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Sophisticated technology is not a substitute for cognitive cardiology

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Improvements in the survival of patients with coronary heart disease (CHD) seen over the past three decades have been the result of aggressive early management of patients with acute coronary syndromes (ACS). In addition, the reduction of modifiable risk factors for CHD has caused a drop in the incidence of and complications associated with myocardial infarction (MI) in high-risk patients.

Improved knowledge of the pathogenesis of ACS, improved medications, and the introduction of new technology have all helped decrease CHD-related morbidity and mortality. Further improvements in applied technology are imminent. Coronary artery multislice CT with contrast is already used to evaluate patients with chest pain in the emergency department; cardiac MRI with excellent resolution can detect abnormal cardiac anatomy and is improving our understanding of atherothrombotic processes. A wide spectrum of cardiovascular diseases caused by genetic abnormalities are being defined further.

In the context of such extraordinary developments, over the past 10–15 years cardiology has splintered into many highly specialized disciplines and has become increasingly laboratory-focused, and less rooted in bedside evaluation. The need to expand the pool of cardiology specialists and subspecialists as a result of this fragmentation might, however, be controversial. Will these specialists have the time and appropriate training to evaluate the patient's overall physical and emotional state, before prescribing a specific new drug or technical procedure?

Current cardiovascular programs are producing fewer broad clinical cardiologists than ever before. Most trainees want to become expert in cardiac procedures and opt for additional months and years of such apprenticeship and relatively less time learning the most precious aspect of medicine—how to gain an 'insight' into the whole patient. Clinical and emotional insight are widely recognized as critical in successful evaluation and ultimately successful management.

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For example, following the introduction of CABG surgery in 1967 and of percutaneous coronary intervention (PCI) in 1977, myocardial revascularization is now often the initial therapy for many patients with coronary artery stenosis. Currently, PCI seems better than optimum medical therapy alone in patients with ACS, as demonstrated by reductions in recurrent MI and cardiac mortality. However, there is no proof that PCI provides additional benefits to truly optimum medical therapy and risk factor reduction in preventing MI and death during 5-year follow-up in patients with chronic stable angina and single-vessel or multivessel disease. An initial conservative approach is safe and will decrease the overall cost of treatment for many such patients. A consensus in revascularization is difficult to achieve, however, as it pertains to many patients with chest pain whom it is currently 'easier' to refer to a consultant for cardiac catheterization and PCI, even if at low risk, and often without full clinical and emotional assessment.

Two major drawbacks result from the fragmentation of cardiology. First, some physicians often fail to consider a conservative, noninvasive approach as their training and experience with this kind of strategy is more limited than previously, when trainees spent more time assessing patients outside technical laboratories. Second, the availability of technology could adversely affect the time and ability of cardiologists to fully understand the patient both clinically and emotionally.

The changes in education outlined here are a challenge for the American Board of Internal Medicine. Such dependence on costly technology is not necessarily good for patients who depend on our already variable system of health care delivery. Furthermore, technology cannot be a substitute for cognitive and preventive cardiology.

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Competing interests
The authors declared no competing interests.

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doi:10.1038/ncpcardio1007