Online Case Study
www.longwoods.com

New Additions to the Case Study Library

Photo credit: Media Source. Photo is retouched.

Linking Health Services at the Community Level

Ronald Lagoe, Theodore Pasinski, Paul Kronenberg, Thomas Quinn and Phillip Schaengold

Abstract

This study describes a series of interventions linking hospitals, medical staff physicians, long-term care providers and mental health services in the metropolitan area of Syracuse, New York. The objectives of these interventions were to improve patient outcomes and system-wide efficiency. The study demonstrated that these linkages, including system-wide data feedback, contributed to limitation of emergency department overcrowding, reduction of physician lengths of stay, elimination of duplication of medical staff credentialing, as well as access to and efficiency of long-term care and mental health services.

Introduction

The benefits of cooperation among organizations in order to improve healthcare within communities and regions are receiving increased attention. In many areas of the world, a recognition has developed that competition in healthcare has limited potential. This view has opened the way for renewed efforts at collaboration (Gift et al. 2002).

Approaches to healthcare cooperation at the community level span a wide continuum. In recent years, broad coalitions of consumers and providers have emerged in some areas (Nicola 2005; Lasker and Weiss 2003). By including representatives from these groups, such coalitions have been able to address issues relating to public health, preventive care and the development of trust between consumers and providers (Bilton 2005; Olden 2003). At the same time, these coalitions have been of limited value in addressing specific healthcare issues.

At the other end of the spectrum, approaches to healthcare collaboration at the community level have been developed to address specific diagnoses or types of care. These initiatives have frequently involved areas of care that cross settings, such as advance care planning and HIV (Marchand et al. 2005; Metayer et al. 2004). These coalitions have the advantage of being able to mobilize clinical expertise in specific areas of care, but their effectiveness can be limited to these diagnoses or types of care.

This study involved a community-wide approach to collaboration involving hospitals, physicians, nursing homes, home health agencies and mental health services. By focusing on providers of care in these areas, it generated improvements in outcomes and efficiency in a single metropolitan area.

Interventions

This case study describes a series of interventions implemented in the metropolitan area of Syracuse, New York. This area includes the City of Syracuse and Onondaga County with an estimated population of 451,366 (2005). The four general hospitals of Syracuse serve as the referral centre for the Central New York Health Service Area, population 1,420,286 (2005).

The acute care system of the Syracuse area includes University Hospital of the State University of New York Upstate Medical University (16,943 discharges – 2005), St. Joseph's Hospital Health Center (24,680 discharges), Crouse Hospital (21,992 discharges) and Community General Hospital (10,510 discharges). The hospitals are staffed by 1,541 medical staff physicians and over 10,000 employees. Historically, these competing hospitals have developed cooperative programs through the Hospital Executive Council.

The healthcare system of the Syracuse area includes a full range of emergency medical services. The largest of these is Rural Metro Medical Services, which covers the City of Syracuse. The network also includes 35 additional ambulance units and the four hospital emergency departments. During 2005, the four hospital emergency departments served 41,422 ambulance transports and 181,851 visits.

The long-term care system of the Syracuse metropolitan area includes 13 nursing homes and five certified home health agencies. The nursing homes contain a total of 3,107 beds.

This case study focused on development and implementation of a series of projects to improve the outcomes and efficiency of care. Those projects involved linkage of the following components of the system:

Emergency Medical Services and Hospitals
Hospitals and Medical Staff Physicians
Hospitals, Nursing Homes and Home Health Agencies
Hospitals and Psychiatric Services

Methodology by Area

Each of the community-wide objectives focused on a specific objective. Each involved the coordination of specific community resources across particular healthcare settings.

Emergency Medical Services and Hospitals

Historically, the four Syracuse hospitals have alleviated emergency department overcrowding through a system of ambulance diversion. The objectives of this system have been to maintain or improve patient outcomes while supporting system efficiency.

Ambulance diversion allows each emergency department to go on diversion when it is at or near the maximum capacity of available resources. When an emergency department is on diversion, all ambulances are diverted to other acute care facilities except those that require services only available at a given hospital, such as a trauma centre, and those transports whose patients demand a specific facility. All ambulances are diverted at point of dispatch by the two agencies in the community that perform this function. When all four emergency departments are on diversion, incoming ambulances are rotated among the hospitals (Lagoe et al. 2002).

