

# [To what extent were the changes in sanitation main](https://assignbuster.com/to-what-extent-were-the-changes-in-sanitation-main/)

ly responsible forBristol's improved healthiness between 1849 and 1870?
In 1869 the Times reported that Bristol was one of the healthiest towns in
the country. Yet just less than quarter of a century earlier that same
newspaper made a very different claim. Bristol was seen as the third most
unhealthy town in Britain. If we are to believe these reports it seems that
a transformation had come about in a relatively short period of time. This
study seeks to identify what improvements did take place in Bristol during
the 1850s and 1860s and the extent to which an improved sanitary system led
to increased life expectancy and a healthier environment.

There are many different characteristics of an unhealthy city. These
include a poor water supply, inadequate sewage systems that couldn't cope
with the population explosion of the 1820s in Bristol, a lack of street
lighting in the poorer districts of the city and unsanitary refuse
disposal. The quotations from the Times suggest that some of these factors
were drastically changed during the period 1849 and 1870 in particular
water supply, sewage disposal and refuse disposal.

In 1850 George Clarke investigated the condition of Bristol in his report
to the General Board of Health in London. His findings were shocking
portraying Bristol as having many problems connected with the sanitation of
the city. He reported that the mortality of the city was twenty-six deaths
per thousand. This mortality and the sickness that it represents caused the
city to lose money, as there was a loss of productive labour, medicines and
relief. Mr Clarke believed that the excessive mortality and sickness was to
be attributed to the bad condition of the houses that the labouring classes
(which form 54. 8% of the population) of Bristol lived in, the want of
drainage and water; and to the " filthy" state of most of the suburban
streets and lanes; also the want of scavenging arrangements in parts of the
old city and Clifton.

He found that parts of the old city and Clifton, parts of the districts of
St. Philip and Jacob were imperfectly lit and Bedminster had no apparent
lighting. He found that the gas rates in Bristol in comparison with other
places were exorbitantly high for a city with such a fortunate geographical
site.

He found that the powers of the local government were quite insufficient
for the sanitary wants of the city. The sewerage of the city was confined
almost entirely to the old parts of the city (in 1850) and Clifton.

Bedminster was without any sewers at all but the general flow was towards
the Frome or the Avon. The Dock Company laid the Broad Street sewer to
convey from St Philips and Jacobs sewers into the new cut alongside
Coronation road 1803-1809. They also laid another sewer in the Hotwell
road, opening onto the river.

The city burial-grounds in 1850 were utterly insufficient being almost full
and surrounded by houses. Burial grounds were raised above the surface of
the adjacent land, and the walls were invariably in bad repair. The corpses
already deposited will continue for several years to cause a discomfort to
the living. Such grounds it was suggested, should be lowered, with all
decency, the walls removed or rebuilt, a deep drain carried round the whole
space and the surface either flagged or laid down in turf and planted.

These burial grounds were gradually amended through citizens writing to the
local board of health, who then sent a surveyor to the site who reported on
the condition and what repairs needed to be done, then the repairs were
done.

Bristol Water Company (1846) met strong and expensive opposition from
parliament in 1846 during the execution of the works, but they must have
succeeded as in 1847 part of the water supply was being bought into
Bristol. There were three service reservoirs constructed for constant
distribution over the district and stores for fire. These were at
Bedminster Down for the supply of Bedminster and the south of the city,
secondly, on Whiteladies road to supply the lower parts of the city and
Durdham Down for the supply of the more elevated parts of Bristol such as
Redland, Clifton and Kingsdown. There were also three compensating
reservoirs built for flooding and storage for distribution over the
district. This (if people were prepared to pay the rates) supplied much
needed water to a large proportion of the city. The water was conveyed from
Barrow Gurney in 20-inch clean pipes to Whiteladies road, this water was
also filtered - this was a new phenomenon. However in George Clarke's
report of 1850 there are reports of spring water pumps looked identical to
river water suggesting that river water was simply conveyed into the city
instead of spring water. Although Bristol water company was providing safe
water, in context to a city that was full of dirty stagnant water this was
an achievement, however many parts would still have been rife with diseased
water. The change Bristol Water Company's formation had on the city of
Bristol was a direct effect on the sanitation as some people were receiving
a clean water supply.

