

Susan Kohl Malone MSN, RN

Martha Dewey Bergren, DNS RN CSN FNASN

Erin Maughan, RN, PhD, APHN-BC

Failure to rescue: A potential measure of school nursing practice

Objectives

- Identify key components of failure to rescue
- Identify these components in school nursing practice
- Formulate an initial characterization of school deaths and school rescues.

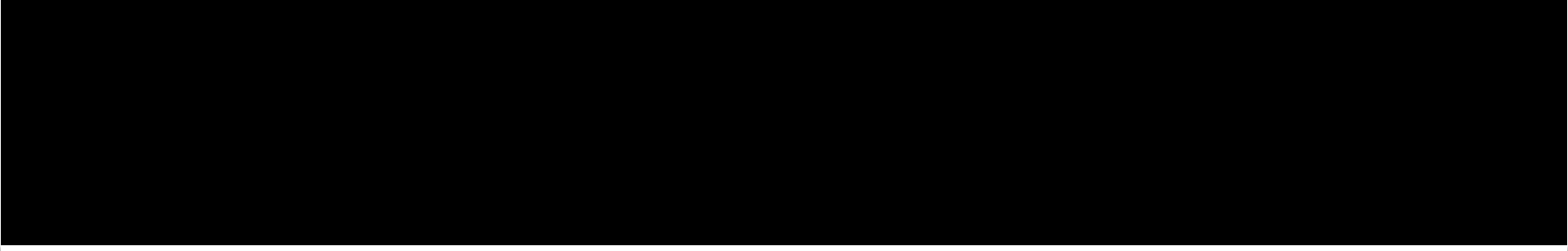
Why does it matter?

- Widely varying school nurse to student ratios
- Are children in Washington DC healthier, meeting developmental milestones, and performing better in school than children in Michigan?

Rank	Students per School Nurse	State
1	396	Vermont
2	448	Connecticut
3	454	New Hampshire
4	472	Delaware
5	476	Washington, DC
6	477	OSHNA
7	503	Alaska
8	504	Wyoming
9	514	Maine
10	517	Rhode Island
11	533	New Jersey
12	536	Alabama
13	628	Kansas
14	665	New Mexico
15	696	New York
16	700	Massachusetts
17	732	Missouri
18	776	Maryland
19	779	Pennsylvania
20	784	Louisiana
21	789	South Carolina
22	819	Iowa
23	826	Texas
24	837	Virginia
25	918	Arkansas
26	960	Indiana
27	1,027	South Dakota
28	1,065	West Virginia
29	1,098	Mississippi
30	1,114	Kentucky
31	1,185	North Carolina
32	1,328	Ohio
33	1,403	Nebraska
34	1,416	Arizona
35	1,451	Montana
36	1,625	Wisconsin
37	1,649	Nevada
38	1,773	Minnesota
39	1,774	Tennessee
40	1,788	Colorado
41	1,881	Idaho
42	2,026	Oregon
43	2,031	Washington
44	2,179	Illinois
45	2,187	California
46	2,318	Georgia
47	2,372	Oklahoma
48	2,537	Florida
49	3,637	Utah
50	4,357	North Dakota
51	4,411	Michigan

Student-to-School Nurse (RN) Ratios 2010

NASN
National Association of School Nurses
www.nasn.org



“Cost-benefit analysis of school nursing is not likely going to be beneficial... they would have to be impacting the lives of children dramatically to justify their salary.” (*Hopkins Health Economist*)

“It would be difficult to prove the value of a school nurse because they don’t save lives.”
(*Hopkins Health Economist*)

Reed (2009)

“...there will be a significant increase in the number of students who claim sickness so they can go home and play video games. Or worse.”

“Are kids getting so sick during the middle of the day they’re having to be rushed to the ER?”

