

**It's Just Math - Unless It's Toxic!**

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**Background:** Dosing errors from erroneous pharmaceutical calculations result in morbidity and mortality.

**Hypothesis:** Emergency medicine (EM) residents perform poorly calculating correct doses.

**Methods:** A 6-question needs assessment survey of EM residents was conducted at a city-wide conference. Residents performed simple pharmaceutical calculations and were queried regarding resources they typically use.

**Results:** 51 EM residents completed the survey, PGY1 n=29, PGY2 n=14, PGY3 n=8. The majority of PGY2 and PGY3 residents performed similarly having the correct answer on at least 4/6 questions. Only 52% of PGY1 responded correctly to at least 4/6 questions. 65% of PGY1, 50% of PGY2 and 75% of PGY3 residents thought it was very important to correctly perform basic calculations. Google<sup>®</sup> and Up To Date<sup>®</sup> were frequently used to assist with calculations; 45% of PGY1, 50% of PGY2, and 37% of PGY3 residents rely on smart phone apps. More than 70% of residents in all 3 years utilize clinical pharmacists (Pharm.D.) for calculating doses. Pharm.D. services were available at all times in the majority of survey responses.

**Discussion:** The trends from this survey are valuable despite the sample size. Residents performed poorly when calculating doses. This may contribute to patient morbidity and mortality. Internet resource use increased as year of training increased. Pharm.D. services are extensively utilized in all 3 years of training.

**Conclusion:** Residents and patient outcome would benefit from additional resident training in calculating correct dosages.