You are in the Health Care Business: Have Been, Always Will Be

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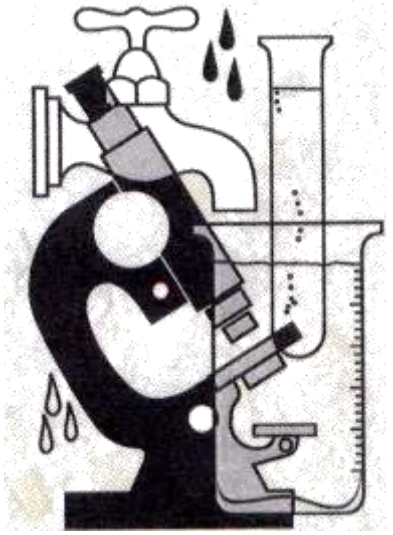
Wyndham Indianapolis West



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You are in the Health Care Business: Have Been, Always Will Be

A look at the value of water and wastewater treatment in the protection of public health.

Ever since the word "environment" came into the picture as it relates to drinking water and wastewater treatment, the industry has been removed from the health care equation. Even though most people appreciate the environment, their health is number one. Water and wastewater personnel need to stress the value of their operations in protecting lives.

State of Ohio

Typhoid Death Rate	
1910	28 deaths/100,000 people
1960	0.1 deaths/100,000 people

Typhoid Outbreaks

Community	Year	Number ill	Deaths
Cleveland	1903	3,444	472
Cincinnati	1906	1,940	230
Salem	1920	800	27

Cincinnati

Typhoid Death Rate	
1885	140 deaths/100,000 people
1908	2 deaths/100,000 people
Water purification plant went on line in 1907	

