery etc. Leicester council was distinguished as a progressive authority, although inequalities amongst the poor and the rich remained.

Aerial view of Leicester 1867

[25] Annual Reports of the Medical Officer of Health for Leicester (1849-1859).
[26] 3 SW_WaterInTheHome_p1
[27] The History of Leicester" by Michael P. G. Harris



Abbey Road Pumping Station[28]

Family at Eaton Square, c.1930

SLUM CLEARANCES

In the 20th century slum clearance changed the face of Leicester again. Slum clearances became a part of improving the city's living conditions. Many buildings were destroyed, and new roads and housing took their place. Between 1932 and 1976 around 16,000 houses were cleared. Until then, the slums housed thousands of people in often cramped and unhealthy conditions.

Following WW1, the shortage of housing in Leicester meant that the Council did not continue its limited attempts to close and demolish some of the worst slums until the mid-1920s. Instead, its strategy was to seek the improvement of slums. The post-World War I period marked a significant turning point in housing policy across Britain, with the 1919 Housing Act[29] aiming to tackle the housing crisis by improving conditions and constructing new homes. The Act introduced government subsidies to encourage local authorities to build homes for the working class, and local councils, including Leicester, began to clear slums and build new housing estates. Leicester Corporation acted by building large estates of new homes to replace the old slum areas. In some cases, these new homes were built in nearby areas such as Knighton and Spinney Hills[30].

The Housing Act of 1930 gave local authorities more powers to demolish slums and replace them with new homes. This act was crucial for the continuation of slum clearance efforts in Leicester, where the clearance of unhealthy homes became a key priority. In the 1930s tenants from 78 different clearance areas scattered around the city were concentrated in North Braunstone and Northfields estates.

[28] **https://www.storyofleicester.info/a-working-town/abbey-pumping-station/**
[29] Council housing - UK Parliament
[30] Leicester: A History" by Geoffrey T. Martin

This situation was set out by the financial regime for rehousing by the government and so the City Council was unable to offer tenants much choice. The end of general means building meant that only families from the slums were moved to North Braunstone. Moving a high concentration of lower income families away from their known communities and social support created new challenges to tenants. It was probably hoped that the improved housing conditions would be sufficient to counter poverty or disadvantage.

WW2 efforts brought work on housing to a virtual standstill by 1940. It was another 14 years before the programme was restarted. The 1949 Housing Act further increased government funding for the construction of new homes and slum clearance. In 1952, Lewin Street became the first post-war clearance area. With 247 houses, it was thought to be the largest clearance area in the country at the time[31].

Houses continued being demolished and by mid-1970s the plans drawn up in the 50s were all but complete. At the end of 1976 around 12,500 houses had been demolished, leaving only Martin Street and Laurel Road to be cleared. The city was divided into 54 zones, covering about 35,000 houses which were to be improved during the period of 1976–1991 using renovation grants[32]. Renewal rather than clearance was the preferred methods.

Recent governments have reverted to the belief that private enterprise is better able to meet people's needs. However, it is important to remember that slum housing was the result of unfettered enterprise and that it was through government intervention through slum clearance and the offer of more suitable social housing that improvements were made. Although this did improve housing conditions, poverty and inequality prevailed, for example St Matthew's estate has changed significantly, however it remains the most deprived neighbourhood of Leicester. A 2007 survey showed that, based on income it was the poorest area in England.[33]

Aerial view of Elston Fields
1927, now Saffron Lane Estate

[31] The Slums of Leicester
[32] The Slums of Leicester **https://www.leicestermercury.co.uk/news/history/gallery/the-slums-of-leicester-541382**
[33] St Matthew's, Leicester - Wikipedia

FUEL POVERTY

After the Romans, Leicester's homes were heated by fires, then coal, stoves, and eventually gas central heating by the 1960s. However, recent years have seen an energy crisis driven by soaring gas prices and inefficient housing. In England in 2024, 36.4% of households spent over 10% of their income on energy — up from 27.4% in 2022.[34]

The fuel poverty rate in Leicester remains among the highest in England. In 2001 19% of households in Leicester were fuel poor (compared to 13.6% in the East Midlands and 13.1% in England). A report from The Energy Helpline indicated that Leicester is the joint 8th area most impacted by fuel poverty.[35]

Fuel poverty varies across Leicester with areas in the east reporting highest levels of fuel poverty[36]. Spinney Hill has the highest proportion of fuel poor households (47%) and surrounding areas of Spinney Hill and Charnwood, areas within Newfoundpool, West End and Aylestone have 30-40% of households unable to afford to heat their homes to adequate safe levels.

