Background

With near record accumulations of snow and wet conditions in the fall and winter of 2008, the risk for local and regional flooding in North Dakota was eminent. This threat prompted the North Dakota Department of Health to open their Department of Operations Center (DOC). Tasked with providing infrastructure and supplies to North Dakota medical facilities and information on the health and mental state of North Dakotans, the DOC assigned the Division of Disease Control the task of performing surveillance for injuries and illnesses sustained during the flood preparation effort, the flood itself and the cleanup efforts.

Methods

Without time to develop a robust surveillance tool, the North Dakota Department of Health-Division of Disease Control had to be innovative in using existing methods of communication and data transmission to accurately and quickly receive information for timely situational awareness. The Division of Disease Control came up with a method of gathering data from an existing data stream without placing increased burden on the responding facilities. This data source allowed these facilities to provide illness and injury details on patients seen with events related to flooding. Of the 41 North Dakota Emergency Departments (ED), eight were existing providers of the state syndromic surveillance data system. This meant that data pertaining to patient-level chief complaint data was being pulled from ED registration data daily and sent within 24 hours of patient visit to the state syndromic database. Disease Control instructed ED admissions personnel to ask any patient seeking care at the ED whether their chief complaint was due to an event relating to flood waters, flood preparation or flood cleanup and subsequently indicate a keyword of FLOOD in the patient’s chief complaint. By doing this individual events associated with flood response could be quantified. Patients who were for some reason not able to give their own chief complaint were assessed by the physician and categorized into flood related or not.

Results

The North Dakota Department of Health was able to capture 143 flood-related events that were categorized into similar injury types. Some categories included, for example, strains and sprains, motor vehicle accidents (MVA) and stress. The majority of events (80) were related to musculoskeletal strain and pain, 6 lacerations, 5 carbon monoxide poisonings and the remainder in various other categories (MVA accidents, anxiety, falls, etc.).

Conclusion

The North Dakota Department of Health was able to quickly ascertain information about the state of citizens dealing with flood preparation and other flood-related events using existing data streams. This data was used to inform decision-makers about the health and welfare of North Dakota citizens during a statewide emergency.

Future Use

This system has proved to be valuable in collecting information real time during emergency situations. To date, this process was used during the 2010 Red River Flood and currently during the ongoing 2011 Bismarck/Mandan and Minot Flood Emergency.

Sources


Photo 1 – Greg Ness, 2009

Photo 2 – American Red Cross, 2009

Acknowledgments

North Dakota Emergency Departments participating in ND Syndromic Surveillance Program