

How United States could save \$100 billion per year in healthcare costs!

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National healthcare costs have seen an alarming rise for many years. In 2007, they were reported to be \$2.3 trillion, over eight times the \$253 billion spent in 1980. In the following paragraphs, an innovative approach to improving health is presented, which if nationally adopted and diligently pursued, could save \$100 billion a year or more in healthcare costs.

Understanding of Systemic Fundamentals.

To begin, consider the systemic cause-and-effect representation of human health depicted in Figure 1. Numerous parameters (outcome measures) have to be within appropriate limits for good health; Many are quantitative while some are subjective. Some quantitative parameters are blood pressure, pulse rate, serum cholesterol, and serum sugar level. In the qualitative category are sinus problems and nasal allergies, constipation, hyperacidity, snoring, etc. The human system is self-regulating and nonlinear and so it is best to focus the analysis on an individual and not on the population at large. As depicted in Figure 1, the outcome measures are influenced by two types of causes. They are: (1) uncontrollable causes arising from heredity factors called common causes, and (2) controllable causes such as diet, exercise, medicines, environment, smoking, etc., called assignable causes.

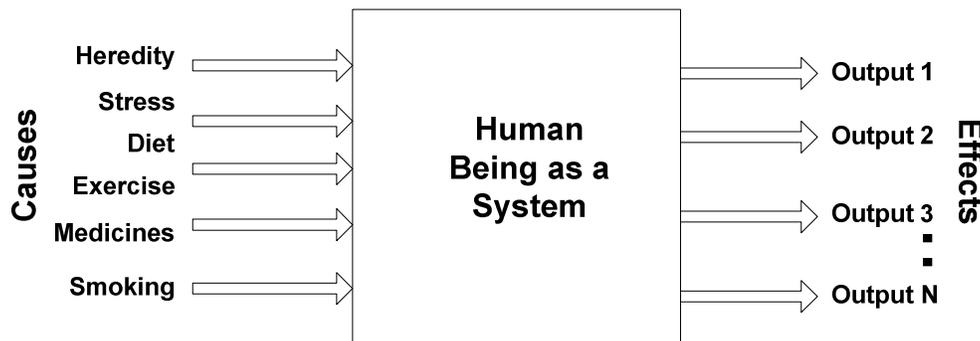
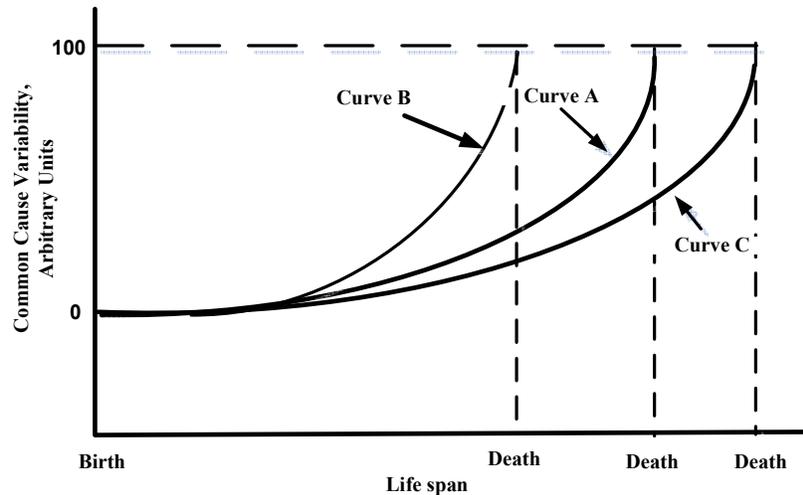


Figure 1. Systemic Representation of Human Health

In the absence of undesirable characteristics inherited from ancestors, the human life span is said to be 128 years. This specific value may or may not be correct but the life span is finite. Due to heredity factors and aging, the common cause variability in the outcome measures indicative of good health gradually worsens from the time of birth to the time of death qualitatively shown as curve labeled as **A** in Figure 2. We compound our difficulties by adopting unhealthy life-style choices (lack of exercise, improper diet, inability to cope with stress, etc.) starting at an early age. As a consequence, the common cause variability further degrades qualitatively shown as curve **B** in Figure 2. It would appear reasonable to suggest that if the assignable causes (causes that are under our control) were properly handled, the worsening effect on the common cause variability would be reduced, perhaps considerably, giving us a healthier life and a longer life span.

The New England Journal of Medicine reports in its August/September 2006 issue that \$20,000 in medical spending adds one year to life.

The foregoing discussion brings out the importance of proper diet, stress management, exercise, etc. The ideas also point to the importance of adopting these life-style choices at



**Figure 2. Effect of Common Cause Variability, Aging, and Life-style Choices on Health**

an early age. Here, the focus is solely on exercises but what kind of exercises should be adopted that might significantly reduce healthcare costs.

The author is delighted to have come to know about a set of exercises some years ago that just might do the trick. To grasp the ramifications of what is being presented fully, note first that our external systems (muscles, spine, joints, etc.) **and** internal organs and systems must function well for good health. There are a number of exercises for external systems such as Yoga Asanas, workouts at a Gym, swimming, walking, etc. And so, exercises that specifically target internal organs and systems are sorely needed. This is consequential because there are a number of ailments attributable to internal organs and systems not functioning well.

It turns out that such exercises do in fact exist and have been around for 2,500 years (Patanjali, ~500 BC) and they involve ingenious manipulation of breathing. These exercises called Pranayam, target internal organs and systems from nasal systems and sinuses all the way to GI and urinary tracts in a way no other form of exercises can, offering tremendous potential for improving health and reducing national healthcare costs.