Households showing lowest levels of fuel poverty are generally located on the outskirts of Leicester in Beaumont Leys and Rushey Fields due to the better insulation and heating standards in social housing, and in Hamilton and South Knighton[37], where incomes are higher.

The health impacts of fuel poverty are widespread. At a basic level it can cause respiratory issues, cardiovascular problems, and can worsen chronic conditions such as chronic obstructive pulmonary disease (COPD). But fuel poverty is also linked to mental health impacts such as anxiety and depression, social isolation and loneliness. Vulnerable populations are particularly impacted; children, the elderly and those with pre-existing medical conditions. There are also many indirect health consequences, for example having to spend more on heating and so being able to spend less on nutritious food, adoption of unsafe heating practices, and even disrupted sleep. Even in the early stages of the energy crisis, estimates suggested that some 10 per cent of excess winter deaths are directly attributable to fuel poverty and 21.5 per cent are attributable to cold homes. (Fuel Poverty, Cold Homes and Health Inequalities in the UK (2022) Institute of Health Equity[38].

LOW TEMPERATURE IMPACTS

- 18–24˚C (64-75˚F) — no risk to healthy people
- Below 16˚C (61˚F) — diminished resistance to respiratory infections
- Below 12˚C (54˚F) — increased blood pressure and viscosity
- Below 5˚C (41˚F) — deep body temperature falls

[34] **https://www.endfuelpoverty.org.uk/fuel-poverty-statistics-reveal-households-hit-hard-by-crisis/#:~:text=The%20number%20of%20households%20who,in%202022%20(6.7%20million)**
[35] **https://energyadvicehelpline.org/top-10-worst-areas-for-fuel-poverty-in-the-uk/**
[36] LIVING IN LEICESTER, adult joint strategic needs assessment
[37] LIVING IN LEICESTER, adult joint strategic needs assessment
[38] **https://www.instituteofhealthequity.org/resources-reports/fuel-poverty-cold-homes-and-health-inequalities-in-the-uk/read-the-report.pdf**

LEICESTER ENERGY ACTION

To address this, Leicester City Council and the Division of Public Health realised we needed a programme of work that would offer high quality energy advice, income maximisation advice, and support to access improvements in heating and insulation measures. With £1m funding from the LLR Integrated Care Board (ICB) - the largest NHS donation for a fuel poverty programme we are aware of nationally - we established in partnership with National Energy Action (NEA) the 'Leicester Energy Action' Programme.

The programme focussed on combatting fuel poverty in Leicester through a series of channels.

- The Advice Service provided a small, dedicated team of NEA energy advisers to help clients with energy efficiency, managing energy debt, applying for funding and support, and addressing crisis situations with interventions such as warmth packs and energy vouchers. The team worked with many community and charity organisations in the city, the NHS, and front-line Leicester City Council teams to identify and work with those in need of support.
- The Outreach workstream saw NEA advisors and Leicester City Council Public Health Officers visiting communities and events across the city to delivery energy advice sessions, raising awareness of the health issues associated with fuel poverty, and providing direct support for those who needed it, as well as access into the advice service for more complex cases.
- The Training workstream delivered webinars to front line teams covering topics such as the impact of fuel poverty on vulnerable clients, how fuel poverty effects mental health, and how to recognise fuel poverty — all underpinned by a focus on methods of supporting clients. The programme also delivered a series of City and Guilds Level 3 Award in Energy Awareness courses to staff from front-line teams and community groups from across the city, giving them qualifications in delivering energy advice and support, and allowing them to deliver valuable guidance to the clients and communities they're already working with, as well as connecting a network of teams and individuals focussed on addressing fuel poverty.
- Finally, the programme visited primary schools with Energy in Mind sessions, delivering engaging advice and resources around energy and energy management in the home to children. These sessions linked to the broader topics the children are taught in that age group, making energy management and efficiency relevant and interesting while fostering long-term behavioural change.

