

INTRODUCTION

Policy Forum: *Current Topics in Laboratory Medicine and Clinical Pathology*

Modern day medicine has become a very complex process that depends more and more on specific information about individuals. We are familiar with “tests” that assess the nature and content of our fluids, tissues, and physiological functions and recognize that these tests provide necessary information to ensure the best possible care. What we may not understand is how precise, sensitive, and complex those tests have become and how much the practice of health care has come to depend on these assays and evaluations. In fact, the volume and precision of information we can gather has brought us to the threshold of a new paradigm in health care where we are changing from a system in which diagnosis and treatment prevail to one in which prognosis is joined with treatment to anticipate the effects of interventions, even to anticipate the incidence and existence of disease.

One area of testing that has received perhaps more attention than others is genetic testing for susceptibility to disease. This line of work has evolved such that we are able to assess the overall disease susceptibility of the human genome for groups of people and for individuals in some cases. That work is controversial and raises ethical concerns for the bedside clinician, the laboratorian, and the policy makers who shape payment and information sharing rules. This issue of the *North Carolina Medical Journal* includes discussions of these consequences as well as the promise of the new technologies.

The location of testing has broadened from the hospital, clinic, or laboratory to the home or workplace. Diabetes monitoring and pregnancy testing are the most familiar in-home tests, but there are emerging tests for drug monitoring and other disease self-management. We are seeing intensive testing and screening efforts making use of health fairs, there are a range of tests available in “minute clinics” in pharmacies, health clubs and fitness centers are offering a range of tests, and shopping malls have become the location for testing centers or volunteer efforts that include taking samples. These new opportunities for testing may be seen as a “disruptive technology” that threatens the organization of medical care or as a chance to intervene more effectively in population health.

This issue of the *Journal* ventures into some quite technical areas such as nucleic acid amplification, karyotyping, mass spectrometry in proteomics, polymerase chain reaction, and flow cytometry. These may seem to be very complex and specialized parts of the world of pathology and laboratory medicine, but they are becoming more and more the workhorse components of day-to-day health care. These techniques and approaches will likely be so ubiquitous that the material covered in this issue of the *Journal* may become part of the standard vocabulary and knowledge base for all caregivers as well as patients in the not-to-distant future.

The goal of this issue of the *Journal* is to help the lay person as well as the broadest array of caregivers begin to understand how rapidly this field is developing and how it has the potential to bring even more change to clinical care and prevention of disease as we seek to give people healthier and happier lives.

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