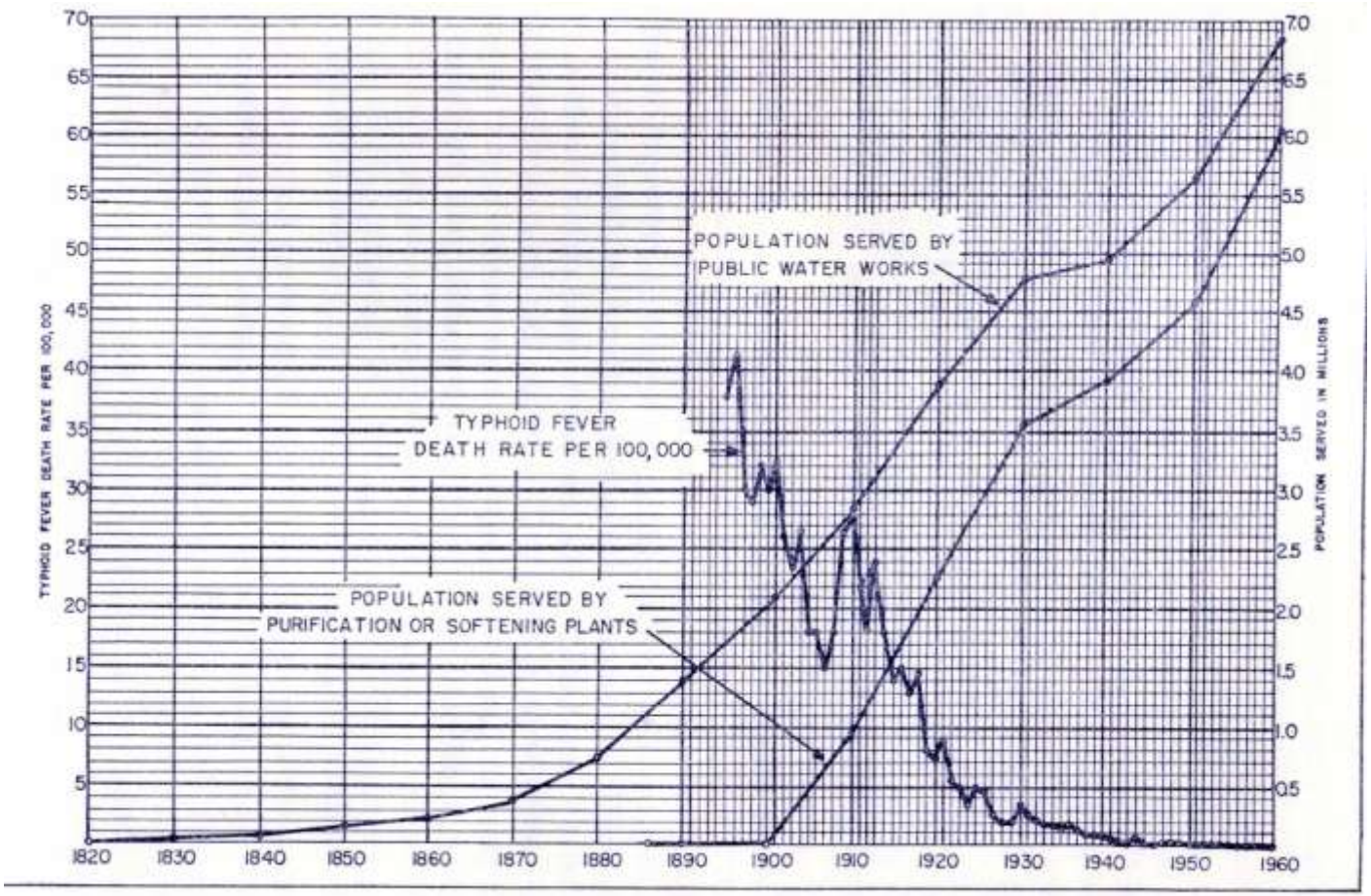
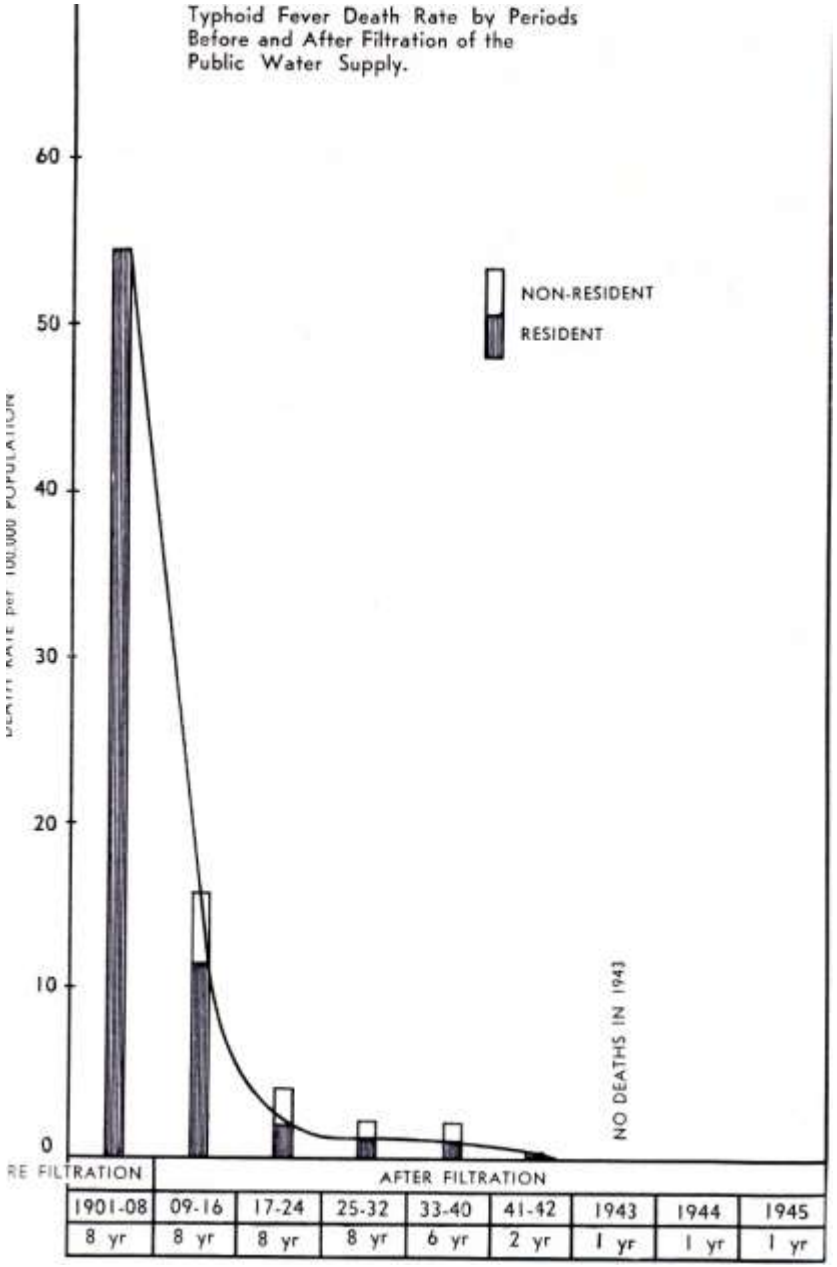