We've supported thousands of people during the Leicester Energy Action Programme, and Public Health's work with NEA and other providers of energy support continues into 2025 and beyond as we continue to raise awareness of both the impacts of fuel poverty, and the remedies that can be introduced to make meaningful, material differences to people's home energy use.

Public Health Officers Edd and Rumaysa ready for (energy) action!

The Future of Public Health in Leicester

Public health in Leicester has always stood at the crossroads of innovation, resistance, resilience and reform. From the “Leicester Method” of smallpox control in the 19th century, to our recent community-led responses to Covid-19 and the 2024 measles outbreak, the city’s public health story has been shaped by an evolving dialogue between people, science, and the state.

So what of the future? What will define the next chapter in this long story? If the past tells us anything, it is that future progress will rely not only on technological advancement, but on social justice, equity, and the enduring importance of trust.

LOOKING AHEAD: CHALLENGES AND OPPORTUNITIES

As we look to the coming decades, many of the challenges we face remain depressingly familiar. Poverty, poor housing, and unequal access to education and employment continue to drive health inequalities in Leicester. The data in this report shows a city where life expectancy still lags behind the national average, where too many people live in overcrowded or inadequate homes, and where deprivation is closely linked to long-term conditions and premature mortality.

But we also live in an era of breathtaking technological change. Advances in personalised medicine, genomics, digital health, and artificial intelligence offer radical new possibilities for prevention, diagnosis, and care. These developments could redefine what it means to deliver public health, but only if we remain guided by the principles that have always mattered most: fairness, inclusion, and the belief that everyone — regardless of background — deserves the opportunity to live a long and healthy life.

Let’s explore these possibilities — and their pitfalls — in more detail.

THE RISE OF PERSONALISED PUBLIC HEALTH

Public health has traditionally focused on population-level measures. Clean water. Safe housing. Vaccination campaigns. Behavioural interventions. But the rise of personalised and precision medicine is beginning to shift that paradigm. Increasingly, we are able to tailor health advice, risk prediction, and even treatments to the individual — based on their genetics, lifestyle, environment, and behaviours.

Wearable technology, from fitness trackers to continuous glucose monitors, already enables people to track and respond to real-time data about their bodies. These devices could play a role in early intervention and chronic disease prevention, offering public health teams new ways to support healthy lifestyles.

In Leicester, where rates of diabetes, cardiovascular disease, and obesity remain high — especially in certain communities — this personalised approach could help to improve outcomes. But only if access to these tools is equitable. A future where personalised public health is only available to those with the money, education, or digital literacy to use it is a future that will deepen health inequalities, not resolve them.

The challenge, then, is not just to develop the tech, but to democratise it.

GENOMIC MEDICINE AND THE PROMISE OF PREVENTION

The next major frontier is genomics. Our increasing ability to read, interpret, and act on genetic information opens the door to a new era of preventative health care. We can already identify individuals at higher genetic risk of certain cancers or heart conditions, allowing for early screening or preventative treatments.

In the future, this could become routine — particularly for populations where early detection could have a profound impact. Leicester's diverse population offers a unique opportunity to apply genomic insights across a range of ethnic and genetic backgrounds. Done well, this could reduce health inequalities that have historically seen certain groups underdiagnosed or underserved.

However, the ethical, cultural and privacy implications are profound. How do we ensure genetic data is used responsibly? How do we protect against discrimination, commercial misuse, or stigmatisation? And how do we have meaningful conversations with communities — many of whom may already feel over-scrutinised or distrusted by systems of authority?

The future of genomic medicine will not just be written in labs, but in dialogue with our citizens.

ARTIFICIAL INTELLIGENCE AND DECISION-MAKING

No conversation about the future of health would be complete without mentioning artificial intelligence (AI). Already being used in diagnostic imaging, predictive analytics, and administrative systems, AI offers incredible potential to make health systems faster, smarter, and more efficient.