The ambulance diversion system is operated through a single software program, the EMSystem. This software links all of the hospitals, the two dispatching agencies and the Hospital Executive Council, which is responsible for its operation (Lagoe et al. 2003).

Ambulance diversion has provided a valuable mechanism for coordination of emergency medical services among the Syracuse hospitals. During the 1990s, use of this mechanism increased. By 2000, the hospitals generated a combined total of 11,398 hours on ambulance diversion. This amounted to 32.5% of the total time available.

Since that time, the Syracuse hospitals have worked to reduce emergency department hours on ambulance diversion using this mechanism for data feedback. These efforts have included distribution of daily reports by the Hospital Executive Council to administrators throughout the system and implementation

Nursing homes agreed to increase admission of difficult to place patients, largely those with multiple chronic diagnoses, from hospitals. The hospitals agreed to increase the identification of patients attractive to nursing homes, largely those with extensive rehabilitation potential or private reimbursement, early in their hospital stays.

of specific operational initiatives by individual hospitals. The emergency medical services reports include numbers of hours on ambulance diversion, ambulance transports and emergency department visits for each hospital for the previous seven days.

Hospitals and Medical Staff Physicians

The Syracuse hospitals have developed community-wide projects with medical staff physicians. The objectives of these projects have been to improve the outcomes and efficiency of care for patients and to increase the accuracy and efficiency of medical staff credentials.

Length-of-stay reduction has been a major focus of community-wide efforts involving physicians. The combined medical staffs of the Syracuse hospitals include 1,541 physicians. Approximately 1,000 of these physicians have responsibility for lengths of stay and discharge orders involving hospital inpatients. An analysis conducted in 2001 demonstrated that the combined medical-surgical length of stay of the Syracuse hospitals (6.2 days) was 1.2 days longer than the severity-adjusted national average (5.0 days). This unit difference was producing 56,358 excess inpatient days annually (Lagoe et al. 2005b).

In order to address this issue, the Hospital Executive Council developed a system of physician profiling for each of the hospital medical staffs. This system involved the development of quarterly hospital-specific profiles for each physician with at least five medical-surgical discharges. Two formats were used in the profiles. One compared the physician's mean medical-surgical lengths of stay with the severity-adjusted national mean at total and DRG specific levels. The other compared the physician's stays with the severity-adjusted national mean for total discharges and for individual severity of illness categories.

Physician profiles were developed and distributed by the Hospital Executive Council on a quarterly basis beginning in 2002. The Council and individual hospitals have provided assistance in interpreting the data to physicians. Numbers of physicians at each hospital with stays longer and shorter than the national averages have been monitored on a quarterly basis.

The physician credentials program of the Syracuse hospitals involved the development of a single point of entry for credentials data in order to improve the completeness of this information and to improve the efficiency of providing it. The system required the development of uniform delineation of privileges forms for each of the 16 clinical departments across the four hospitals. It also required assigning each of the 1,541 medical staff physicians to a single reappointment period. Over 70% of the physicians have medical staff appointments at more than one hospital.

The credentials system also includes license New York State License Registration, Drug Enforcement Administration registration, Annual Health Assessments and Continuing Medical Education forms. The system also provides information concerning demographics and practice information of physicians for the community.

The development of uniform delineation of privileges forms occurred over a three-year period. Operation of the credentials system began in 1997. It is administered by a full-time Medical Staff Coordinator at the Hospital Executive Council. The Coordinator is responsible for distribution and collection of forms and for assuring completeness of the information that is submitted.

Hospitals, Nursing Homes and Home Health Agencies

Historically, the hospitals and long-term care providers of the Syracuse metropolitan area have worked to improve the movement of patients between these levels of care. Much of this activity has focused on the care of elderly patients with chronic disorders. Limitations in access to long-term care for this group have caused overcrowding in hospitals and reduced access to hospital emergency departments.

In order to address this subject, the hospitals and long-term care providers of the Syracuse area have implemented a series of programs. The most important of these is the System Efficiency Project, initiated in 2002. It involves two components. Nursing homes agreed to increase admission of difficult to place patients, largely those with multiple chronic diagnoses, from hospitals. The hospitals agreed to increase the identification of patients attractive to nursing homes, largely those with extensive rehabilitation potential or private reimbursement, early in their hospital stays (Lagoe et al. 2005a).

