

## To properly target drowning prevention resources, you need local data: Evaluate drowning death data at a local level to understand and plan more appropriately

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Brazilian lifesaving is the manager of drowning prevention efforts at the state level under the Fire Department umbrella in almost 95% of the country. In 2007 (1) we established the risk of death by drowning for each Brazilian States (26 states and one federal district), but we did not take into consideration factors such as seasonality, disasters and especially the fact that rates were generalized for an entire state, instead of counties within each state. This approach yielded data that failed to show how some local lifeguard services with excellent drowning prevention results could be mixed with other areas of the state with poor results, but were combined as a single State death rate. Our objective is to stratify the risk of death by drowning in all Brazilian counties and to make this information useful and available for all counties managers.

### Methods

All ICD W65-74 (unintentional drowning deaths), from January 2003 to December 2007, in Brazilian counties were considered using death certificates based on Health Ministry-DATASUS- <[www.datasus.gov.br](http://www.datasus.gov.br)>. A time frame of five years was used to reduce bias by disasters and seasonal events. For each county we rated the population and the number of deaths by drowning to stratify the risk of death per 100,000 inhabitants. From those we selected the hundred counties with the highest risk for drowning. Using each county's name, we determined if they have ocean coastline or not by using Google maps.

### Results

There were 5,563 counties around the country with an average population of 183 million people and 6,144 deaths by drowning. The average risk of death by drowning was 3.6/100,000 inhabitants and the top risk was 98/100,000. From the one hundred top counties at risk, 89% had no ocean coastline and represented 4.3% of the total. Table 1 shows all the 5,563 counties with an absolute and relative (death/100,000) numbers of death by decreasing order.

### Discussion

Any action or prevention campaign in the lifesaving field must be based on strong scientific evidence and good quality information to avoid wasting resources that are already scarce. This includes identifying where the highest risk areas around the country are located. Since the smallest political jurisdiction in our country is a county, this research tabulates each county separately, taking into consideration the population and the numbers of deaths, resulting in our gold standard tool to better identify the location and type of problem. Although this approach does not consider the transient population (tourism), it gives us the opportunity to show to Mayors their county's risk for drowning death, as compared to others, and helps local lifesaving managers target necessary actions.

### Bibliographical references

1. Szpilman D, Goulart PM, Mocellin O, Silva A, Guaiano OP, Barros M, Alves AS, Morato M, Cerqueira J, Vilela JJM, Smicelato CE, Araújo RT, Pedroso JP, Krüger L, Barros E, Cerqueira A, Sales RC, Silva NS; International Lifesaving Federation (ILS) – How, Who and What were the Impact on Brazil? World Water Safety, Matosinhos – Portugal 2007, Book of Abstracts, ISBN: 978-989-95519-0-9, pp. 214–5.

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