



HEALTH AND HAZARDOUS SUBSTANCES  
**REGISTRY  
NEWSLETTER**  
ILLINOIS DEPARTMENT OF PUBLIC HEALTH

Summer 2001

**Illinois State Cancer Registry Receives Gold Standard Certification for the Third Year**

Sixty-seven population based central cancer registries submitted their 1998 data for evaluation and confidential feedback as part of the North American Association of Central Cancer Registries (NAACCR) certification process. One of the primary reasons for the certification process is to establish objective criteria for recognizing population based cancer registries that have achieved excellence in the areas of completeness, quality and timeliness. Among those submitting data for evaluation were a substantial number of Canadian provinces, Surveillance, Epidemiology, and End Results (SEER) registries and Centers for Disease Control (CDC) National Program of Cancer Registries (NPCR) states. ISCR has been notified that it will be recognized at the gold level at this year's annual NAACCR meeting.

A non-confidential Illinois data file containing records from the 1998 diagnosis year was submitted to NAACCR to be included in the certification process. Completeness of case ascertainment for the 1998 diagnosis year was measured at 100 percent; missing information for three key variables (age at diagnosis, sex and state/province and county) were 0.0 percent; 100 percent of the submitted records passed the NAACCR EDITS metafile; the death certificate only rate was 1.7 percent and only three records per 1,000 were identified as duplicates. The measure of missing information for a fourth variable, race, was within the range set for the gold standard (<3 percent) but has risen steadily over the last three years following the national trend. At present 2.3 percent of the records submitted do not have a valid race code recorded. The 375 facilities reporting to ISCR share in these accomplishments and deserve thanks and appreciation for a job well done!

**Evaluation of Geocoding Cancer Registry Data**

ISCR recently completed the quality control report, "Geocoding Results for the Illinois State Cancer Registry." This study assessed the geocoding results of incidence reports for Illinois residents with a diagnosis date from 1986 through 2000 (n=743,029). Overall, the geocoding results were excellent, with 99 percent accuracy and completeness for county code, ZIP code, and census tract codes. Cases are also assigned a latitude/longitude code that will be useful for potential Geographic Information System (GIS) studies. Overall, 85 percent of the cases were coded with an address level latitude/longitude; however this varied greatly by county.

The remaining 15 percent of the cases could not be coded to an address level. About half of these were post office (PO) box or rural route (RR) codes. With the advent of 911 enhanced emergency systems, all addresses, including rural routes, are assigned a physical street address. Reporting hospitals can help to increase the address level coding by obtained these physical addresses, if at all possible. Problems with the remaining addresses include misspelled street names, out of range street numbers, and streets names that are not within the city as reported.

If an address looks incorrect, one can verify the address by accessing the U.S. Postal Service Web site [www.usps.com](http://www.usps.com) and clicking on the "Find ZIP codes" button. This Web site will also verify the street address and city, standardize the address and provide the nine-digit ZIP code. When in doubt, refer to the *ISCR Data Acquisition Manual* for coding instructions of the street address, city, ZIP and county data items.

## Work-related Farming Fatalities

Although there have always been farming fatalities, the mechanization of the farm has contributed to an increase in farm-related deaths. Farm equipment and implement manufacturers have recognized the need for safer machinery and have placed into service many safety features such as power take off (PTO) shields, automatic transmission lockouts upon startup (neutral start), and rollover protection structures (ROPS). These features have saved lives and will continue to save lives as long as individuals are vigilant and pay attention to safety precautions. If the farm operator lets his or her guard down for a moment because of fatigue or haste, tragedy can result.

