

State Mental Health Authorities and Informatics

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As state mental health authorities (SMHAs) attempt to promote evidence-based practices within their systems of care, they often ignore the enormous potential of information technology. Most of the tasks that Charles Rapp and colleagues have expertly identified in the preceding article can be addressed more efficiently with computerized approaches than with traditional approaches to education, implementation, training, and quality assurance. Because mental health lags behind the rest of medicine in instituting electronic medical records and related information technology, SMHAs often overlook the potential of informatics. In this article, we outline the advantages of using informatics to promote evidence-based practices, describe the current barriers to using informatics in this way, and suggest several strategies for SMHAs.

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ADVANTAGES OF COMPUTERIZED INFORMATICS

Addressing quality is difficult or impossible without legible, standardized, relatively complete, and valid data on assessments, services, and outcomes. The lack of valid, routinely collected data on outcomes is the most frequently cited challenge to improving health care (Young, Mintz, & Cohen, 2004). For a variety of reasons, such as missing or inaccessible information, the use of hand-written medical records for quality assurance has proved grossly inadequate. Administrative data, such as Medicaid records, are computerized but omit key outcomes and are slow to access, cumbersome to use, and not practical for routine quality assurance.

Electronic medical records offer the potential to provide standardized data on assessments, service use, and outcomes in real time (Freedman, 2003). Clinicians and/or clients can input accurate, relevant, and usable data. Records can become more accessible across providers, disciplines, integrated treatment teams, different agencies, and even geographically distant providers or programs. Accuracy, consistency, and efficiency can be enhanced by standardized questions, categories, and formats.

Quality can be addressed continuously, by inserting decision supports within the electronic record, to reduce errors and to enhance the use of scientific guidelines (Dexter et al., 2001). One commonly cited example is the use of automatic checks on medication prescriptions, which can reduce numerous types of errors, including the failure to recognize dangerous medication interactions, incorrect dosing, and inappropriate medications. Checking for medication errors is, however, only the simplest quality assurance mechanism. Computerized checks, decision rules, and other "smart systems" can be used to detect deviations from practice guidelines and to help practitioners implement such guidelines. Further, computerized decision support systems can be used to provide rapid access to current scientific information and to help practitioners with difficult diagnostic, testing, and treatment decisions. For example, computerized decision supports have been shown to help infectious disease doctors to prescribe antibiotics more accurately, resulting in more rapid recovery from bacterial infections (Evans et al., 1994). With the advent of genomics and related risk adjustment, prescribing interventions accurately may rapidly become too complex for any clinician to calculate without decision supports.

Educating the workforce can be built into the electronic records to enhance efficiency, accuracy, and continuity. For example, clinicians

can be guided to assess clients appropriately for suicide risk, to document the assessment, and to consider appropriate interventions. Millions of dollars are spent currently on didactic training and continuing education with little benefit (Davis et al., 1995). Educational materials attached to electronic medical records can be available in relevant situations in order to enhance clinician education while also improving quality.

Electronic records can also be used to enhance client participation in assessment, education, and self-management of chronic illness. For example, patients with life-threatening diseases, such as HIV, cancer, and heart disease, can successfully use personal computers to reduce hospitalizations and improve quality of life (Gustafson et al., 1999).

For administrators, electronic records offer the potential for easy access to outcome data aggregated by clinic, clinician, diagnosis, or other categories. Decisions regarding allocation of resources, contracts, training, finances, and so forth could be tied to valid data.

Electronic information systems also have some potential to reduce costs in different areas: assessment, education, decision supports, outcome monitoring, efficient care, and so forth. For example, clients in medical clinics can input information themselves regarding current adjustment and problems before meeting with a health care professional, thereby saving time and improving the quality of care.

BARRIERS TO INFORMATION TECHNOLOGY

Since the technology is available, and since electronic information systems have potential to reduce errors, improve the quality of decisions, educate clinicians and clients, improve outcomes, and reduce costs, why are they not currently used? First and foremost, cultural change is an enormous challenge (Lyons et al., 2005). Changing clinical culture requires commitment, leadership, investment, persistence, and continued attention over time. Because of the up-front costs and many sources of resistance, re-orienting a system of care must be based on a long-term rather than short-term vision.

Second, implementing electronic information systems requires a clear emphasis on quality of care rather than on political, regulatory, and financing exigencies. Unfortunately, these latter considerations usually dominate SMHAs and agency administrators.

Third, successful use of information technology in a mental health system will require a common language and agreement on definitions

and data elements. Tribal warfare over such decisions has impeded standardization of health records for decades.

Fourth, to be useful, information technology needs to facilitate clinical decision making, as opposed to reflecting the thinking process, fascination with new technology, or algorithms that appeal to computer specialists. Electronic records designed by non-clinicians often fail because they conflict with the normal flow of clinical care and are experienced as interfering with clinical decision making.