CHART 3—PUBLIC WATER SUPPLIES AND TYPHOID FEVER REDUCTION IN OHIO


Typhoid Fever Death Rate by Periods
Before and After Filtration of the
Public Water Supply.
60
50
40
30
20
10
0
NON-RESIDENT
RESIDENT
NO DEATHS IN 1943
RE FILTRATION
AFTER FILTRATION
1901-08
8 yr
09-16
8 yr
17-24
8 yr
25-32
8 yr
33-40
6 yr
41-42
2 yr
1943
1 yr
1944
1 yr
1945
1 yr

FINDINGS OF INVESTIGATION OF THE RIVERS OF OHIO

As Sources of Public Water Supplies, 1899

Crestline

- "Stink Creek" as it goes through town is nothing but an open sewer. At the time of inspection, July 19, it was dry above town and supplied entirely by sewage, and this principally from the main hotel. It is a very foul smelling, dirty ditch covered with black scum and all the pools full of filthy sewage mud.

Bucyrus

- At Bucyrus we find an exceedingly bad state of affairs. The river in the Village, and for some distance below, during dry weather is a foul, stinking stream; an unbearable nuisance, outraging many people compelled to live within it s disease-breeding influence.

Upper Sandusky

- At Upper Sandusky the river, which has not recovered from its gross pollution at Bucyrus, is again used to receive sewage. While the conditions here are not nearly so bad as Bucyrus, any increase in the amount of sewage of Upper Sandusky will create a serious nuisance.

Fremont

- Fremont looks to the Sandusky River for a part of its water supply. Being about 23 miles below Tiffin, a City of 14,000 people, and discharging all its sewage into this river, the supply cannot be regarded as a safe one.

Sandusky

- The conditions threatening the water supply of Sandusky deserve serious consideration. The City, of over 20,000 people, is built along Sandusky Bay. The bay receives whatever filth remains in the Sandusky River, poured into it by the cities along its course. In addition, it receives all of the sewage of Sandusky.

Findlay

- Perhaps the worst place to be found is at Findlay. The river flow is much too small to receive the sewage of the City and sewage disposal works should be constructed without delay. The water supply of Findlay is taken from the Blanchard River with some attempt at purification. The supply is not of very good quality and better methods of purification are necessary.

Summary of 1899 Report

- To briefly sum up the results of the year's investigation, they show conclusively that both the Sandusky and Maumee rivers are already polluted at many places beyond the limit of safety, and that in no place do their waters afford a perfectly safe domestic supply.


9023. Sprays in operation at the Disposal Plant,
Columbus, Ohio.


Columbus Sewage Purification Works, Columbus, O.

