

## Telehealth as an Everyday Tool

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At the University of Missouri, our long involvement in telemedicine has been motivated not only by academic curiosity but also by a very practical desire to find out whether and how telemedicine can help deliver better rural health care in the growing number of communities we serve. Although studies of focused applications are valuable, our questions involved the feasibility and value of telemedicine as a routine part of an actual rural health care system that handles a broad spectrum of everyday problems. Lack of physician acceptance in earlier projects suggested that, even when dealing with relatively established applications of telemedicine, the usability of such applications outside of narrowly focused demonstration projects was an open question. This abstract focuses not on the findings of specific studies but on the broader lessons we have learned about telehealth in everyday health care during the Rural Telemedicine Evaluation Project (RTEP).

When viewed from the perspective of a health care delivery system, telemedicine appears not as a new kind of health care but as a *medium* through which to deliver care (or to conduct related activities such as information searches). A basic question for us has been whether and how telemedicine can become a part of everyday health care.

### BARRIERS TO EVERYDAY TELEMEDICINE

For telemedicine to have a significant effect on a community's health care, it must obviously go beyond a few special applications and must be suitable for many of the tasks involved in everyday clinical work. Our overall assessment of telemedicine technology as the Missouri Telemedicine Network and RTEP developed was that the adequacy of telemedicine for many specific health care

tasks *had* been demonstrated. But it was very difficult to go beyond this. In projects delivered in typical U.S. civilian health care settings, physicians were not very enthusiastic about telemedicine, and utilization was low.

This is frequently explained in terms of barriers to telemedicine adoption. Many lists of telemedicine barriers have been published and use various terms, but they usually involve a few common themes. As the following discussion indicates, our assessment was that these factors were not good explanations for the low levels of adoption seen in most projects *so far*. We believe that is still the case today.

### LACK OF REIMBURSEMENT

There is no doubt that the lack of telemedicine reimbursement by the Health Care Financing Administration (HCFA) and others remains a serious problem, although at University of Missouri Health Care (UMHC) and in many other areas, most private insurers routinely pay for telecare. Several Health Resources and Services Administration projects, including the one at UMHc, provided reimbursement when HCFA would not. The elimination of reimbursement constraints has not made it noticeably easier to advance adoption of these projects. Of course, reimbursement could become a very serious barrier, but not until we reach it. It cannot explain the slow progress made so far.

### MEDICOLEGAL ISSUES SUCH AS LICENSURE

Video telemedicine raises difficult medicolegal questions, but they have been successfully dealt with in some projects without having any apparent effect on the pace of adoption. These medicolegal issues are far from trivial, but they could not be telemedicine's immediate problem.

## PHYSICIANS ARE RESISTANT TO CHANGE AND AVERSE TO NEW TECHNOLOGY

This idea is not uncommon in telemedicine articles and presentations, but it would be difficult to find a profession that experiences new technology and other major changes with the speed and relentlessness seen in medicine.

## TELEMEDICINE SYSTEMS ARE NOT USER FRIENDLY ENOUGH

If the problem is not the physicians, maybe the problem lies with the equipment. Physicians and other health professionals, like anyone else, appreciate well-designed user interfaces. However, user interface defects alone could not explain the indifference of most providers to telemedicine. Most of these providers never become involved enough to care about the interface.

## CLINICIANS AND MANAGERS NEED FIRM EVIDENCE OF ITS VALUE

Perhaps this should be true, but health care in the United States does not always work that way. This is no argument against sound research, but we have managed to impose this requirement only on clinical interventions and medical devices and then imperfectly. The record is clear that innovations can be adopted and important variations in care tolerated, without the need for meaningful research findings to justify them. In the real world of U.S. health care, a lack of evidence could not be the main reason for telemedicine's slow adoption.

## PROVIDER INVOLVEMENT

One other factor frequently mentioned as the key to adoption is the involvement of clinicians in the development of telemedicine projects. Such involvement is clearly indispensable. Yet UMHC and several other projects did have extensive and genuine provider involvement from the beginning and faced the same struggles as the others. Like the other barriers mentioned above, this important factor

could not explain the prevalent pattern of slow adoption.

## INCENTIVES AND INTEGRATION

If these reputed barriers to the adoption of telemedicine do not explain its slow adoption, then what does? Our experience with RTEP suggests that two interrelated factors are the keys. These factors relate not to the question of why providers would *reject* telemedicine (the barriers) but to the question of why they would *use* it.

The first of these factors has to do with the incentives that operate on an individual provider. For video telemedicine, there is rarely any immediate advantage to the provider. As for telemedicine applications using information resources to help clinicians make better decisions in real time during clinical care, or even to answer those questions later, the situation is similar. Few providers, evidently, have a compelling reason to abandon old tools that meet their perceived needs, whatever we may think of those tools.

A lack of telemedicine incentives does not necessarily explain why a provider would avoid telemedicine, but it does explain the importance of a second key factor. If a given form of telemedicine is not integrated seamlessly into a provider's work—if it creates even a little inconvenience or delay—there is little reason to expect her to use it.

The major barrier to telemedicine adoption by clinicians, given the incentives and disincentives involved, is simply that it is usually too much trouble. It requires too much deviation from existing routines. Of course, we knew from the beginning that telemedicine should be as convenient as possible, but that is very different from saying that it must involve virtually no change in a clinic's usual routines. We have come to believe that a telemedicine application is unlikely to become a mainstream tool unless it is integrated into the routines of clinicians *and* their office staffs in an almost seamless manner.

We concluded that effective telemedicine integration would usually have the following features:

- When an application provides an alternative way to complete a task (e.g., an examination of a patient or answering a clinical question), it must work as well as the alternative in a large percentage of the instances in which it is used. The critical level probably approaches 80 percent.
- A telemedicine tool must be engineered seamlessly into administrative functions such as scheduling, medical record-keeping, and billing.
- A telemedicine tool must be readily available at the times and places a provider would use the standard alternatives.

This approach is more specific and operational than the conventional wisdom that telemedicine has to be user friendly and convenient, which begs the questions of *how* user friendly and *how* convenient. The point is not that these criteria are the only important issues in telemedicine but that, whatever other issues are resolved, a telemedicine application implemented in any other way has little chance of being mainstreamed under today's circumstances.

This line of reasoning runs counter to the more visionary perspective often evident in presentations about telemedicine's potential, in which telehealth is portrayed as a critical catalyst for major changes in health care delivery. Such visions seem betrayed by an approach that insists on a slavish reproduction by telemedicine applications of existing procedures and workflow. But the two perspectives are not entirely at odds. There is little question that digital technology will reshape health care, but not because of telemedicine. This is being driven by economic and regulatory forces. Telemedicine's capacity to improve care will only increase with these changes.

In the meantime, however, there are people in underserved communities who need today's plain old nonvisionary health care, and our capacity to help them through telemedicine is directly related to our ability to integrate telemedicine into today's clinical routines.

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