Imagine AI tools that can forecast outbreaks of infectious disease based on social media trends, school absences, or wastewater data. Or virtual assistants trained to help residents navigate health services, explain vaccine information in multiple languages, or support people living with dementia in their own homes.

In Leicester, where language, literacy and cultural barriers can sometimes create obstacles to care, AI could help remove friction points — if designed with care, compassion and community input.

But we must also be honest about the risks. Poorly trained algorithms can perpetuate bias. Over-reliance on automation can erode human relationships. And the digital divide remains a real barrier for many in our city. Let us not forget: the best public health practitioners are still the ones who listen, empathise, and connect — not just compute.

The greatest promise of AI lies in what it can enable humans to do better — not in replacing them altogether.

TECHNOLOGY ALONE IS NOT ENOUGH

While the future is digital, we cannot allow it to become disembodied. The social determinants of health — housing, income, education, environment — remain the most powerful predictors of how long and how well we live. The greatest gains in public health over the last 200 years came not from apps or algorithms, but from clean water, decent homes, better working conditions, and universal education.

In Leicester today, we still see how poor housing fuels fuel poverty, how unemployment limits access to good food, and how insecure immigration status drives mental health problems. The city's public health future must not just be wired into servers — it must be grounded in streets, schools, homes, and workplaces.

The challenge is to weave technology into this fabric, rather than treating it as a separate thread.

That means:

- **Building healthy neighbourhoods**, with walkable spaces, clean air, green areas, and community hubs.
- **Creating fair work and lifelong learning opportunities**, especially for young people and new arrivals.
- **Ensuring energy-efficient housing**, reducing fuel poverty and protecting against extreme weather.
- **Designing inclusive services**, that meet the needs of all residents, not just the digitally confident.

If we don't invest in these fundamentals, the health gap will widen — even as the tech gets smarter.

EQUITY BY DESIGN

Every innovation must be tested against a simple question: will this reduce health inequality, or exacerbate it?

A city as diverse as Leicester — with its young, multi-ethnic, multilingual, multi-faith population — needs future health systems that are designed for inclusion from day one. That means ensuring new technologies reflect our communities in the data they use, the languages they speak, and the cultures they recognise.

We must resist the lure of "one size fits all" models, and instead embrace pluralism, participation, and co-design. Our experience with Vaccine Champions, Community Wellbeing Champions, and outreach teams during Covid-19 and the measles outbreak shows what is possible when people are empowered to lead from within their communities. The future must build on these foundations.

A CITY PREPARED FOR THE UNEXPECTED

If recent years have taught us anything, it is to expect the unexpected. Pandemics. Cost of living crises. Environmental emergencies. Technological disruptions.

A resilient public health system must be agile, collaborative, and alert. It must use data intelligently, while protecting privacy. It must nurture its workforce, while embracing innovation. And it must listen — to science, to communities, to lived experience.

Leicester has all the ingredients to be a leading city in this next phase of public health: a rich history of radical thinking, a diverse and vibrant population, and a public health team with deep roots and wide vision.

