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SPECIALTY CARE ACCESS
EVALUATION

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IMPACT OF THE SPECIALTY CARE ACCESS PROJECT ON SERVING UNINSURED PATIENTS

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The Specialty Care Access Project is organized by COPE Health Solutions, Los Angeles, California, in cooperation with community health centers and the LAC+USC Medical Center. It is supported by a grant from the California HealthCare Foundation based in Oakland, California.

Background

Access to specialty care continues to be a formidable problem for low-income uninsured patients.[1] County officials and primary care clinic providers report wait times from 3 to 11 months for specialty care appointments in Los Angeles County Department of Health Services (DHS) facilities. More than 50 community health centers receive Los Angeles County funding for primary care services delivered to uninsured patients through the Public Private Partnership (PPP) program. However, only six sites provide support for specialty care in the program.[2] Otherwise, PPP patients are referred to county DHS facilities for specialty procedures and consultations.

DHS referrals are made through a centralized system that routes the patient to an individual specialty service.[3] An appointment is generated and patients are informed of the date and time. Once referrals are made, there are few if any formal communication channels between the referring physician and the specialist, and seldom are patient records or the results from lab tests or procedures returned to the primary care physicians.[4] Due to long wait times for specialty care, physicians often bypass the referral system and instead send patients to hospital emergency departments (ED), aware that in severe cases, an ED visit may facilitate faster access to a necessary specialty service or procedure.

All of these scenarios are inefficient because they often result in duplication of diagnostic procedures, unnecessary referrals, and the utilization of ED services for non-emergency conditions. In addition, some specialists indicate that primary care providers often refer patients without appropriate assessments, diagnostic tests, and other clinical interventions that might otherwise prevent an unnecessary referral for specialty care.

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[1] Examining Access to Specialty Care for California's Uninsured. Issue Brief. California HealthCare Foundation, May, 2004.

[2] Venice Family Clinic, Saban/LA Free Clinic, El Proyecto, UMMA, The Children's Clinic, and BAART.

[3] In 2006, Los Angeles County DHS established the *Referral Processing System* (RPS), a Web-based system for facilitating specialty referrals at LA County DHS facilities.

[4] Until recently, the DHS Affinity system was available to PPP providers enabling clinicians to view patient records including test results conducted at LAC +USC. LA County has now restricted access to Affinity, the LAC+USC electronic information and billing system, citing a potential HIPPA violation, and county officials are examining ways to provide access to Affinity that are in compliance with federal regulations.

Design of the Specialty Care Access project

The Specialty Care Access (SCA) demonstration project was organized by COPE Health Solutions[5] in partnership with several primary health care centers in the catchment area of the LAC + USC Medical Center. The demonstration project is designed to determine whether the program can reduce unnecessary referrals to specialty care by primary care physicians or nurse practitioners and promote better management of chronic illnesses at the primary care site. Three conditions were chosen by project staff: chest pain, congestive heart failure and rheumatoid arthritis.

In effect, the demonstration project builds on other models of care management that emphasize joint decision-making and collaboration among providers. [6,7] To facilitate appropriate referrals, COPE and its partners developed five main components: 1) identification of a specialty care *"champion"*, 2) consensus guidelines for managing the three targeted conditions, 3) mini-fellowships for primary care clinicians to learn about current treatments and to observe the specialty services, 4) a telephone consultation system to enable primary care physicians and specialists to discuss specific cases and arrive at an appropriate course of action or treatment, and 5) monthly grand rounds among primary care clinicians, specialists, and hospital administrators. Later, a mobile echocardiogram service was established with private funds to expand the capacity of diagnostic services in participating community health centers, though not as part of the project.

Two specialty physicians were identified: a cardiologist and a rheumatologist at the LAC+USC Medical Center, both of whom agreed to participate in the project as volunteers. Each participating clinic designated one of its providers to serve as what are referred to as specialty *champions*. Specialty *champions* were required to attend mini-fellowships for cardiology and/or rheumatology in order to establish relationships with specialists, as well as to obtain additional training in designated specialty services. These *champions* serve as specialty gatekeepers at their respective clinics, helping to coordinate care for patients who might need specialty consultations.

For patients presenting with symptoms of chest pain or other cardiac-related conditions, or with diagnoses of heart failure or rheumatoid arthritis, primary care clinicians consult with the specialist. In some cases, the *champion* may assume responsibility for the case or co-manage the patient. The *champion* reviews the case with the primary clinician and may schedule a telephone consultation with the specialist. Based on the telephone consultation and their own judgment, the *champion* may order additional diagnostic tests, attempt to manage the patient without referring to the specialist, or make a referral through the County's Referral Processing System (RPS). A referral to the emergency department may occur depending on the severity of the case and presenting information.