The System Efficiency Project is supported by data distributed among hospitals, nursing homes and home health agencies. Difficult to place patients are identified by the hospitals. A list of these patients, with identifications removed including care

needs, is distributed to each nursing home and home health agency in the community by the Hospital Executive Council twice each week. Monthly summaries of numbers of difficult to place patients and rates of these patients per total admissions are also distributed to all long-term care providers. Lists of attractive patients are provided to nursing homes and home health agencies by individual hospitals.

The movement of patients between acute care and long-term care in Syracuse has also been supported by the development of a series of subacute programs for patients whose access to post-acute services has been compromised. These include programs for Intravenous Therapy, High Cost Oral Medications and Extensive Wound Care. The subacute programs were developed by the Hospital Executive Council and the Long Term Care Executive Council beginning in 2002.

Support for the subacute programs has been provided by the Syracuse hospitals in the form of staff training for nursing home staffs and program development funds for implementation expenses. Program development funds are provided from community-wide pools maintained by the Hospital Executive Council.

Hospitals and Psychiatric Services

The need for access to psychiatric emergency and inpatient services has been a concern of the healthcare system of the Syracuse metropolitan area. The objectives of community-wide activities in this area are to support patient care and existing providers.

In the Syracuse area, inpatient psychiatric services are provided by three general hospitals (Community General Hospital, St. Joseph's Hospital Health Center and University Hospital) that operate a total of 80 beds. Hutchings Psychiatric Center, a large state-sponsored facility, operates an additional 129 psychiatric beds. Many of the admissions to these units are referred by the Community Psychiatric Emergency Program (CPEP), the area's only psychiatric emergency department. During 2001, the three general hospitals assumed collective sponsorship of CPEP after St. Joseph's Hospital Health Center was no longer able to sustain the facility's operating deficits alone.

At the time the psychiatric emergency department transitioned to multihospital sponsorship, it was agreed that operation of psychiatric services in the system should be supported by daily utilization reports. Initiated in 2002, these reports have included the CPEP census and breakdowns of referrals to inpatient programs by destination. The reports also include the average daily census of each inpatient psychiatric unit, as well as numbers of admissions and discharges. The reports have been developed and distributed by the Hospital Executive Council each business day and include the previous seven days' utilization.

In August 2005, the daily reports were expanded to include detailed information on each referral from CPEP that was not accepted. This information has included the provider receiving the referral, the name of the staff member contacted and the reason that the referral was not accepted.

Results

The evaluation of the community-wide programs in the Syracuse metropolitan area focused on data for each project. Data for the intervention involving emergency medical services and hospitals are summarized in Table 1.

This information identified two different trends in emergency department utilization in Syracuse: a 31.7% decline in ambulance diversion between 2001 and 2004 and a 72.0% increase between 2004 and 2005. Each of these trends was

Table 1. Emergency department utilization, Syracuse hospitals, 2002-2005

	Hours on Ambulance Diversion					Percent Difference	
	2001	2002	2003	2004	2005	2001-2004	2004-2005
Community General Hospital	1,341	552	278	247	1,230	-81.6	398.0
Crouse Hospital	1,725	1,115	1,630	1,434	2,327	-16.9	62.3
St. Joseph's Hospital Health Center	2,261	1,546	1,898	2,200	3,286	-2.7	49.4
University Hospital - SUNY UMU	3,350	2,375	2,742	2,047	3,356	-38.9	63.9
Total	8,677	5,588	6,548	5,928	10,199	-31.7	72.0
	Ambulance Transports					**Percent Difference**	
	2001	2002	2003	2004	2005	2001-2004	2004-2005
Community General Hospital	4,886	4,955	5,660	5,421	6,366	10.9	17.4
Crouse Hospital	9,681	9,495	8,976	9,465	10,414	-2.2	10.0
St. Joseph's Hospital Health Center	11,285	13,190	13,441	13,621	13,897	20.7	2.0
University Hospital SUNY UMU	7,941	8,852	8,910	10,304	10,745	29.8	4.3
Total	33,793	36,492	36,987	38,811	41,422	14.8	6.7

Source: Hospital Executive Council data.

