



# Patient Safety America Newsletter

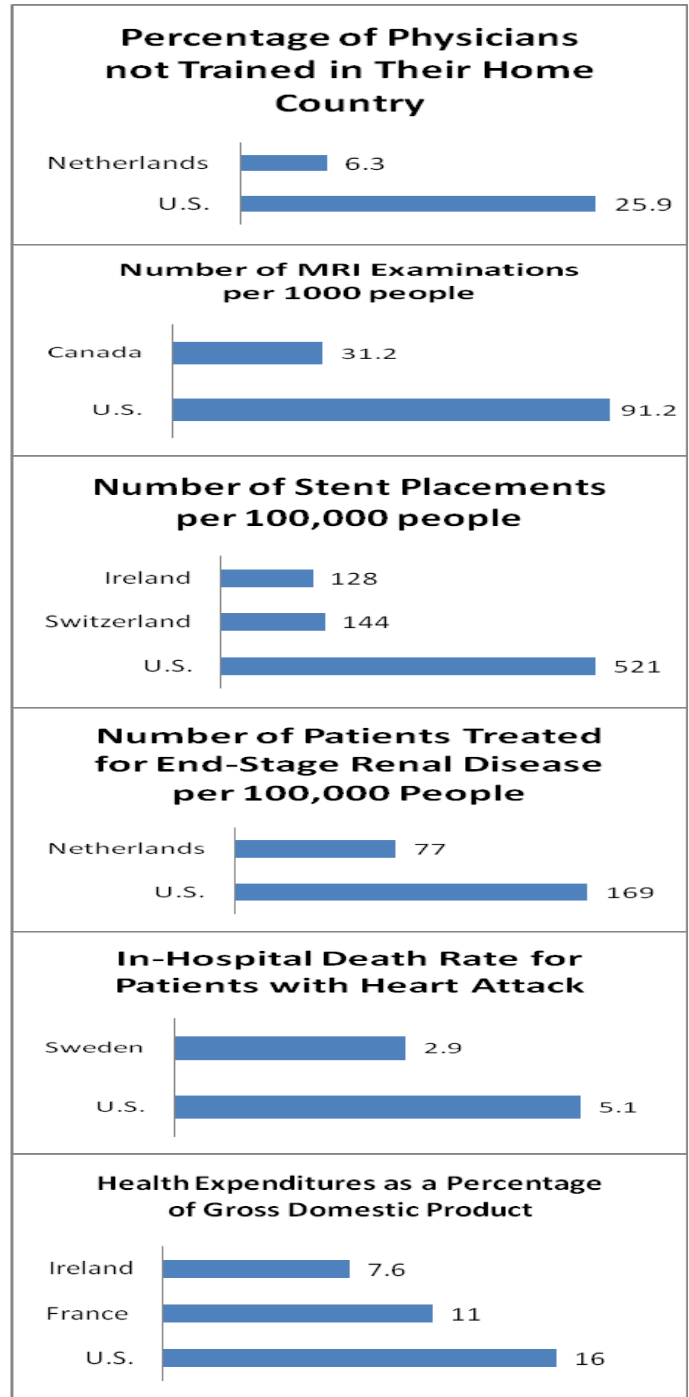
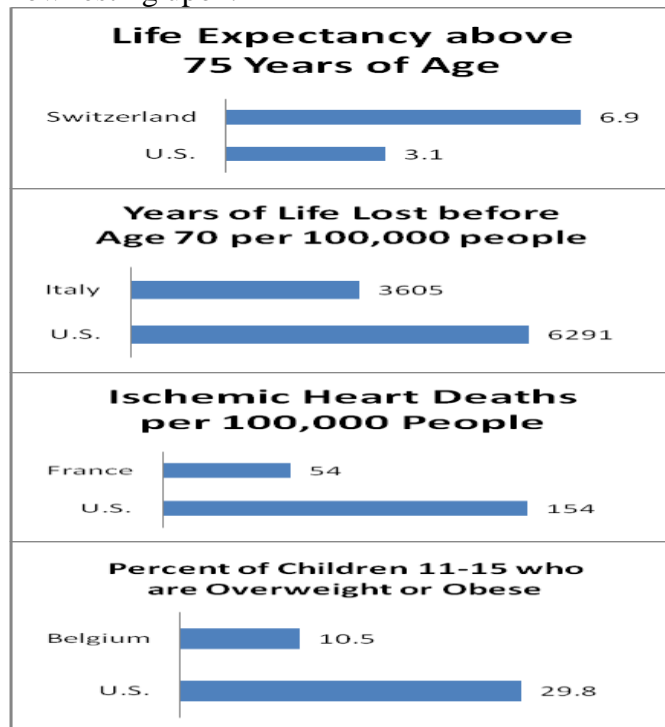
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John T. James, Ph.D.