THE STATE MENTAL AUTHORITY'S ROLE

SMHAs can facilitate the adoption of information technology in several ways, such as leadership, education, standardization, and technology transfer. The most important SMHA role is leadership. The largest health care system in the U.S., the Veteran's Administration health system, has instituted electronic medical records already, through consistent leadership, and has thereby launched numerous initiatives to improve quality, including in mental health (Young, Mintz, Cohen, & Chinman, 2004). Top-down decision making is less feasible in state mental health systems, for a variety of reasons, and in most states, a single information system would be impractical because local agencies have already instituted a variety of commercial systems for billing and regulatory purposes.

Given this context, SMHAs could intervene most effectively by rallying attention and convening participation around critical issues, and through setting standards and allocating resources for system transformation. In order to ensure that the benefits of advances in health information technology are universally available to the population, SMHAs will need to establish the legitimacy of investing in basic connectivity and local information technology and in the ongoing human resource development that is essential to realizing the potential inherent in the technology. Even with this approach, however, SMHAs will typically lack sufficient internal capacity in resources and expertise either to adequately inform the central vision or to provide the detailed guidance to steer the process, and they will need to link to outside resources.

Some existing initiatives with federal sponsorship can support progress in this area. Related to its overall Mental Health Statistics Improvement Program (<http://www.mhsip.org/>), the Substance Abuse and Mental Health Services Administration (SAMHSA) Center for

Mental Health Services has been sponsoring a project to develop standards for mental health information systems: Decision Support 2000+ (<http://www.mhsip.org/ds2000/backgroundstatement1.pdf>). This project is developing both data standards and infrastructure for decision support to improve quality of care. Standards have been or are being developed for all major data types and capacities for this kind of system, including outcome monitoring. Infrastructure development includes a web-based system that can either provide a minimal system for organizations with limited resources or be integrated with separate systems. The initiative is designed not to replace existing private-sector systems but to inform directions for needed commonality. It is expected to incorporate the products of related projects, including the MHSIP Quality Report and another SAMHSA-sponsored effort to develop common performance measures (Teague, Trabin, & Ray, 2004). A more recent initiative would establish a public/private partnership to address challenges in behavioral health information technology more broadly, including health records, quality management, practitioner education, consumer participation, and development of consumer-based longitudinal health records.

In the process of moving toward informatics to improve evidence-based practices, SMHAs must provide leadership, standardization, training, decisions support systems, and resources. To achieve success, they must also insure that their efforts improve clinical care and efficiency rather than increase burden at the local level.

REFERENCES

- Davis, D. A., Thomson, M. A., Oxman, A. D., et al. (1995). Changing physician performance: A systematic review of the effect of continuing medical education strategies. *Journal of the American Medical Association*, 274, 700–705.
- Dexter, P. R., Perkins, S., Overhage, J. M., et al. (2001). A computerized reminder system to increase the use of preventive care for hospitalized patients. *New England Journal of Medicine*, 345, 965–970.
- Evans, R. S., Classen, D. C., Pestotnik, S. L., et al. (1994). Improving empiric antibiotic selection using computer decision support. *Archives of Internal Medicine*, 154, 878–884.
- Freedman, J. (2003). The role of information technology in evidence-based practice. *Psychiatric Clinics of North America*, 26, 833–850.
- Gustafson, D. H., Hawkins, R., Bober, E., et al. (1999). Impact of a patient-centered, computer-based health information/support system. *American Journal of Preventive Medicine*, 16, 1–9.
- Lyons, S. S., Tripp-Reimer, T., Sorofman, B. A., DeWitt, J. E., BootsMiller, B. J., Vaughn, T. E. & Doebbleing, B. N. (2005). VA QUERI Informatics Paper. Information technology for clinical guideline implementation: Perceptions of multidisciplinary stakeholders. *Journal of the American Medical Informatics Association*, 12, 64–71.
- Substance Abuse and Mental Health Services Administration. Web sites: <http://www.mhsip.org/> and <http://www.mhsip.org/ds2000/backgroundstatement1.pdf>.
- Teague, G. B., Trabin, T. & Ray, C. (2004). Toward common performance indicators and measures for accountability in behavioral healthcare. In A. R. Roberts, & K. Yeager (Eds.),

- Evidence-based practice manual: Research and outcome measures in health and human services* (pp. 46–61). Oxford University Press, New York.
- Veteran's Health Administration, 2004.
- Young, A. S., Mintz, J. & Cohen, A. N. (2004). Using information systems to improve care for persons with schizophrenia. *Psychiatric Services*, *55*, 253–255.
- Young, A. S., Mintz, J., Cohen, A. N. & Chinman, M. J. (2004). A network-based system to improve care of schizophrenia: The Medical Informatics Network Tool (MINT). *Journal of the American Medical Informatics Association*, *11*, 358–367.

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