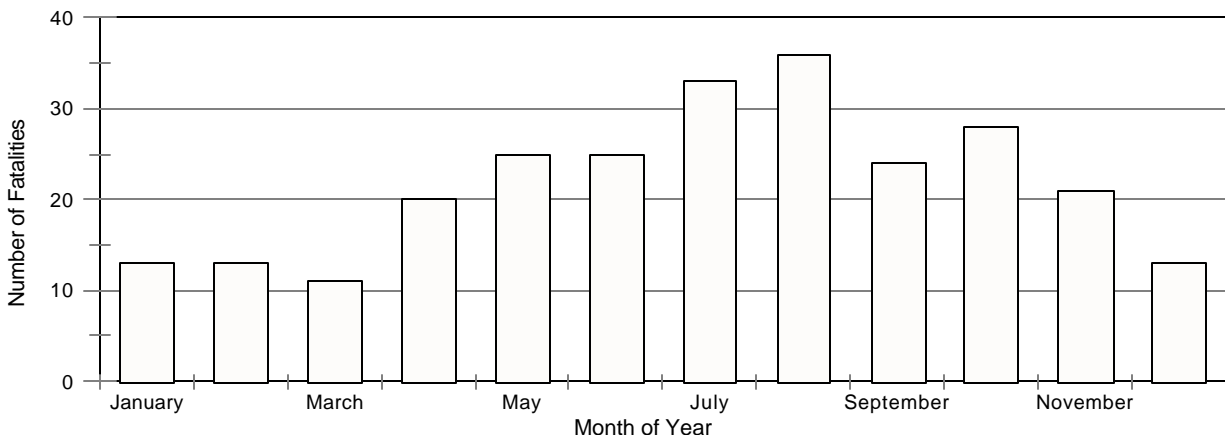
Between 1992 and 1999, Illinois farm workers had a total of 268 work-related deaths, resulting in an annual fatality incidence rate of 45.8 fatalities per 100,000 farm operators (with the number of farm operators assumed to be at the 1997 level). Based on national numbers for this time period, the state should have expected 251 fatalities. Although Illinois experienced a higher number of fatalities, the difference was not statistically significant (mortality ratio = 1.07; 95% confidence intervals = 0.94, 1.21).

The summer months, which typically are the busiest time for farm operations, corresponded to higher occurrence of fatalities (Chart 1) than the rest of the year. Farmer activity at the time of death shows that 66 percent of the fatal incidents were related to operating, riding, or driving vehicles (Chart 2). Forty-five percent of the 268 farm fatalities were attributable to farm transportation with the most frequent events being non-highway vehicular accidents (Chart 3). The vehicles involved in these fatal incidents included cars, trucks, all terrain vehicles, and tractors. Tractor rollovers caused 22 percent of the farming deaths (Chart 4) and half of these were the result of operating on a hillside while mowing, brush clearing, or conducting other tasks.

Can anything be done to prevent these deaths? The answer is yes. Farmers and farm workers should study manufacturers' operation manuals for all equipment, be familiar with the tipping limits of the tractors, and be mindful of safety precautions before starting a task.

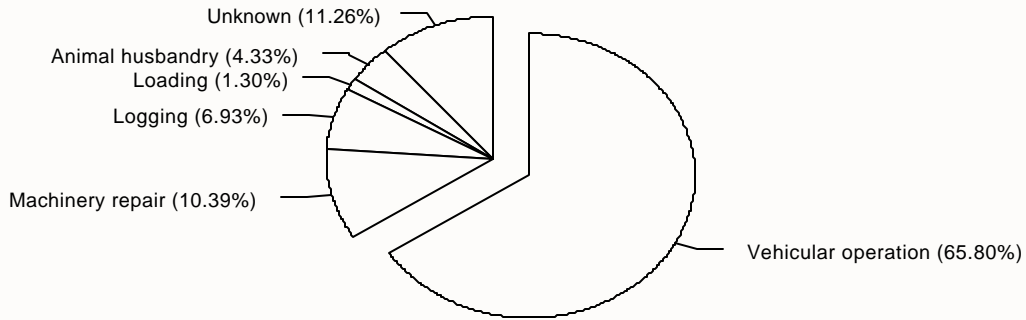
Many older tractors are not equipped with the latest safety devices such as ROPS or seatbelts. Equipping older machines with these devices may be costly considering the value of the tractor, but they can save a person's life. Many tractor manufacturers have retrofit kits available for most models going back to the 1960s; some have kits for earlier versions. If a retrofit kit is placed on the tractor, then the operator has to use the seat belt because ROPS without seatbelt use does not prevent fatalities.

