



HCR 2.0: Making the SHIFT to a Culture of Health

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Essential Healthcare Information

Death of Ed Koch from Congestive Heart Failure – Was It Avoidable?

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I had met Ed Koch on a number of occasions including the time when he was a U.S. Congressman and we were both on a television program. Mr. Koch was a beloved New York City mayor who was not afraid of tackling controversial subjects.

I am going to raise a controversial subject, namely “Did Ed Koch receive the best treatment?” He was treated at the world famous Columbia Presbyterian MC ranked as the #1 hospital in the New York, New Jersey, Connecticut region. He had well recognized cardiologists managing his care.

In the past 6 months Mr. Koch had 4 admissions for congestive heart failure at the hospital. He was also closely monitored on an outpatient basis. On January 19, 2013, Koch was admitted to the hospital because he was [lethargic](#) and had swollen ankles. He was released on January 26. It was the third time in the previous six months he had been hospitalized. Two days after his release, he was readmitted into [New York–Presbyterian Hospital](#) after complaining of shortness of breath and fluid on his lungs. He was moved to the [Intensive-care unit](#) (ICU) on January 31. He died at approximately 2:00 a.m. on February 1, 2013 with a diagnosis of [congestive heart failure](#).

Medicare, as of January 1, 2013, is imposing financial penalties on hospitals that readmit patients within 30 days or less for heart failure. Columbia Presbyterian undoubtedly will receive such a penalty on its reimbursement rates for readmitting Mr. Koch.

The statistics for heart failure are very terrible. Many hospitals report death rates of 30 – 45% within one year for patients who are admitted for congestive heart failure.

The most fundamental derangement in congestive heart failure is the accumulation of excess water and sodium salt within the body. A major symptom of heart failure is the accumulation of fluid in the legs and lungs, which can make a person feel as if they are drowning. Mr. Koch was described as having fluid in his legs and lungs when he was admitted to the hospital for his third admission. Apparently his doctors felt comfortable enough with his progress to send him home on Saturday. A TV reporter said Mr. Koch had 16 lbs. of fluid removed. He told reporters he would be at work on Monday. Instead he was readmitted on Monday and died within 72 hours.



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A question that might be considered is “Did Mr. Koch receive optimum treatment?” He was at the leading hospital facility in the region. Its cardiology section is world famous for its advanced cardiac surgery. It might appear to be presumptuous to even question whether he had anything but optimum treatment.

Approximately 10 years ago the cardiology department at Columbia performed some landmark studies involving the measurement of blood volume utilizing the BVA-100 in Class III/Class IV cardiac patients. Congestive heart failure patients have 4 levels of gradations. Patients who are considered Class IV are the most seriously ill and have symptoms of shortness of breath while they are even at rest. Such patients are often candidates for a cardiac transplant, which are rarely available, or mechanical ventricular assist devices (VADs) which are implanted as secondary hearts into a patient. The hospital performed a two-year study involving 43 patients on their transplant or VAD waiting lists. They measured the blood volumes of these patients and also asked the experienced cardiologists to estimate, based on their standard laboratory tests and diagnostic procedures such as CAT scans and echocardiograms, whether these patients had a normal blood volume, an expanded blood volume, the usual state in untreated patients, or a shrunken blood volume. The experienced physicians were only correct 51% of the time in their estimates of what the patient’s blood volume status was and wrong 49% of the time.

Fundamental to The treatment of congestive heart failure are the use of powerful drugs called diuretics which block the ability of the kidney to absorb salt and water. Other drugs called vasodilators / are used relax the blood vessels so as to not overload the weakened heart’s pumping action. Diuretics may improve the patient’s symptoms by causing excess water to be excreted by the kidneys. Over treatment with diuretics, however, may shrink the patient’s blood volume to a point where kidney failure may be precipitated. The blood pressure may also collapse from excessive loss of volume.

Among the additional problems seen in heart failure patients is anemia. Heart failure patients are frequently put on anticoagulants which may cause subtle unrecognized bleeding. In the first study involving 43 patients, the blood volume measurements were taken but not used to direct therapy. At the end of one year 39% of the patients who still had an excessive blood volume, despite treatment, were dead. All of the patients who had a normal blood volume or slightly reduced blood volume were still alive. At the end of two years, when the study was completed, 57% of the patients who had an expanded blood volume were dead but all the pts with a normal blood volume were still alive.

The Guidelines of the American Heart Association/American College of Cardiology specifically state to treat to euvolemia (meaning a normal blood volume.) Koch had four admissions to Columbia Presbyterian Medical Center for congestive heart failure within 6 months. Was he treated to a normal blood volume before he was discharged? Ed Koch did not have a blood volume measurement performed on any of his four admissions. Despite the fact that the landmark studies documenting how inaccurate experienced physicians are in evaluating the blood volume derangements in congestive heart failure patients were performed at this institution, he never had this fundamental test performed. Further evidence of how inaccurate his physicians were in assessing his clinical status is that he was



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admitted to Columbia Presbyterian Hospital for seven days, apparently diuresed to have excessive fluid removed, and on discharge told well wishers he expected to be back in his office on Monday. In point of fact on Monday he was readmitted to the hospital and a day later moved to the ICU and within 72 hours of admission he died.

We do not know what the terminal cascade of medications he was treated with in the last 48 hours of his life, but they obviously did nothing to reverse the situation which apparently had worsened unexpectedly. Most likely the terminal event was a collapse of his circulation.

How could his physicians have misjudged his actual clinical status during the third admission days before his death? The basic reason is that patients who are treated on the basis of clinical impressions and guesstimates do not do well. Why is there a 25 – 40% death rate within the first year of admission for heart failure? The reason is that patients are not optimally treated. There is a great irony that the hospital which performed the first landmark studies validating the Guidelines of the American Heart Association does not perform blood volumes except for research purposes on congestive heart failure patients. Under-treatment for congestive heart failure predisposes a patient to death. Excessive treatment of heart failure with potent drugs also predisposes the patient to sudden death. In a life-and-death situation, patients should be treated with the most precise diagnostic tools available.

As the Medicare guidelines mandate financial penalties for readmission for congestive heart patients begins to impact hospitals, this may have a beneficial effect because it will cause hospitals to finally come to grips with the sub-par care and high death rates for congestive heart patients that have been routinely accepted.

Blood volume derangement is fundamental to the maladaptive changes in CHF patients. Patients should be treated on the basis of direct measurement and not guesstimates.