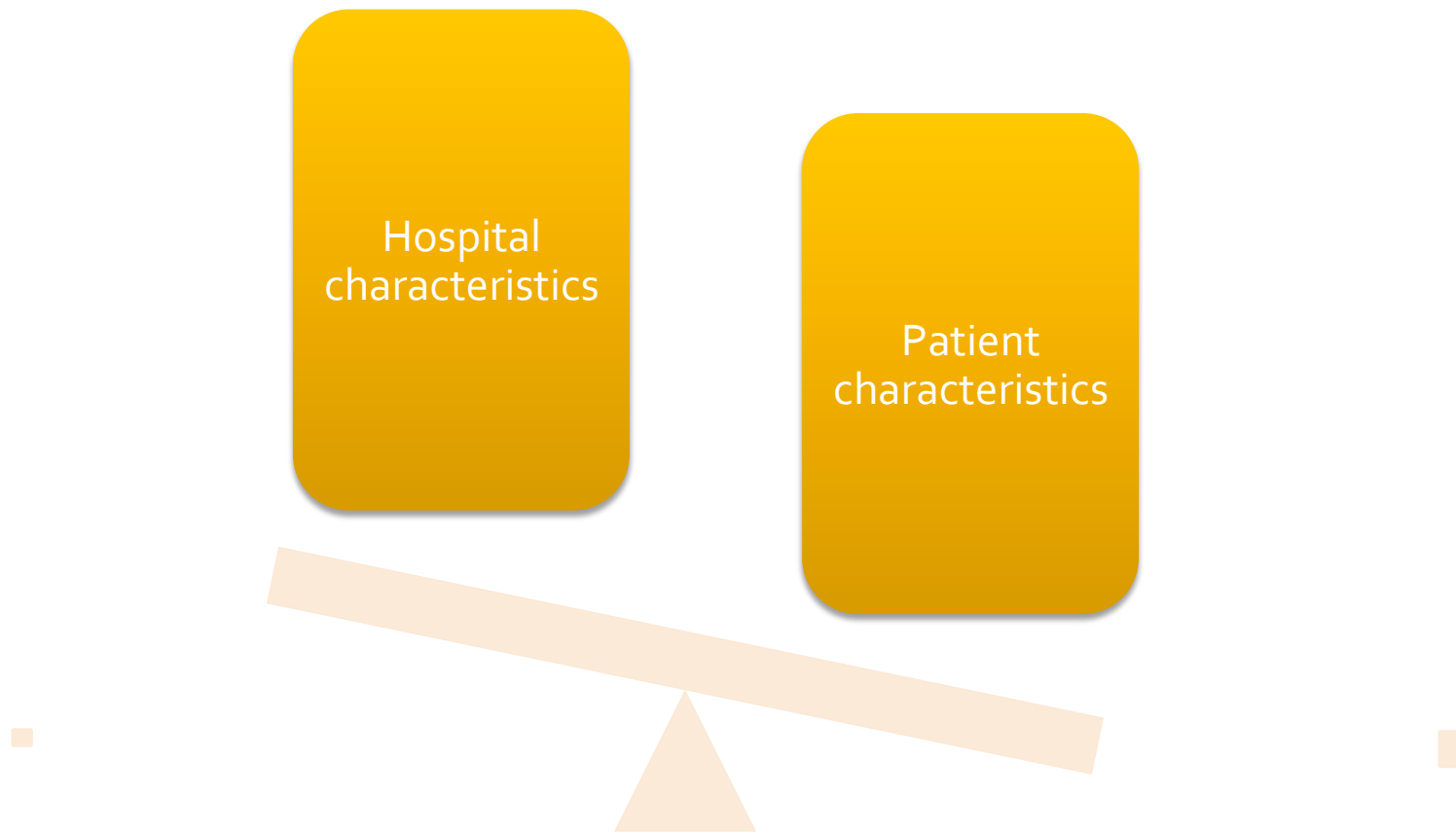
Zizza (2009, February 9)

Background

- "...probability of dying given complication..."
- $p(d) = p(d|a) \times p(a) + p(d|\text{no } a) \times (1 - p(a))$

