

DIARRHOEA



CSIR researchers appeal for monitoring of diarrhoea in adults

Diarrhoea mostly results from contaminated food and water sources.

The most severe threat posed by diarrhoea is dehydration.

Diarrhoea is a symptom of infections caused by various bacterial, viral and parasitic organisms. It mostly spreads through faeces-contaminated water. Infection is more common when there is a shortage of clean water for drinking, cooking and cleaning.

Worldwide, around 1 billion people lack access to improved water and 2.5 billion have no access to basic sanitation.

Source: The World Health Organization

Diarrhoea now the **THIRD-BIGGEST KILLER** in South Africa

INCREASING NUMBERS OF CHILDREN, the elderly and even adults, are dying from diarrhoea in South Africa, making it the third-leading cause of death in the country.

A recent CSIR study has reported a steady increase in diarrhoeal death statistics in South Africa over the last 12 years – with a significant increase in diarrhoea-related deaths for adults aged between 45 and 64.

Diarrhoea as underlying natural cause of death for all ages has increased from being the 10th leading cause in 1998 to become the third-leading underlying natural cause of death for two consecutive years in 2004 and 2005.

While the highest death rates were recorded for the vulnerable age groups (children under five and the elderly), the researchers were surprised to note an increase in adult deaths due to diarrhoea for each province. The trend was particularly visible for the age groups 45 to 55 and 55 to 64.

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According to CSIR researchers Maronel Steyn and Bettina Genthe, diarrhoea statistics are an important indicator of the health of a community. "Diarrhoea incidence for children under the age of five is noted at hospitals and clinics and is available on a national database. However, currently almost no attention is given to adult diarrhoea," they argue in a paper presented at the International Water Association's Health-Related Water Microbiology Conference this year.

Despite major efforts and impressive improvements in recent years, 2.11 million South Africans still lack access to any water infrastructure, with more than 6 million not enjoying access to private water supplies. According to the Department of Water and Environmental Affairs more than 12 million South Africans still lack access to any form of sanitation.

The researchers used data from the Department of Health's National Information System (1997-2003) and National Population Survey results from Statistics South Africa (2005) to assess the current trends in diarrhoeal death and disease in the country. When this data were compared with the factors contributing to diarrhoeal disease it indicated an interesting correlation between the number of people with HIV/AIDS and people not having access to private water supply.

According to Steyn and Genthe, people who have to collect water from outside the family unit, from a communal tap for example, are more at risk of contamination than if they had access to private water within the family unit (even though that water could also be contaminated). Therefore access to private water within the family unit is critically important.

"Access to piped water does not indicate any health benefits. If people have to collect water from a communal tap there is a chance of contamination from outside the family unit, whereas if water is contaminated in your own yard it will come from within the family unit and not cause additional adverse health effects. In other words, all germs are not created equal," explains Genthe.



Maronel Steyn

ALL GERMS ARE NOT CREATED EQUAL

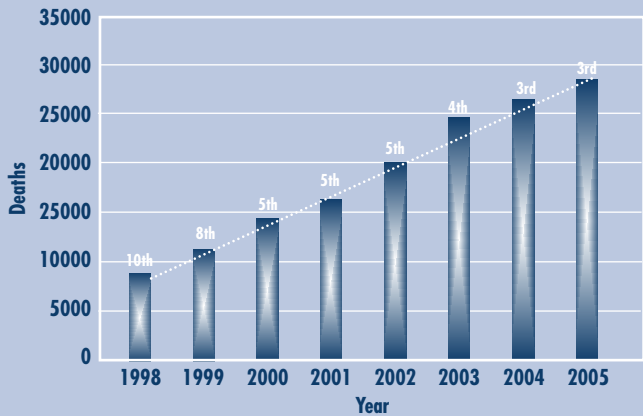
According to an earlier international study in the journal *Water Resources Research*, family members are likely to develop some level of immunity to those germs commonly encountered in their own household environment. In addition, even if one or two individuals in the household are HIV-positive or in any other way immuno-compromised, they are more likely to be adversely affected by germs transmitted by other individuals than by the contaminated water within that household. People are put at risk the moment new germs are introduced to a household either via an outside water source, or via person-to-person contact or food contamination. Therefore the hypothesis that "all germs are not created equal".

Van Derslice, J., and J. Briscoe (1993), All Coliforms Are Not Created Equal: A Comparison of the Effects of Water Source and in-House Water Contamination on Infantile Diarrheal Disease, *Water Resour. Res.*, 29(7), 1983-1995.



Bettina Genthe

DIARRHOEAL DEATH RATES FOR ALL AGES IN SOUTH AFRICA



Diarrhoeal death rates for percentage of households with access to private water supply according to province



KwaZulu-Natal, Limpopo and the Eastern Cape have the lowest percentage of access to private water supplies in the country – this puts them most at risk for microbiological contamination of treated water supplies and associated diarrhoeal disease burden.

- No access to private water supply (eg uses communal taps, rivers, springs)
- Access to private water supply (eg water in yard or house)

Merely providing people with access to good-quality water isn't enough. People with compromised immune systems can easily get infections and develop diarrhoea. It is important that these people should be provided with private access to good water supplies, either in their yards or in their homes."

According to Steyn and Genthe a change in policy – for example reporting on diarrhoea for all age groups – could assist in determining the extent of diarrhoea in the total population to allow for proper planning to prevent unnecessary deaths from diarrhoea. – Wiida Basson

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