**Question:** In the US the number of newborns with weight less than 2.5 kg is 8.3/1000 births. What is it in Ireland?  
 a) 15/1000      b) 10/1000      c) 5/1000      d) 1/1000

## Frustrating Facts

An MD writing a commentary in the *JAMA* nicely summarized a series of very ugly facts about health and healthcare in the United States.<sup>1</sup> He took these from a book called “Healthcare at a Glance” published by the Organization for Economic Co-operation and Development in 2009. The author asks in his title, “Facts, facts, facts: What is a physician to do?” He laments the lack of physician engagement in looking at other healthcare systems for answers to problems in the United States. The graphs below speak for themselves. I have used his selection of comparison countries, which he chose based on healthcare systems that have a fundamentally different basis than ours. In my opinion, if we ignore these facts and the message they convey, then our country will remain at high risk of economic collapse, a precipice that we are now resting upon.



## Sodium and Potassium

A large team of experts, mostly MDs, investigated the association between high sodium and low potassium intake and the risk of cardiovascular disease and death.<sup>2</sup> They examined the records of more than 12,000 Americans selected

### **Warning!**

*Habitual consumption of food with high sodium and low potassium is dangerous to your health, placing you at much higher risk of hypertension, heart disease and death.*

to be representative of the U.S. adult population. In 15 years of follow up of this group 2,300 deaths occurred. Low sodium and high potassium intakes were associated with reduced all-cause mortality. When the investigators compared the sodium-to-potassium ratios, those with the highest ratio were 50% more likely to die than those in the lowest group. This finding was robust across many factors including gender, race, body mass index, or physical activity.



In a brief commentary on this investigation two MDs observed that the Institute of Medicine has recommended that the FDA regulate sodium in our foods.<sup>3</sup> In Finland after 18 years of regulation, the dietary intake of sodium has dropped by one third and there has been a concomitant drop in high blood pressure and mortality from stroke and heart disease. These MDs recommend a plant-based diet, which is high in potassium and low in sodium. Typical food processing reduces potassium and increases sodium content. It would seem to me that something like a black-box warning on foods and menu items with high sodium to potassium ratios might wake folks up to the long-term danger of such foods.

## How to Measure Blood Pressure

Suppose you have pledged to yourself to change your diet to reduce sodium and increase potassium, and you want to determine if your blood pressure is decreasing. What is the best way to measure your success? A team of researchers asked how many blood pressure readings should be taken to get an accurate and representative measurement in men (veterans) with poorly-controlled high blood pressure.<sup>4</sup> They noted that a single measurement showing a patient's systolic blood pressure to be in the range of 120 to 157 mmHg could not be classified with 80% certainty as to whether the patient's blood pressure was in control or not.

They recommended an average of 5-6 measurements be used to determine whether blood pressure is in control. The best place to do this is at home with measurements taken over several days at different times of day. **Beware of a physician who wants to act on a single measurement taken in his office. This could place you on medication that you do not need.**

## Cost of Drug-Eluting Stents (DES)

Stents improve blood flow to heart muscles. Drug-elution stents were introduced about 8 years ago in hopes of improving the performance of stents placed in patients' coronary arteries. A team of 5 investigators asked how much the use of such DESs was costing each year by 2006 in almost 2 million Medicare patients with coronary artery disease.<sup>5</sup> There is little doubt that stents of any kind are beneficial in patients with a recent heart attack or acute coronary syndrome; however, the investigators found that DESs were being placed in a great many



patients that did not have any acute syndrome. They found that the excess cost of placing DESs in patients who were most likely not in need of any stent was approximately 1.1 billion dollars per year.