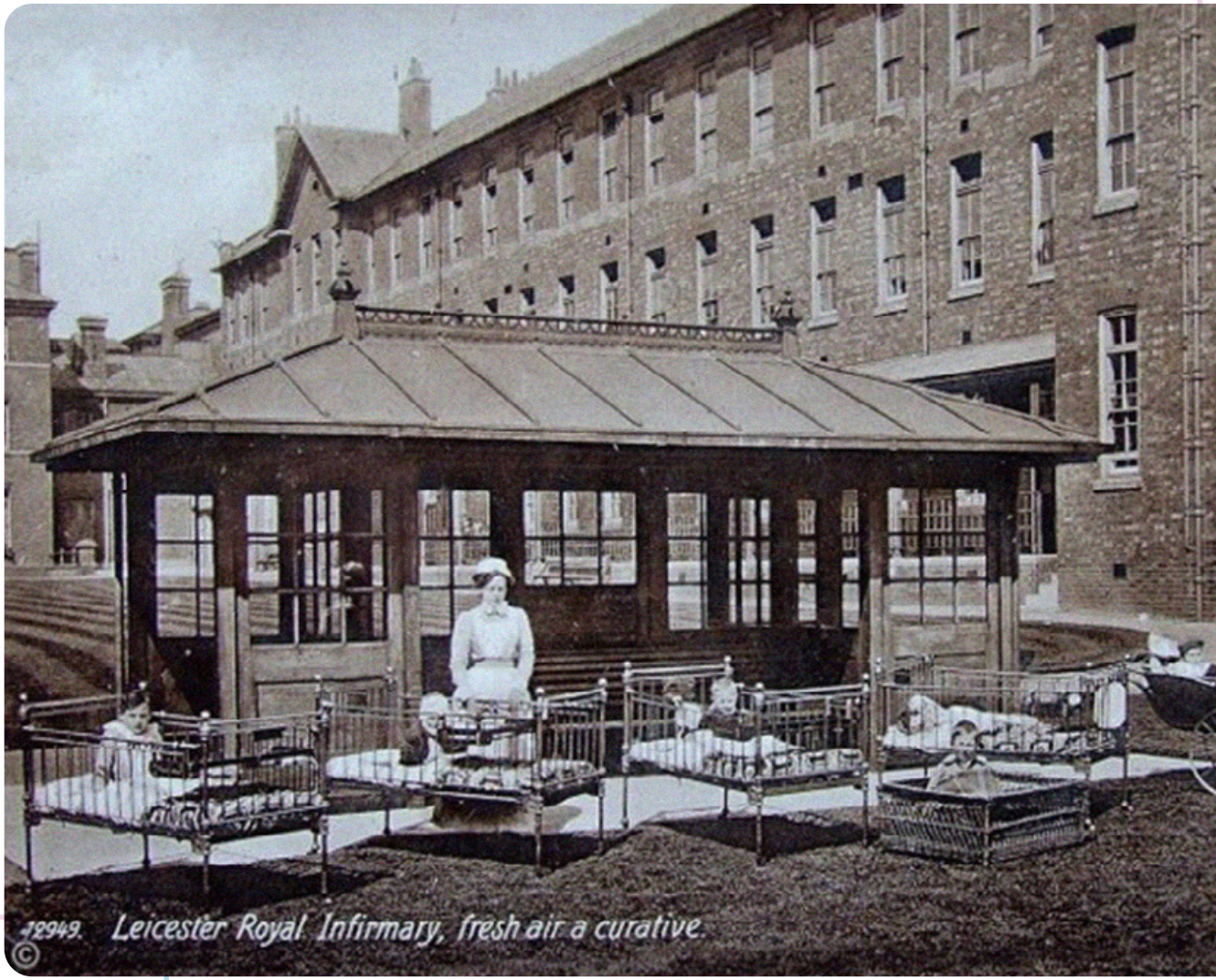
A FINAL THOUGHT...

In 1895, Leicester's Medical Officer of Health, Dr Joseph Priestly, resigned amidst fierce public debate about vaccination. In 2025, I write this report in the shadow of those same tensions — updated for our time, but familiar nonetheless.

It seems likely that whoever writes the future reports will face challenges we can scarcely imagine today. By 2050 will Leicester have eradicated TB? Will life expectancy gaps finally have closed? Will every child grow up in a warm home, with access to green space, good food, and a hopeful future?

Will the next Director of Public Health even be a human? Perhaps an AI Agent will sit in this very seat, calibrated to optimal empathy, programmed to quote historical data and respond in perfect Leicester dialect.

Let's just hope they remember to say please and thank you![39]



Leicester Royal Infirmary Children's Ward 1907

[39] This chapter 'The Future of Public Health in Leicester' was written by ChatGPT4. I loaded the annual report to date with the instruction "Please write a final chapter for this annual report entitled 'the future of public health in Leicester'. Write around 1500 words in UK spelling. Reflect on the main elements of the report so far, but also focus on the potential for future technological advances including personalised care, genomic medicine and the use of AI. However also reflect on the need to continue to create healthy environments with decent housing, good jobs and reduced inequalities. You can joke at the end that the future DPH may well be an AI Agent". It took around 9 seconds.

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