**Chart 1. Farm Fatalities in Illinois  
1992-1999, by Month of Year**



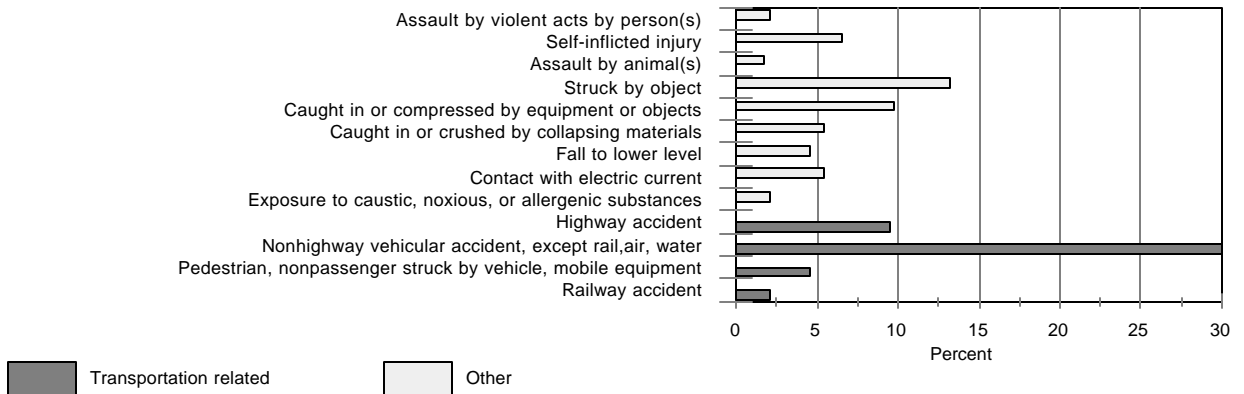
SOURCE: Illinois Department of Public Health, Division of Epidemiologic Studies, on behalf of the U. S. Bureau of Labor Statistics, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, June 2001.

## Chart 2. Farm Fatalities in Illinois 1992 - 1999, by Worker Activity



SOURCE: Illinois Department of Public Health, Division of Epidemiologic Studies, on behalf of the U. S. Bureau of Labor Statistics, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, June 2001.

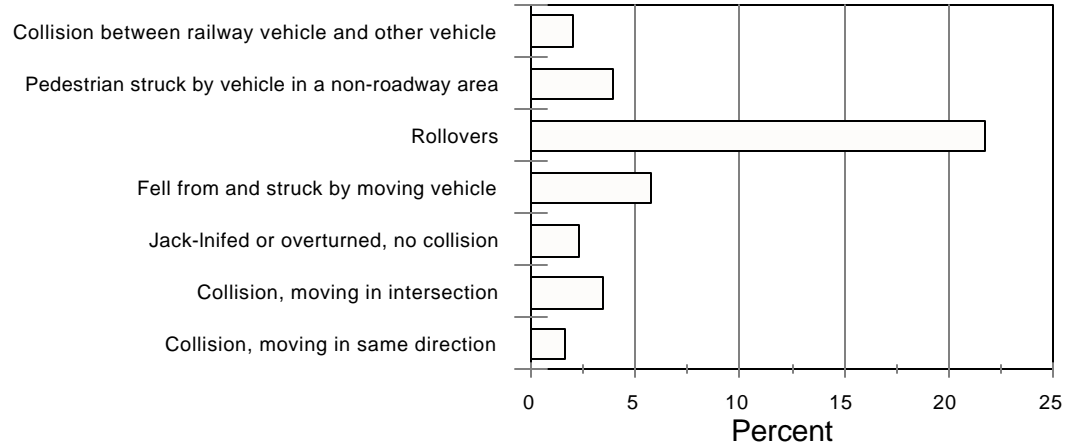
## Chart 3. Farm Fatalities in Illinois 1992-1999, by Event or Exposure



SOURCE: Illinois Department of Public Health, Division of Epidemiologic Studies, on behalf of the U. S. Bureau of Labor Statistics, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, June 2001.