They wrote that "this is troubling, since the limited efficacy of percutaneous coronary interventions [stents] without acute coronary syndrome...would not justify sizable DES-related

cost increases among patients without acute coronary syndrome.” The journal editor commented that ‘it is time to clearly define what the value of the extraordinary investment has been in terms of patient benefit and study the harms and determine if we are getting good value for this outlay.’ This perspective is incomplete because it does not consider the unnecessary risk of harm to patients when unjustified stents are being inserted in them.

### *What does “Possible” Mean?*

Communication of information is critical in the doctor-patient relationship. A team of medical scientists asked what the perceived probability of a medical condition was based on the words used to describe that probability.<sup>6</sup> They involved about 150 patients, medical students, residents and practicing physicians in their study.

Suppose you are told that you will “never” have a condition. That word is securely viewed by all as meaning that there is a “0” probability of it happening. Now suppose you were told that your chances of having the medical condition were “unlikely.” The range of the perceived probabilities was from “0” to almost 40%. Moving up the scale a little more, suppose you were told that the condition in question was “possible.” The perceived

probability of that happening ranged from 20% to 100%. Finally, the perceived probability of “very likely” ranged from 70 % to 100%.

In light of their findings, the authors suggest a more “restrictive” categorization be used, such as low, intermediate, and high probabilities. **As a patient it is your job to make sure you understand what your doctor is telling you. If your doctor tells you that a condition is unlikely, possible or very likely, then ask what that means in quantitative terms.** He may not know, which is fine, but he may refine his statement of probability so that you can make better decisions about your care.

### *Life-threatening Childhood Obesity*

In recent newsletters I have written about the need for lifestyle changes to reduce the risk of disease rather than waiting for disease to strike, and then expecting the healthcare industry to intervene, manage the disease, and make big money. To what extent should society attempt to modify lifestyles to minimize the risk of serious, chronic illness, especially in children?

A physician and lawyer grapple with this question as it applies to children with life-threatening obesity.<sup>7</sup> The children in question are those whose body-mass-index is at or beyond the 99<sup>th</sup> percentile. This is roughly 2 million children in the US, so the discussion is by no means academic. The disease risk is that type 2 diabetes will soon occur and this could eventually lead to a cascade of other diseases including cardiovascular disease. Should these children be placed in an environment where their risk of disease can be reduced, and then returned home?

The authors acknowledge the emotional trauma of removing a child from his parents’ household, but this has to be weighed against the risk of gastric bypass surgery. They acknowledge the possibility of a genetic disease. But they also recognize that it is unethical not to do something when a child is clearly at risk. There are two levels of solution outside clinical intervention. In carefully selected cases the child can be removed from the parental household. In the meantime policies can be implemented to improve the dietary practices of society in general.



In my opinion, our children are worth a concerted effort on all fronts. I think it might be important to first intervene with the entire family before singling out the child. My observation is that obesity tends to run in families due to cultural factors rather than genetic factors. Furthermore, there needs to be careful study of what interventions work and what do not. Guidance exists on this subject, but as far as I know, interventions are a new plan that has not received scientific evaluation.



## References

- 1) Brook, RH. Facts, facts, facts: What is a physician to do? *JAMA* 306:432-433, 2011
- 2) Yang, Q, T Liu, EV Kuklina, et al. Sodium and potassium intake and mortality among US adults. *Arch Intern Med* 1183-1191, 2011
- 3) Silver, LD and TA Farley. Sodium and potassium intake. *Arch Intern Med* 1191-1192, 2011
- 4) Powers, BJ, MK Olsen, VA Smith, et al. Measuring blood pressure for decision making and quantity reporting: Where and how many measures? *Ann Intern Med* 154:781-788, 2011
- 5) Groeneveld, PW, D Polsky, F Yang, et al. The impact of new cardiovascular device technology on health care costs. *Arch Intern Med* 171:1289-1291, 2011
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- 7) Murtagh, L and DS Ludwig. State intervention in life-threatening childhood obesity. *JAMA* 306:206-207, 2011

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*Note that the September issue of Consumer Reports has an article called "The business of healing hearts." If you or someone you care about has a heart problem, then please read this article. You may only get one chance to get the right treatment for your heart – and you do not want that to be the wrong treatment. Here is a summary of that article:*

<http://www.consumerreports.org/cro/magazine-archive/2011/september/health/healing-hearts/overview/index.htm>

Answer to question this month: c) 5/1000, which is substantially better than in the US.<sup>1</sup>