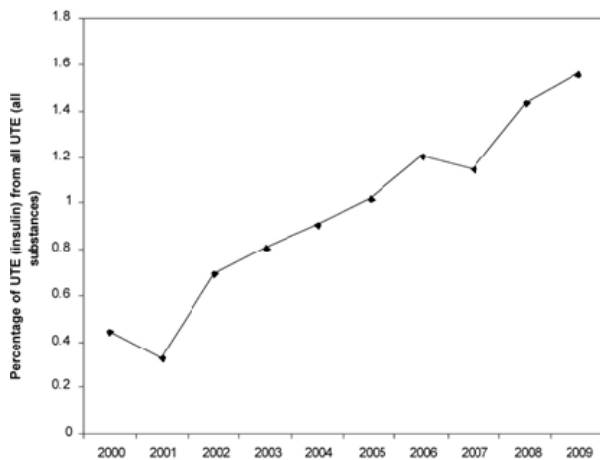


## Unintentional Insulin Errors

Due to the complexities associated with the treatment and management of diabetes mellitus, persons with diabetes are exceedingly susceptible to adverse drug reactions involving unintentional insulin errors. Specifically, these errors are defined as those that result in the wrong dose, incorrect route of administration, administration to the wrong person, or administration of the wrong substance, and often manifest as potentially life-threatening hypoglycemia.

While insulin errors have historically presented morbidity and mortality concerns for persons with diabetes, recent trends indicate a significant increase in the rate of insulin-related therapeutic errors in the ambulatory setting. A 10-year retrospective analysis of calls to 9 poison centers serving the population of 4 states observed a 279% increase in insulin exposures from 170 cases in 2000 to 645 in 2009. (*Ann Pharmacother* 2011;45:17-22). The insulin exposures that were *unintentional* therapeutic errors increased from 70 in 2000 to 503 in 2009, a 495% increase. The increase in therapeutic errors was observed to be fairly consistent over the 10-year study period, with a mean annual rise in rate of 28%. Moreover, errors occurred primarily in those over 40 years old (73%) and females (63%), and the majority occurred in the evening hours (71% occurred between 1800 and 2400). Given the expected upward trends in diabetes prevalence, there will be a continued need for the cost-effective triage, identification, and treatment of hypoglycemia and hypoglycemia-associated complications (e.g. coma, seizure, hypotension, and neurologic injury). Poison centers, with their availability at all hours and staff of trained health-care professionals, will be an increasingly important resource for patients with adverse events and errors involving insulin.



Percentages of unintentional therapeutic errors (UTE) involving insulin rates by year. (*Ann Pharmacother* 2011;45:17-22)

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### ***DID YOU KNOW THAT... insulin is associated with more medication errors in hospitals than any other drug?***

The U. S. Pharmacopoeia's 2008 MedMarx annual report disclosed that insulin was involved in the greatest number of errors by healthcare professionals in acute care hospitals in the U.S., as well as the greatest number of errors causing harm. Data analyzed by the ECRI Institute and Institute for Safe Medication Practices indicated that 24.7% of insulin-related medication errors in Pennsylvania hospitals involved dose omissions, 13.9% involved giving the wrong drug, and 13% involved overdoses or incorrect doses (2008-2009). (*Pa Patient Saf Advis* 2010;7:9-17).



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