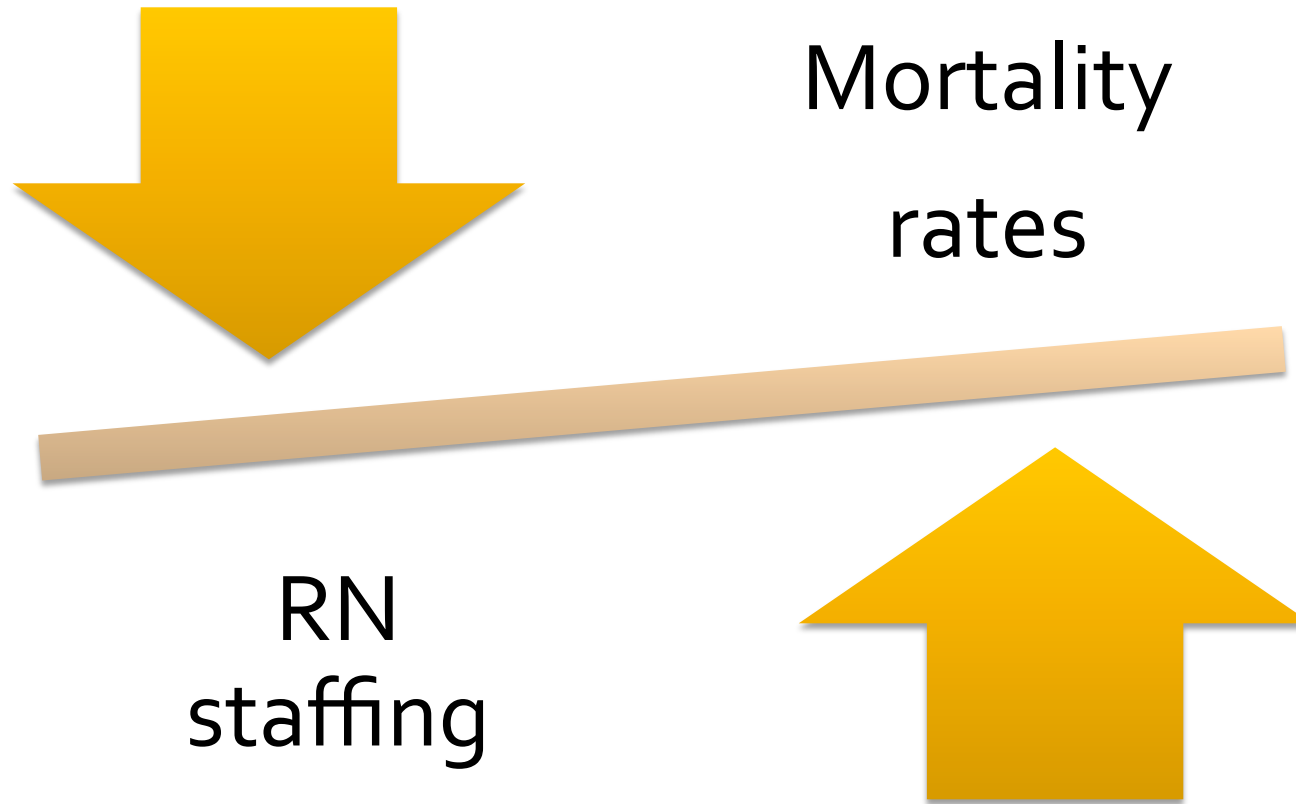
Silber, Romano, Rosen, Wang, Even-Shoshan & Volpp (2007)
Silber, Willima, Krakauer & Schwartz (1992)

The appeal of FTR as an outcomes measure



Silber, Williams, Krakauer & Schwartz (1992)

Background



Aiken, Clarke & Sloane (2000).
Aiken, Clarke, Sloane, Sochalski & Silber (2002)

Aims

- When there is a cardiac or respiratory arrest at school, does it make a difference whether or not a school nurse is present?

The challenge & the approach

- No data
- Even if data, small N

Components of professional vigilance

- Anticipation of impending problems
- Knowing when immediate action is necessary
- Mounting an effective response

Clarke, S. (2004)

Meyer, G. & Lavin, M. (2005)

Anticipation of impending problems



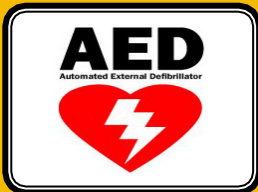
Authorized person to manage life-threatening emergencies

- 25% of schools have no school nurse; 30% of school nurses are part time
- 37 states do not meet the recommended student to nurse ratio



Medical emergency response plan

- A significant portion of schools that have a school nurse present for only a portion of the day do not have a medical emergency response plan



Automated external defibrillator

- 68% of schools do not have an automated external defibrillator on campus

Hazinski, M., Markenson, D., Neish, S., Gerardi, M., Hootman, J., Nichol, G. et al. (2004).

Olympia, R., Wan, E., & Avner, J. (2005)

Knowing when immediate action is necessary

- A first grade student had swallowed a quarter. EMT was called. My principal questioned the need to call the EMT and my [the school nurse's] handling of the situation. The quarter was discovered lodged in her right bronchus
(L. Freeman, Personal communication, March 25, 2009).