Development of Sewage Treatment

Fred Waring, Ohio Department of Health 1961

- It is only natural that the progress attained in treatment of sewage paralleled that of the treatment of water. The realization of the fact that water-borne disease had its origin in the discharge of untreated sewage from municipalities into the surface lakes and streams that were being used as the sources of public water supplies served as a very definite incentive in the construction of municipal sewage treatment works.

- Before filtration, before disinfection, before sewage treatment, before the proper handling of the disposal of solids states like Indiana experienced outbreaks of typhoid, cholera and dysentery

- Dr. John Hurty, pioneer in the field of public health, was relentless in publicizing that improper sewage disposal was a leading cause of the spread of typhoid fever and other water borne diseases.

- In 1909, Indiana placed the authority over wastewater treatment operations in the hands of the State Board of Health. That Board could issue orders following the holding of a hearing.

- The first Indiana sewage treatment plant of record was a chemical precipitation plant built in 1898 at the Southern Indiana Hospital near Evansville.

- The first municipal sewage treatment plants in Indiana were built in Bedford and Crown Point in 1903. These were septic tanks.

- It wasn't until 1914 that the City of Indianapolis began operating a pilot plant that serious consideration to treating the City's wastewater was given.

- One of the biggest accomplishments in the reduction of pollution of Indiana streams occurred when the Indiana Legislature in 1917 enacted the law permitting the establishment of Sanitary Districts in cities of First Class.

Indiana Municipal Wastewater Treatment Plants

City/Town	Year Built
Crown Point	1903
Bedford	1903
Darlington	1908
Butler	1908
Waterloo	1913
Chesterton	1914
Brownsburg	No Record
Sullivan	1921
Brazil	1922
Huntingburg	1922
Mooresville	1924
Indianapolis	1924

City/Town	Year Built
Jasonville	1925
Petersburg	1925
Bloomfield	1926
Cambridge City	1927
Winona Lake	1927
Rockville	1928
Osgood	1928
Leavenworth	1928
Beech Grove	1928
Frankfort	1929
Milan	1929

Indiana Municipal Wastewater Treatment Plants

City/Town	Year Built
Winchester	1932
Angola	1934
Bloomington	1934
Greencastle	1934
Lebanon	1934
North Vernon	1934
Union City	1934
Greenfield	1935
Huntington	1935
Michigan City	1935

City/Town	Year Built
Bluffton	1936
Evansville	1936
Franklin	1936
Goshen	1936
Greensburg	1936
Hagerstown	1936
LaPorte	1936
Tipton	1936
Lawrenceburg	1937

Source: *History of the Indiana Water Pollution Control Association 1937-1987*

- So it was then, in Indiana, the operator of a wastewater plant was under the control of the State Board of Health.

- Typhoid, cholera and dysentery did not disappear from the Indiana scene until adequate wastewater treatment was installed along with disinfection of the drinking water supply.

- You are in the health care business, have been, always will be. In fact, the development of the x-ray, penicillin and polio vaccine, wonders that they are, pale in comparison to what safe water has meant to public health.

- A slip up in the treatment plant operations causing a failure in the system can be catastrophic.

Milwaukee, Wisconsin

- Largest water-borne disease outbreak in history – March-April 1993
  - Turbidity levels well above normal
  - Outbreak caused by cryptosporidium
    - 403,000 residents became ill
    - 100 people died
  - Elderly and immunocompromised
  - Cost associated with the outbreak - $96.2 million
    - $31.7 million in medical costs
    - $64.5 million in productivity losses

Walkerton, Ontario, Canada

- Town population 4,800 – May 2000
  - 2,300 people became ill
  - 7 people died
- Outbreak caused by E-coli
  - Contamination of shallow well
  - Cattle manure following a heavy spring rain
  - Low chlorine dose at the well
  - Monitoring logs were falsified
- Operators had no training even though certified
- Chlorine was kept low due to taste complaints

- Operators of water and wastewater treatment facilities need to be ever vigilant in operating their treatment plants. There is no room for error. You protect the public health every day. You save lives.