If these exercises are as good as they are made out to be and have been around for as long as they have, it is reasonable to enquire why they were not widely practiced until a decade or two ago even in India the home of Patanjali. The explanation is two-fold. First, it was widely believed that these exercises were meant strictly for those in the pursuit of spiritual progress, and the second is, the capacity to decipher these exercises from ancient works in a society in decline for a thousand years or more until recently simply did not exist. Now that India is rising (the author predicted the rise of India, along with China, in the early nineties), some in India have deciphered the intricacies of how these exercises

ought to be done from ancient manuscripts and that they are appropriate for everyone healthy enough to engage in them and benefit from them. Pre-eminent among a handful of individuals who figured out the power of Pranayam is Swami Ramdev ([www.divyayoga.com](http://www.divyayoga.com)) of Hardwar, India, who has by now popularized Pranayam among hundreds of million Indians in India and abroad. The author met Swami Ramdev last year to impress upon him the necessity of following six sigma in the pursuit of Pranayam.

Reverting to Figure 1, it appears Pranayam will first attempt to compensate for the worsening effects of assignable causes on one's common cause variability, restoring it to its natural state (moving from curve B to A). If this is achieved, then Pranayam will focus on possible further improvement (moving from curve A to C). Evidence practitioners present on the daily television programs of Swami Ramdev is a reason for the belief that this analysis may be correct. Of course, each individual being uniquely nonlinear, not everyone will realize identical levels of benefits from Pranayam.

Numerous mainstream publications have been carrying articles on yoga Asanas and meditation for many years now. For example, medical professionals at the MD Anderson Cancer Center in Houston have reported on the benefits of Asanas and meditation for breast cancer patients (*New York Times*, 2006). Also an article in the *Archives of Internal Medicine* in June 2006 reported on the benefits of meditation for subjects with coronary disease. Pranayam too is a part of the same Yoga System of Patanjali as Asanas and meditation, an additional source of confidence about its benefits.

As a six sigma professional having felt the need for scientific scrutiny, the author carried out a six sigma investigation to further confirm the health benefits of Pranayam. He enlisted a group of thirty participants in Louisville (medical doctors, engineers, professors, and others) a few years ago who participated in a Pranayam with six sigma program for several months and the results are encouraging. Furthermore, the author has seen tremendous benefits of Pranayam on his own health. He is 65+ now and feels he is healthier today than he was a decade ago. These days, a group of medical doctors comes to the author's home every Sunday to practice Pranayam. The genius of Patanjali, the wisdom of Swami Ramdev who figured out the intricacies of how these exercise ought to be performed from ancient Indian works, and the author's six sigma investigations are all supportive of the claim Pranayam can improve health. Even a modest 5% savings in US healthcare costs equate to over \$100 billion annually!

### **Forward Action Plan.**

It is suggested that Swami Ramdev be invited to conduct a Pranayam training session. The author would be pleased to coordinate the visit. A group of senior professionals should be invited to practice Pranayam with six sigma for a few months. Participants will likely find the experience to be transformational, convincing them that everyone ought to pursue these exercises. A plan must be devised to popularize these exercises among the population. Here there is a challenge. Left to themselves, individuals are not apt to give high enough priority to do these exercises at home. However, if they are made a part of daily work-life, the chances of widespread adoption would be much higher. The program is in the interest of employers since the benefits of reduced insurance claims, fewer absences, and healthier employees would likely offset the productivity loss of an hour a day for these exercises.

## References.

The following individuals may be approached to comment on the merit of this proposal.

1. Hon. Dr. Manmohan Singh (Ph. D. Economics, Oxford), Prime Minister of India. Dr. Singh will be able to shed light on what kind of an impact Swami Ramdev is having in India.
2. Dr. Vijay L. Kelkar (Ph. D., Economics, UC Berkeley), Chairman, Finance Commission, Government of India.
3. Hon. Mr. Dmitry Medvedev, President of Russia

India Today Magazine (May 19, 2008, pp.25-33) carried this article. "Newly elected Russian President Dmitry Medvedev is all set to introduce a new fitness mantra for Russia: Yoga - *On the Sunday before he was sworn in, Medvedev took time off from his busy schedule for his favorite artistic yoga session that included alternating bouts of Asanas and Pranayam and ending with the chanting of Aum. Praising yoga's ability to help him beat the stress of his job, he recently told a Moscow glossy proudly, "I can stand on my head".*

## Physicians in Louisville, Kentucky Practicing Pranayam.

1. Dr. Mutyam Sharma, Emergency Medicine
2. Dr. Kailash Sabharwal, Endocrinology
3. Uday M. Kayerker, Anesthesiologist
4. Nandlal Yepuri, Family Practice
5. Dr. B. B. "Deepak" Borkar, Gastroenterology
6. Dr. Mahesh Agarwal, Anesthesiologist
7. Dr. Rukmaiah Bhupalan, Neurologist
8. Dr. Leela Bhupalan, Internal Medicine

## Further Reading.

1. **Deshpande, P. B.**, "A Small Step for Man: Zero to Infinity with Six Sigma", Six Sigma and Advanced Controls, Inc., 2008
2. **Iyengar, B. K. S.**, "Light on Pranayama", Harper Collins Publishers, India 2005.
3. **Kumar, Hari**, *India's Harried Elite Now Turns, and Twists, to Yoga Lite*, *The New York Times*, Feb 1 2005. 15.
4. **Lacewell, Nancy**, "*Breath as Life Force, Professor Puts Stocks in ancient technique from India*", Business First, November 10, 2006.
5. **Staff Reporter**, *Pranayam and Six Sigma*, Maharashtra Herald, March 11, 2007.