[5] COPE Health Solutions is a non-profit organization that works with hospitals and clinics to develop integrated health care delivery networks.

[6] Dobscha SK, Corson K, Perrin NA, Hanson GC, Leibowitz RQ, Doak MN, Dickinson KC, Sullivan MD, Gerrity MS.Collaborative care for chronic pain in primary care: a cluster randomized trial. JAMA. 2009 Mar 25;301(12):1242-52

[7] Schmittdiel J, Mosen DM, Glasgow RE, Hibbard J, Remmers C, Bellows J. Patient Assessment of Chronic Illness Care (PACIC) and improved patient-centered outcomes for chronic conditions. J Gen Intern Med. 2008 Jan;23(1):77-80. Epub 2007 Nov 21

Evaluation

An evaluation of this demonstration project was conducted by the USC Center for Community Health Studies using qualitative and quantitative data collection strategies. We assessed how the specialty access project affects the delivery of care for patients with the three targeted conditions – chest pain, congestive heart failure or rheumatoid arthritis – as well as the feasibility of the model in averting unnecessary utilization of specialty care services.

Specifically, we assessed 1) the participation of the primary care providers in the mini-fellowships and the community grand rounds, 2) the impact of the project on compliance with consensus guidelines, and 3) changes in internal management and referral patterns of patients with the three targeted conditions. The multi-faceted evaluation design included: guided interviews with health center staff and COPE directors, participant observations of community grand rounds meetings, a survey of participating primary care physicians, analysis of administrative data from the COPE Health Solutions (not included in this report), chart review of patients diagnosed with the three selected conditions covering periods before and after implementation, chart reviews of patients referred to specialty care, and analysis of data from a log of telephone consultations kept by the participating cardiologist. (See Appendix 1 for more detailed information about the method used in this study.)

Selecting *champions*, mini-fellowships, and grand rounds

Seven clinics participate in the specialty care access project. Eleven clinicians serve as *champions*, who completed a mini-fellowship in cardiology or rheumatology organized by COPE Health Solutions and conducted by the specialists at LAC+USC. Mini-fellowships provided *champions* an opportunity to shadow specialty physicians and to become familiar with the latest treatments and diagnostic tools, as well as to see the clinic in operation. All *champions* participated in the mini-fellowship but reported experiences varied. Most were satisfied with the opportunity to learn about new treatment protocols and see first-hand how county specialty services are organized and run. However, others indicated the mini-fellowships were disorganized or unclearly structured. Not all *champions* were paired with a particular specialist, a key part of the fellowship. Nonetheless, most reported that the mini-fellowships facilitated dialogue between the specialist and the primary care physicians, built trust, and improved diagnostic and patient management skills. Similarly, the specialists also viewed the mini-fellowships as a positive asset to the project. They felt that the mini-fellowships opened up lines of communication enabling them to gain insight into the challenges of patient care from a community health center perspective.

Specialty Care Access also convenes monthly community grand rounds meetings to increase communication among LA County DHS providers and clinicians at participating community health centers. All clinics participate and contribute to the discussion about common problems in the implementation of the specialty care project. They also discuss problems in the referral process, and consider other specialty services needed in the community. Evaluators participated in four of these meetings in a year and noted that the grand rounds were well-attended and facilitated constructive and lively discussions. All *champions* were highly satisfied with monthly grand rounds and reported that they improved communication among providers, and built and strengthened professional relationships among themselves and with the specialty clinics at LAC+USC.

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Compliance with consensus guidelines

We interviewed primary care physicians (other than the *champions*) at the community health centers participating in the Specialty Care Access project. More than 60% reported being familiar with the project, but less than 30% of the same physicians reported actually using the consensus guidelines at least some of the time for either rheumatology or cardiology. However, chart reviews show considerable compliance with many of these specific guidelines even prior to program implementation and a modest increase in compliance after implementation. [8]

Evaluators reviewed charts of a random sample of patients who were diagnosed with chest pain, heart failure, or rheumatoid arthritis in each of the three largest participating clinics in order to understand practice patterns in compliance with these guidelines. In total, 143 charts were reviewed: 58 charts for chest pain, 39 for heart failure, and 47 for rheumatoid arthritis (See Appendix 4 for a demographic breakdown of the patients in the chart review study). Half of the charts for these conditions were for patients whose diagnosis and treatment occurred before the implementation of the Specialty Care Access project and half from the period after implementation (results of compliance with guidelines are found in Appendices 1-3).