Table 2. Percent of Medical / Surgical Physicians with Lengths of Stay At or Shorter Than Severity Adjusted National Averages, Syracuse Hospitals, January 2002 - September 2005

	2002	2003	2004	2005	02-05 Diff.
Community General Hospital	30.8	50.6	60.9	63.1	32.3
Crouse Hospital	44.2	48.9	58.8	62.5	18.3
St. Joseph's Hospital Health Center	51.7	59.3	62.1	62.7	11.0
University Hospital - SUNY UMU	48.6	57.4	59.4	65.0	16.4
Total	45.3	54.7	60.4	63.3	18.0

Includes medical/surgical discharges for physicians with at least 5 discharges per quarter. Excludes discharges to nursing homes.
Sources: New York Statewide Planning and Research Cooperative System (SPARCS); National Hospital Discharge Study.

Table 3. Difficult to place and alternate care nursing home placements, Syracuse Hospitals, 2002-2005

	2002	2003	2004	2005
Difficult to Place Admissions including Alternate Care	822	874	765	880
Total Non-difficult to Place from Hospitals	3,840	4,505	5,288	5,661
Total New Admissions from Hospitals	4,662	5,379	6,053	6,541
Difficult to Place Admission Rate*	17.6	16.2	12.6	13.5
Mean Hospital Length of Stay (Days)**	11.1	10.0	8.9	8.9
Discharges to Nursing Homes				

* Changes in the difficult to place admission rate were Not significant .05 level.
** Changes in the hospital mean length of stay were significant .05 level.
Source: Hospital Executive Council data.

system-wide. All four hospitals experienced declines in hours on diversion between 2001 and 2004. All four experienced increases in diversion between 2004 and 2005.

Evaluation of the data and conversations with hospital staff suggested that these developments occurred within the parameters of staff resources. Between 2001 and 2004, increased numbers of transports could be accommodated by existing emergency department and nursing staffs. During 2005, the increased care needs of the additional transport volume exceeded staff capabilities and generated substantial additional diversion hours.

Data for the intervention concerning physician length-of-stay profiling in hospitals are summarized in Table 2. This information demonstrated that, between 2002 and 2005, the distribution of quarterly severity-adjusted length of stay profiles was associated with reductions in physician stays among hospital medical staffs in Syracuse. At the community-wide level, the percent of physicians with stays at or shorter than severity-adjusted national averages increased from 45.3 to 63.3%. Increases for individual hospitals ranged from 11.0 to 38.3 percentage points. These changes reduced the mean medical-surgical stay for the combined hospitals from 6.2 to 5.4 days.

The physician credentialing program also produced substantial improvements in the efficiency of this process among the Syracuse hospitals. Available data indicated that the single point of entry for forms has reduced the total volume of credentials documentation required for medical staff physicians by 50.1%. It has also eliminated duplication in the assurance of completeness and accuracy of existing forms.

Data for the intervention involving hospitals, nursing homes and home health agencies in the Syracuse metropolitan area are summarized in Table 3. This information demonstrates that, since the implementation of the System Efficiency Project, in 2002, and the subacute programs that followed, the number of difficult to place patients admitted annually to nursing homes increased by 58, or 7.1%. During the same period, the number of non difficult to place patients admitted to nursing homes each year increased by 1,821, or 47.4%. Additional data indicated that 192 Intravenous Therapy patients, 112 High Cost Oral Medication patients, and 19 Extensive Wound Care patients were placed in nursing homes through the subacute programs during this period.

These trends indicated that the System Efficiency Project was producing additional discharges of chronic care patients for the hospitals and generating increased admissions of attractive patients for the nursing homes. Follow-up studies are identifying opportunities for extension of these programs.

Evaluation of the intervention involving mental health services focused on access to and efficiency of care between the psychiatric emergency department and inpatient hospital psychiatric services. Data provided from daily reports demonstrated that the percent of referrals from CPEP accepted by the hospital units increased from 21.0 to 12.9 between 2002 and 2005. After the implementation of detailed reports concerning unaccepted transfers, in August 2005, the number per month declined from 31 to 18.

