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in Advancing Healthcare



The Global Mercury Crisis and The Global Hypertension Crisis

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What Risks Are We Taking?

- The Global Mercury Crisis

Do we want to risk significantly worsening the:

- The Global Hypertension Crisis



Introduction

- I am not a doctor; I am an engineer
- I work for Philips Healthcare
 - Philips Healthcare does NOT make mercury sphygmomanometers
- I am the Coconvener of ISO/IEC Joint Working Group responsible for writing the international Sphygmomanometer standards
- Mercury pollution from sphygmomanometers is inconsequential in comparison to electric generation or lighting



Let us review the facts

- Hypertension is a world-wide epidemic
 - 25% to 30% of adult Americans have high blood pressure ¹⁾
 - 44% of adult Europeans have high blood pressure ²⁾
- High blood pressure is a significant cause of cardiovascular and renal disease
- High blood pressure leads to DEATH

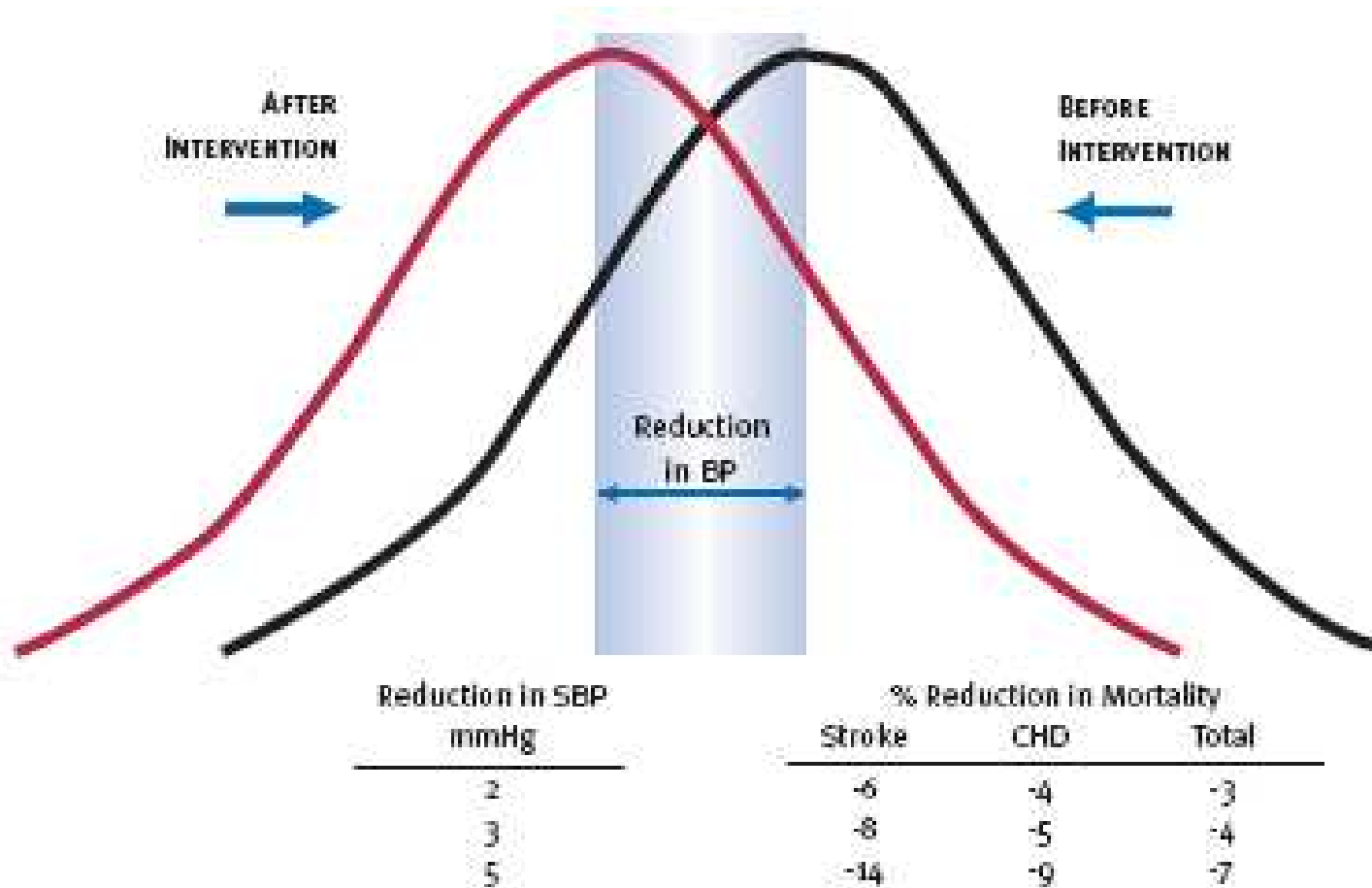


How do we diagnose and treat hypertension?