For all conditions, evaluators determined through chart reviews that adherence to these guidelines was high before the project was implemented, and most changes were small and not statistically significant. However, not all health centers had the ability to perform all tests listed in the guidelines. Among chest pain patients, we observed that between the pre- to post-implementation periods, there were five guidelines for which compliance increased, while compliance decreased for 14 guidelines, though none of these changes was statistically significant. For heart failure patients, we recorded increases for 18 guidelines and decreases for 10, including certain laboratory procedures and diagnostic tests, and an increase in the use of medications including ACE Inhibitors and Beta-blockers. However, none was large or statistically significant. Of particular note was the increase in echocardiograms from 11% to over 52% ($P < .06$) among heart failure patients. The presence of the mobile echo service clearly made a difference in managing patients with heart conditions by providing them with access to these procedures that would otherwise generate a referral to LAC+USC.

For rheumatoid arthritis patients, we recorded increases in compliance with 13 guidelines, and decreases for 15 including increases in prescribing NSAIDS and methotrexate. However, only the increased use of hydroxychloroquine, a medication prescribed for the treatment of rheumatoid arthritis, was statistically significant ($p <.05$).

Cardiology *champions* reported that many primary care physicians had been aware of clinical guidelines for treating chest pain and heart failure prior to implementation of the project. Thus, they reported that they saw little change in compliance with the use of guidelines that been put together for the Specialty Care Access project. Moreover, *champions* suspected that conditions other than chest pain and heart failure (such as atrial fibrillation, hyperlipidemia, myocardial infarction, and abnormal EKGs) were more commonly associated with referrals and consultations with the cardiologist. (See Appendix 3)

[8] These findings were shared with staff from COPE Health Solutions and the key clinic staff during community grand rounds. As a result, COPE Health Solutions and their partners worked to increase awareness about the project within the clinic and promote the use of consensus guidelines more widely at each site.

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Patient management and referrals

We assessed referrals through interviews and chart reviews. First, we interviewed primary care physicians, *champions*, and specialists to determine how this project was affecting their practices, clinic operations, and patients. We also conducted chart reviews of patients with the targeted diagnoses (using the same charts noted above), chart reviews of patients referred to cardiology and rheumatology regardless of diagnosis, and a special study involving an analysis of telephone consultations records kept by the participating cardiologist.

Managing referrals among diagnosed patients

Managing referrals for specialty care is a key part of the Specialty Care Access project. Clinics vary in the types of systems they use and have used for making and tracking referrals. Prior to 2006, some clinics maintained a referral log while others tracked referrals only through the patients' charts. Because of the variations in how clinics track referrals, it was not possible to obtain rates of referrals prior to implementation of the project, and the evaluators instead relied on chart review data. We asked providers to report how the Specialty Care Access project was affecting their referral patterns for cardiology and rheumatology. More than 15% of clinicians reported that referrals had increased, 26% said they had stayed the same, and 4% reported a decrease in referrals; more than half of providers were unsure.

Chart reviews of diagnosed patients within the clinics showed that referrals from the primary care physicians to the *champions* increased for both heart failure and rheumatoid arthritis patients after implementation, but referrals decreased for chest pain patients. Additionally, the number of chest pain patients who are now co-managed or managed by the cardiology *champion* increased from 12% in the pre-implementation period to 39% in the post implementation period ($p<.03$). For heart failure patients, patients who are now managed or co-managed by the cardiology *champion* increased from 11% to 57%, ($p<.01$). (See Table 1)

Similarly, the number of patients with rheumatoid arthritis who were managed or co-managed by the rheumatology *champion* also increased from 22% in the pre-implementation period to over 55% in the post-implementation period ($p<.03$). These findings suggest that *champions* not only are taking more referrals internally from the primary care physicians, they also are taking more of an active role in managing their care. Surprisingly, some of these physicians were taking this role even before the specialty access project was put in place. (See Table 2)

For heart failure patients, there was an increase in the number of consultations with the cardiologist from 0 to 24% ($p<.05$), but also an increase in the percent referred to the specialist from 16.7% to 42.9% ($p <.05$), and a slight increase in the percent referred to the ED (33% to 38%, while not statistically significant). Additionally, there was a slight increase in the percentage of heart failure patients who saw the cardiologist from 22% to 26%, although this bump was not statistically significant. These findings do suggest that the consultations are helping identify patients who need a specialist. These same patients without the program might otherwise not have received a referral or may have been sent to the hospital ED (See Table 1).