School deaths

“By the time the paramedics arrived [the student] was not breathing and had no pulse. An automated external defibrillator, commonly know as an AED, sat beside her body.” (Campana, 2009)

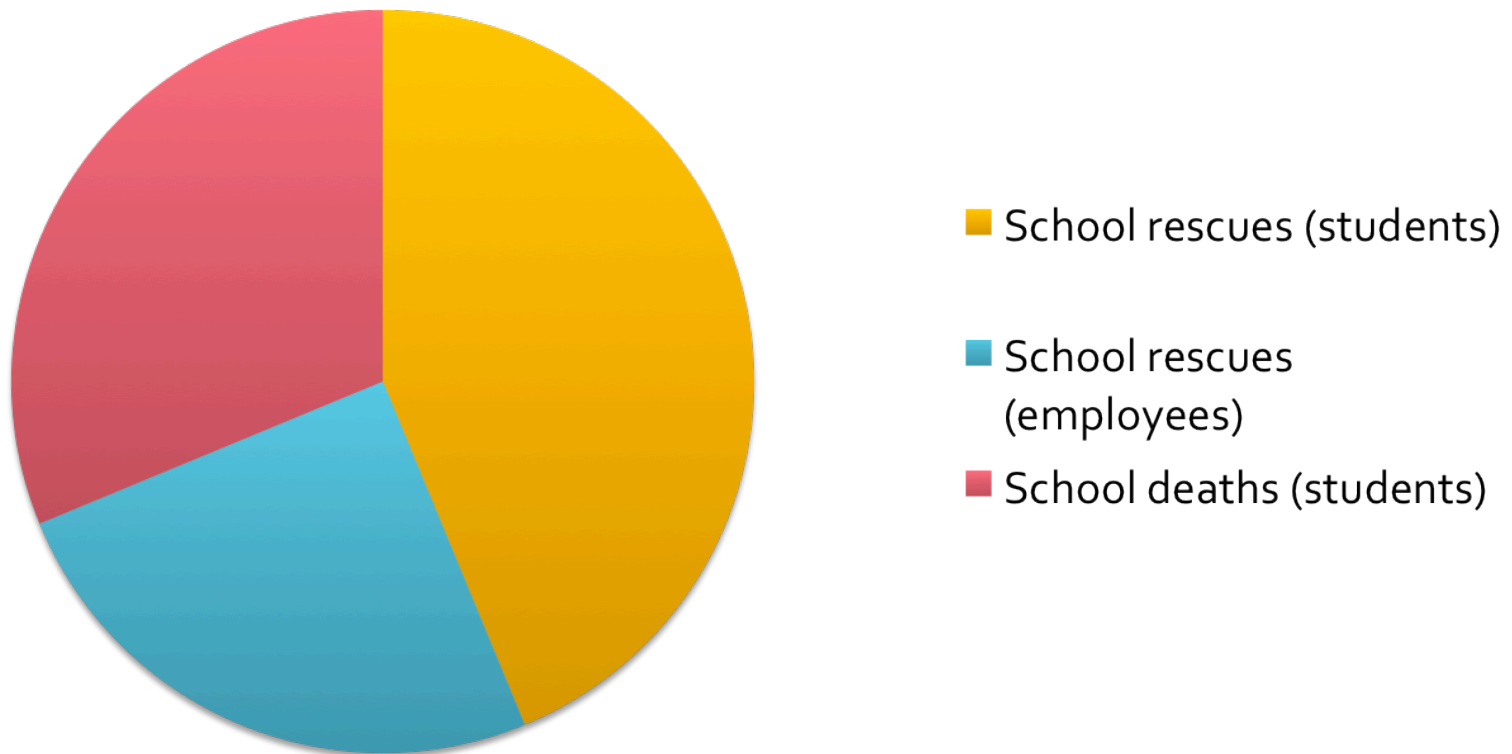
“The health clerk told [the investigator] she didn’t know whether [the student] was breathing and that no CPR was done. The school principal later told the investigator, ‘We are not medical people’.” (Sherman, 2009)

Campana, D. (2009, September 20).

Sherman, K. (2009, March 8).

Mounting an effective response

Media Accounts of School Rescues & School Deaths
(2009) (N=19)



Findings

- When there is a cardiac or respiratory arrest at school, does it make a difference whether or not a school nurse is present?

Future directions

- Multi-state comparisons
 - Process measures
 - 911 emergency calls
- “Late to rescue”