- By determining blood pressure, particularly systolic blood pressure
- Comparing a patient's blood pressure to the longitudinal outcomes research, e.g. Framingham Heart Study, to determine when and how to treat a hypertensive patient
 - These studies have used columns of mercury to determine the patient's blood pressure
 - All other methods give different results
 - They have an error relative to columns of mercury



Blood pressure and mortality ³⁾



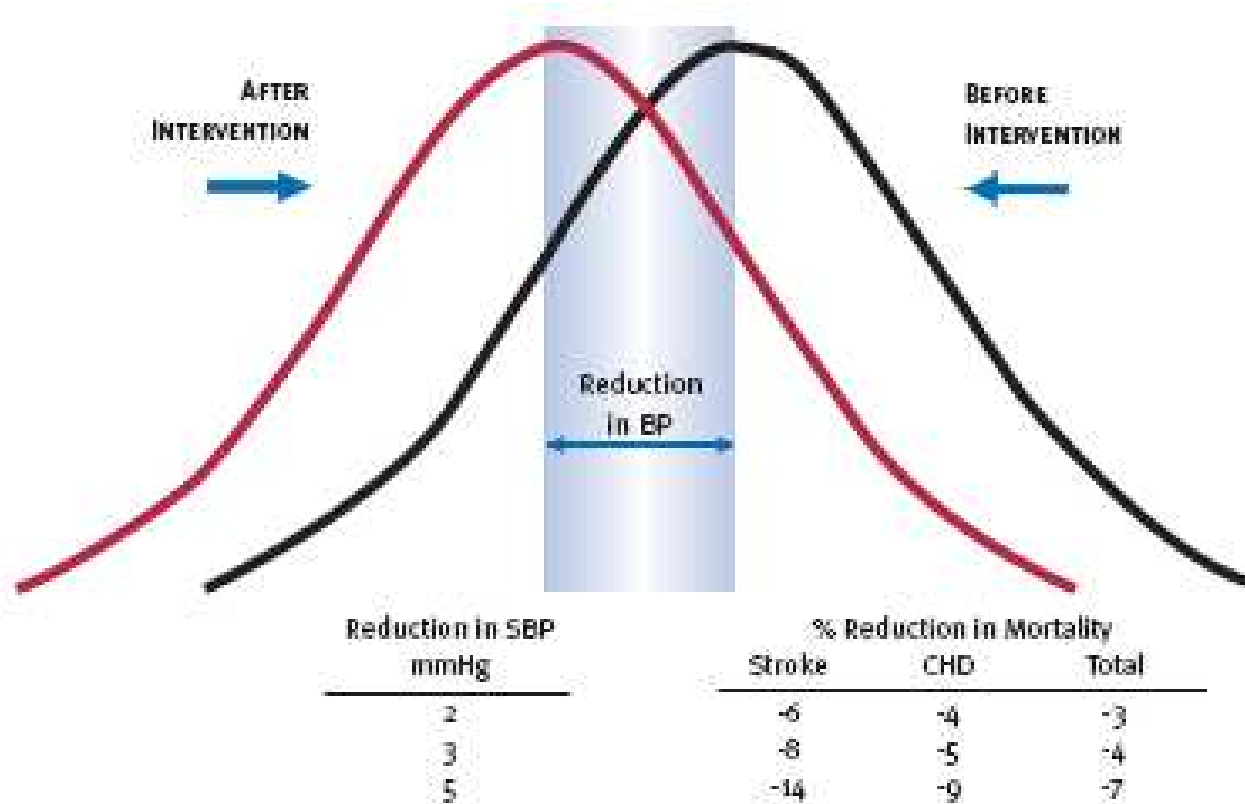


Effect of measurement error

- Misdiagnosis and mistreatment
 - We do not intervene when we should intervene
 - We intervene when we should not intervene
- This results in
 - Poorer outcomes
 - Added cost to the healthcare system



What will measurement error cause? 3)





The Risk

- All other sphygmomanometers are validated to moving columns of mercury
- All other sphygmomanometers have an error relative to moving columns of mercury
- The moving column of mercury is the basis of the longitudinal studies; it is the GOLD standard. It is the ONLY accurate way to diagnose hypertension
- Do you want to be responsible for the wholesale mistreatment of European citizens?



The Risk

- Mercury sphygmomanometers are an inconsequential source of mercury pollution
- What will it mean to ban mercury sphygmomanometers?
- The misdiagnosis and then the mistreatment of tens of millions of European citizens
- The premature death of many, many Europeans



Bibliography

- 1) National Institutes for Health, Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (ed 7), August 2004
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- 3) Whelton PK, et al. Primary prevention of hypertension: Clinical and public health advisory from the National High Blood Pressure Education Program, JAMA 2002;288:1882-8