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Table 1. Patient Care Management and Referrals, Chest Pain and Heart Failure Patients: Pre-Post Analysis for the Camino de Salud Specialty Access Project, 2009

	Chest Pain (N=58)					Heart Failure (N=39)				
	Pre		Post		p-value	Pre		Post		p-value
	N	%	N	%						
Referral										
Patient Referred to ER	5	20%	3	9%		6	33%	8	38%	
Patient Referred to Cardiology *Champion*	4	16%	4	12%		1	6%	5	24%	
Patient Referred to Cardiology Specialist	6	24%	8	24%		3	17%	9	43%	< .05
Request for Cardiology Specialist to See Patient	0	0%	1	3%		0	0%	3	14%	
Management										
Patient Managed at Clinic by Primary Provider	24	96%	30	91%		16	89%	19	91%	
Patient Managed by Cardiology *Champion*	3	12%	13*	39%	<0.03	2	11%	12*	57%	<0.01
Chart Review Sent to Cardiology Specialist	0	0%	1	3%		0	0%	2	10%	
Cardiology *Champion* Consulted with Cardiology Specialist	1	4%	3	9%		0	0%	5	24%	<.05
Patient Seen by Cardiology Specialist	2	8%	2	6%		4	22%	6	29%	
Champion Has Record of Patient Results & Specialty Consultation	0	0%	1	3%		0	0%	0	0%	
Cardiology *Champion* Saw Patient for Follow-Up Visit	0	0%	2	6%		0	0%	6	29%	

**Chi-Square Analyses were conducted. Health Centers include JWCH, Queenscare, Romero*

For chest pain patients, the number of consultations increased from 4% to 9% with no change in the percent of patients referred to the specialist or who were seen by a specialist. The percent of chest pain patients referred to the ED decreased from 20% to 9%, although the drop was not statistically significant.

For rheumatology patients, there was a sharp increase in the number of specialty consultations from 6% to 28% (P< .05) and a decrease in the percent referred to the specialist, from 61% to 48%, although this change also was not statistically significant. The percent of patients who saw the specialist did not change from the pre- to post-implementation period; only one patient was referred to the ER in the post-period, compared with none in the pre-period. None of these differences, however, was considerable or statistically significant. (See Table 2)

Table 2. Patient Care Management and Referrals, Rheumatoid Arthritis Patients, JWCH, Pre-Post-Implementation, (N=47), 2009

	Pre		Post		p-value
	N	%	N	%	
Referral					
Patient Referred to ER	0	0%	1	4%	
Patient Referred to Rheumatology *Champion*	4	22%	12	41%	
Patient Referred to Rheumatology Specialist	11	61%	14	48%	
Request for Rheumatology Specialist to See Patient	0	0%	6	21%	
Management					
Patient Managed at Clinic by Primary Provider	17	94%	24	83%	
Patient Managed by Rheumatology *Champion*	4	22%	16*	55%	<0.03
Chart Review Sent to Rheumatology Specialist	0	0%	4	14%	
Rheumatology *Champion* Consulted with Cardiology Specialist	1	6%	8	28%	<.05
Patient Seen by Rheumatology Specialist	5	28%	8	28%	
Champion Has Record of Patient Results & Specialty Consultation	0	0%	3	10%	
Rheumatology *Champion* Saw Patient for Follow-Up Visit	1	6%	6	21%	

**Chi-Square Analyses were conducted. Health Centers include JWCH, Queenscare, Romero*

Chart reviews of specialty referrals

The evaluation team conducted chart reviews of patients who were referred for cardiology or rheumatology through RPS. This additional step was taken since so few patients were referred either before or after project implementation based on diagnosis alone. Instead, cardiology referrals tended to be for other conditions (described above), a finding that was confirmed by the interviews with the cardiology *champions*.

Charts were chosen at random from a list of patients referred for these two specialties. Forty-one charts were reviewed for cardiology; 34 for rheumatology. More than three-fourths (78%) of patients were referred to LAC+USC Medical Center. Others were referred to other county facilities or private charitable programs. Additionally, 22% of cardiology referrals were cases first reviewed by the cardiologist through a telephone consultation. Of the rheumatology referrals reviewed, 56% occurred after a consultation with the rheumatology specialist. (See Table 3)

