

# [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.