**Chart 4. Farm Transportation Fatalities  
Illinois, 1992 - 1999, by Incident**



SOURCE: Illinois Department of Public Health, Division of Epidemiologic Studies, on behalf of the U. S. Bureau of Labor Statistics, in cooperation with state and federal agencies, Census of Fatal Occupational Injuries, June 2001.



## What's Up?

(recent additions to the Department Web Site)

Illinois Department of Public Health, Illinois State Cancer Registry, public data set, 1994-1998, October 2000.

Dolecek TA, Shen T, Snodgrass JL. Illinois Cancer Statistics Review, 1986-1998. Epidemiologic Report Series 01:1. Springfield, IL: Illinois Department of Public Health, March 2001.

Dolecek TA, Shen T, Snodgrass JL. Illinois County Cancer Statistics Review, Incidence, 1994-1998. Epidemiologic Report Series 01:2. Springfield, IL: Illinois Department of Public Health, February 2001.

Dolecek TA, Shen T, Snodgrass JL. Cancer Projections for Illinois and Illinois Counties, 1999-2002, Illinois Department of Public Health, February 2001.

Illinois Health and Hazardous Substances Registry Newsletter (Illinois Department of Public Health), Spring 2001. This issue includes an article *Declining Incidence and Severity of Adults with Elevated Blood Lead in Illinois, 1991-2000*, registry updates, and a new column *The Epi Inquirer*.





# The *Epi Inquirer*

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## ***What is an adjusted rate and how is it used?***

When compared across different populations, a rate often needs to be adjusted so that factors affecting it but not of interest to the researcher are minimized and the comparison is “fair and square.” Many chronic diseases are directly related to age but often we are more interested in the contribution of factors other than age. In an age-adjusted rate, differences in age composition of the involved study population are “standardized” to an external population, such as to the 1970 or 2000 U.S. population. Sex- and race-specific age-adjusted rates are further adjustments for gender and racial compositions. When comparing adjusted rates for different populations, it is important to use the same referent population. One should not adjust for factors that are of interest, for these factors cannot be assessed. For example, rates adjusted for socioeconomic status (SES) are not appropriate for examining disease disparities among different SES groups.

## ***I often hear the term “APC” mentioned in the IHHSR publications. What is it?***

“APC” stands for annual percentage change. It is a term used by epidemiologists to describe an “average” percentage change in rate from year to year over a span of several years. APC is estimated by fitting a loglinear regression line to the annual rates and calculating APC based on the slope coefficient of the regression. As with any estimated number, APC needs to be interpreted in the context of statistical variation; this is done by calculating standard errors or confidence intervals.

## ***I’ve heard that when the number of cases is small, a rate cannot be calculated. Why?***

A rate can be calculated as long as one has a numerator and a denominator. However, how good or “stable” that rate is depends on the number of cases and/or the size of the underlying population. There are different measures of the stability of a rate. A common measure is the relative standard error (RSE), which is a function of the number of cases. For a simple crude rate, six cases correspond to an RSE of 41 percent and 16 cases correspond to an RSE of 25 percent. These RSE values, however, will be different when applied to adjusted rates. Because of this, and because of the fact that unstable rates can be combined to generate stable results (e.g., in trend analysis of multiple rates), rates in IHHSR publications are not suppressed but are presented along with some measure of variation, such as the standard error or confidence interval. Thus, the reader is given a chance to make his or her own judgment.

**More questions?** Send them to The Epi Inquirer, Division of Epidemiologic Studies, 605 W. Jefferson St., Springfield, IL 62761, or email at [ctshen@idph.state.il.us](mailto:ctshen@idph.state.il.us).

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George Ryan, Governor  
John R. Lumpkin, M.D., Director of Public Health  
Tiefu Shen, M.D., Chief, Division of Epidemiologic Studies  
Jan Snodgrass, Illinois State Cancer Registry  
Roy Maxfield, Census of Fatal Occupational Injuries

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Illinois Department of Public Health  
Division of Epidemiologic Studies  
605 W. Jefferson St.  
Springfield, IL 62761