Although many of the houses in and around Bristol were altogether without
sewers, there was considerable storage of night soil in the ditches that
intersect the low lands. Outside of the City the contents of these ditches
were pumped onto farm land to use as manure. However when not dealt with
these ditches became horrendous producing a widespread " nuisance". Bristol
lies in a basin, drained by the Avon and smaller rivers and streams that
feed it. The Avon has the second largest tidal range in the whole world.

The sewage problem became acute in 1809, when the floating harbour was
constructed. Before that, the Avon and the Frome were both tidal right
through the city, daily ebb and flow were enough to carry away most of the
waste produced by a small population. The construction of the floating
harbour in 1809 made the centre of Bristol into a cesspool. The stagnant
waters of the floating harbour rapidly filled up with sewage and conditions
became harsh. The streets were no better than the rivers, as sewer building
had not kept pace with the population. There weren't enough of them and
many were badly constructed. Some houses were on the receiving end of
sewers, which ran backwards. Even when some sewers were put in people did
not pay for it. Sir Henry de la Buch conducted a survey in 1845 and found
the city " nauseating". A raging cholera epidemic was the last straw, 1848
Council at last determined to clean the city up and formed a Sanitary
Committee, in direct response to the 1848 Public Health Act, the Local
Board of Health. This was one of the most important developments in
improving Bristol's health. It took responsibility for executing
legislation passed in the recent act; James Harris was appointed clerk and
Charles Paul became treasurer. The minute book clearly shows how grievances
were raised and the remedies that were put in place. These minutes are
official and at the beginning of each meeting the minutes from the last
meeting were read and agreed on showing that the source is both accurate
and reliable.

Letters of complaint were sent to the Board from members of the general
public to be immediately addressed by discussion and a surveyor was then
sent to make an official report into the grievances. The report made by the
surveyor was then discussed at the next meeting and resolved by organising
repairs and direct action. Organising the highways and corresponding with
highway surveyors to rebuild or just build roads in accordance with the
1848 public health act was one of the first tasks addressed by the Board.

All proposed building plans had to be approved by the Board who sent a
surveyor to investigate the drainage and check plans making sure that they
met the standards of the 1848 public health act. Also people who wished to
modify and carry out improvements on their property, e. g. building a cellar
had to apply to the board of health. This is how architecture, poor
sewerage and refuse disposal, unsafe flagging and lighting and many other
grievances were addressed.

The board had to organise the lighting of streets and footpaths, and they
were also the mediator between the person proposing to build and those who
have objections with the building. A finance committee was set up to deal
with the financing of the local board of health. They investigated matters
of levying rates and corresponding with London about the legality of
collecting money.

In and around the city there were numerous and very large deposits of
ashes, sweepings from the limestone roads, bones, rags and similar refuse,
all of undeniable value to the meadows of Somerset and Gloucester, but
which no one had either the time or energy or capital required to make
arrangements for the removal via canal or train. The Sanitary Committee
made this a priority setting up a transport system from the city to the
countryside surrounding the city. The manure was collected from cesspits
regularly and transported train to supply the meadows with greatly needed
fertiliser. This refuse phenomenon greatly improved the cleanliness of the
streets of Bristol and also there was less leakage from the cesspits into
the water supply.

The Bristol Sanitary committee suggested that at long last water rates
should be levied and was answered in the local press in August 1850 by an
outraged citizen: " Gentlemen! Beware your pockets!" There was another
cholera epidemic in 1854. It was only years later that the general The
General Board of Health issued a statement of the duties of " officers of
health". These included " giving instructions and directions for the
removal or prevention of causes of disease common to several persons, and
also for the prevention or removal of causes of disease to individuals,
where those causes come within the province of local administration under
the Public Health Act". The officers were required to report quarterly to
the General Board of Health on the nature and amount of sickness and death
which had prevailed in their areas during the quarter, and annually to
provide more details about the nature, location and rates of sickness and
death, and possible future action for preventing identified causes. The
consensus believed at last what Dr William Budd, physician at St Peter's
Hospital from 1842 had been saying since his appointment that the disease
did not arise from poisons in the air but from a living organism carried
into the body namely from water into the body. However it was not
compulsory for towns to have a Medical Officer of Health until 1875 so
Bristol did not appoint a Medical Officer of Health until 1861. " Davies" an
ex-police officer, he disinfected reported areas of disease and dirt, kept
reports of deaths and births for statistical purposes and generally focused
on improving the general health of the town. He should have been appointed
earlier for a greater effect.