Discussion

This study described the development and impact of a series of interventions for linking healthcare services at the community level. The system it describes is located in Syracuse, New York, but it could be in Canada or Europe or Asia.

The study demonstrated that each of the linkages between healthcare providers was developed to improve the outcomes and efficiencies of care. These objectives varied from limitation of emergency department overcrowding, to reduction of physician lengths of stay, to elimination of duplication of physician credentials, to improvement of access to long-term care and mental health services. Each initiative had a clear objective. Each was developed with a mechanism for frequent data feedback.

The results of this study suggested that each of these community-based linkages of healthcare services has been successful to varying degrees. Experience with these interventions in Syracuse indicates that this success was based on clear objectives and frequent data feedback. It has also been based on simplicity and the minimal expenses associated with each. Another positive influence has been the accountability of a community-wide organization for the implementation intervention.

It should be emphasized that there are limitations on the effectiveness of this type of community-wide intervention. They can coordinate resources, but not produce them, as the experience with ambulance diversion demonstrates. Still, these linkages can provide a workable model for local health systems to improve the outcomes and efficiency of care in their own communities.

References

Bilton, M. 2005. "Seeing Community Benefit Broadly. 2005. Everybody Wins When Hospitals Collaborate with Others to Improve Their Communities." *Health Progress* 86(4): 39–43.

Gift, T.L., R. Arnould and L. DeBrock. 2002. "Is Healthy Competition Healthy? New Evidence for the Impact of Hospital Competition." *Inquiry* 39(1): 45–55.

Lagoe, R.J., J. Dauley-Altwarg, S.E. Munich and L.M. Winks. 2005a. "A Community-wide Program to Improve the Efficiency of Care between Hospitals and Nursing Homes." *Topics in Advanced Practice Nursing* 5(2).

Lagoe, R.J., R.C. Hunt, P.A. Nadle and J.C. Kohlbrenner. 2002. "Utilization and Impact of Ambulance Diversion at the Community Level." *Prehospital Emergency Care* 6: 191–98.

Lagoe, R.J., J.C. Kohlbrenner, L.D. Hall, M. Roizen, P.A. Nadle and R.C. Hunt. 2003. "Reducing Ambulance Diversion: A Multihospital Approach." *Prehospital Emergency Care* 7: 99–108.

Lagoe, R.J., G.P. Westert, K. Kendrick, G. Morreale and S. Mnich. 2005b. "Managing Hospital Length of Stay Reduction: A Multihospital Approach." *Health Care Management Review* 30(2): 82–92.

Lasker, R.D. and E.S. Weiss. 2003. "Creating Partnership Synergy: The Critical Role of Community Stakeholders." *Journal of Health and Human Services Administration* 26(1): 119–39.

Marchand, L., K.J. Fowler and O. Kokanovic. 2003. "Building Successful Coalitions to Promote Advance Care Planning." *American Journal of Hospital Palliative Care* 22(6): 437–41.

Metayer, N., E. Jean-Louis and A. Madison. 2004. "Overcoming Historical and Institutional Distrust: Key Elements in Developing and Sustaining the Community Mobilization against HIV in the Boston Haitian Community." *Ethnic Diseases* 14(3 Supplement 1): S46–52.

Nicola, R.M. 2005. "Turning Point's National Excellence Collaboratives: Assessing a New Model for Policy and System Capacity Development." *Journal of Public Health Management and Practice* 11(2): 101–8.

Olden, P.C. 2003. "Hospital and Community Health: Going from Stakeholder Management to Stakeholder Collaboration." *Journal of Health and Human Services Administration* 26(1): 35–57.

About the Authors

Ronald Lagoe, PhD, Executive Director, Hospital Executive Council, Syracuse, New York. E-mail: hospexcl@cnymail.com

Theodore Pasinski, MBA, President, St. Joseph's Hospital Health Center, Syracuse, New York.

Paul Kronenberg, MD, President, Crouse Hospital, Syracuse, New York.

Thomas Quinn, MBA, President, Community General Hospital, Syracuse, New York.

Phillip Schaengold, JD, MBA, Chief Executive Officer/Senior Associate Dean for Hospital Affairs, University Hospital – SUNY UMU, Syracuse, New York.

Research. Evidence. Dissemination.
www.healthcarepolicy.net