The compulsory vaccination act of 1853 introduced a mandatory vaccination
for all infants within four months of birth against smallpox, but contained
no powers of enforcement. Responsibility was with the poor law guardians.

This vaccine would have decreased the number of people with small pox and
therefore increased the general healthiness of a city such as Bristol. As a
consequence to the production of this vaccination, many vaccinations
started to be developed. Again findings contributing to increased
healthiness of the masses. Medical developments were international, in
France Louis Pasteur's work for French wine growers on fermentation led to
the 'germ theory of disease' - that micro-organisms in the atmosphere were
responsible for souring wine also making people ill. Robert Koch devised
techniques needed for isolation and identification of individual bacteria.

As more and more bacteria were identified affective treatment and cures
could be devised, however Robert Koch's findings were not developed and
used before 1870.

Medical ignorance contributed to a high death rate particularly among young
children, infant diarrhoea was common. Doctors could only relieve symptoms
of common childhood diseases such as whooping cough, measles, scarlet fever
and diphtheria. Compulsory education ensured infectious diseases became
wider spread.

William Farr was a doctor who worked for the Registrar General of Births,
marriages and Deaths from 1839 to 1879. during the 1840s he brought in a
system of accurate recording of the causes of all deaths in each district.

A death certificate had to be signed by a qualified doctor, giving the
cause. This meant that by the 1850s there were plenty of accurate
statistics that could be used to show that disease was far worse where
sewerage and water systems were bad.

Another breakthrough came with the cholera epidemic of 1854. John Snow had
experienced previous outbreaks in 1832 and 1848, and was convinced that it
was a water-borne disease. This time he provided conclusive proof by
mapping out the cases in Soho, central London, implicating a single,
contaminated well. The epidemic subsided soon after the pump's handle was
removed. Snow also analysed cholera's incidence in water that was bought
from different suppliers, demonstrating that households buying from
companies drawing water from the Thames downstream - after many sewers had
flowed in - suffered a death rate 14 times greater than those buying water
from companies drawing upstream. Following on from this research, he
recommended boiling water before use.

Finally people began to take notice of the research that was taking place
and began to believe that cholera was transported in water and that the key
to avoiding cholera was clean water, so people began to pay the water rates
and receive what clean water was available to them and in doing so
increasing the quality of their life and health.

In 1866 parliament passed an act that ordered all local councils to appoint
sanitary inspectors to inspect the sanitary condition of the houses and
towns. This again increased awareness of sanitary measures. In 1865 Joseph
Lister established anti-sceptic surgery that would have decreased the risk
of infection during operation, this will have also contributed to a
decrease in death rates and therefore reflectively the general healthiness
of a city.

In 1853-56 the Crimean War exposed weaknesses in the British army's supply
and hospital systems. The war took lives indicating on statistics that
there was poor health and many soldiers could not be treated effectively
enough to overcome their injuries after the war. In 1860 the Food and
Drugs Act restricted adulteration of food, which made it harder for
merchants to con people into buying impure food, discouraging weight fixing
that greatly effected the health of people in towns. In 1869 the Contagious
Diseases Act required medical examination of suspected prostitutes in ten
towns near army bases, with forced incarceration and treatment if infected
with syphilis. This reduced the spreading of sexually transmitted diseases
through prostitution that was provided to the army causing an increased
healthiness in the armed forces.

The formation of the sanitary committee ensured that citizens of Bristol
could address their grievances with the government that had the powers to
amend problems. The changes in sanitation that occurred greatly improved
Bristol's healthiness however medical developments and the discovery that
the cholera disease travelled in water led to a reformation of the water
supply and sewerage systems which increased healthiness from 500 deaths per
million children to 400 deaths per million people. The appointment of C.

Davies in 1861, ensured closer inspection of healthiness from 1861 onwards
in Bristol, however an earlier appointment would have helped the health
problem earlier on. The movement of stinking refuse from inner city to the
countryside also helped the healthiness of Bristol a great deal as there
was less diseased refuse lying about. The arrival of clean water also
helped the healthiness of Bristol extensively as people were no longer
drinking, washing and cooking in the water that they emptied their sewerage
into. More sparsely populated burial grounds also helped to decrease health
and disease problems along with more sanitary burial practices.