Table 3. Referrals for the Camino de Salud Specialty Access Project, 2009

	Cardiology N=41)		Rheumatology (N=34)	
	N	***%***	***N***	***%***
Referral				
Patient Referred to ER	5	12%	0	0%
Patient Referred to *Champion*	4	10%	16	47%
Patient Referred to Specialist	32	78%	30	88%
Request for Specialist to See Patient	4	10%	17	50%
Management				
Patient Managed at Clinic by Primary Provider	41	100%	33	97%
Patient Managed by *Champion*	9	22%	8	24%
Chart Review Sent to Specialist	7	17%	0	0%
Champion Consulted with Specialist	12	29%	19	56%
Patient Seen by Specialist	9	22%	10	29%
Champion Has Record of Patient Results & Specialty Consultation	3	7%	1	3%
Champion Saw Patient for Follow-Up Visit	2	5%	4	12%

**Chi-Square Analyses were conducted. Health Centers include JWCH, Queenscare, Romero.*

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Cardiology telephone consultations

There were 176 telephone consults with the cardiologist between June 2007 and October 2009. These were consultations documented in a log kept by the cardiologist. Among the patients reviewed by the cardiologist, 22% were recommended to be referred to the LAC+USC Cardiology clinic. The cardiologist recommended further diagnostic tests for about 15% and modifying the patient's medication for 10%. (See Chart 1)

The evaluation team then linked 137 patients identified in the cardiologist's log with patient records from their referring clinic. We reviewed RPS referral records or patient charts when RPS was not available to determine to what extent the *champion* complied with the recommendations of the specialist and whether a referral had been made regardless of the recommendations. The cardiologist recommended a diagnostic test (e.g. EKG, echocardiogram) for 51 patients. Of these, 47% were actually referred for this procedure through RPS. Several of the clinics had their own EKG machines in-house, as well as access to mobile echo services, which likely reduced the number of these procedures ordered through RPS. The others received them through the mobile echo program or never received them at all. The cardiologist recommended a referral to the cardiology clinic for 26 patients. Of these patients, 73% were referred through RPS, although it wasn't clear how many actually went to the clinic for their specialty visit. No referrals were recommended for nine patients. Of these patients, 43% were nevertheless referred for a specialty appointment (See Chart 2).

Chart 1. Primary Reasons for Cardiology Consultation (N=176)

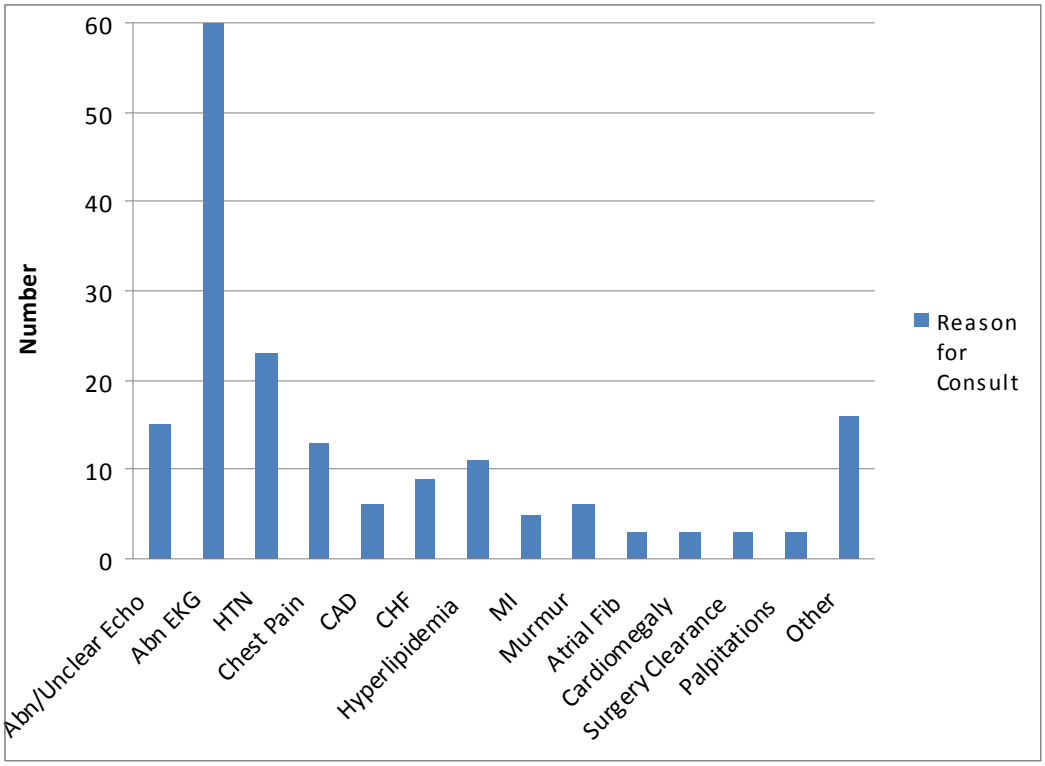

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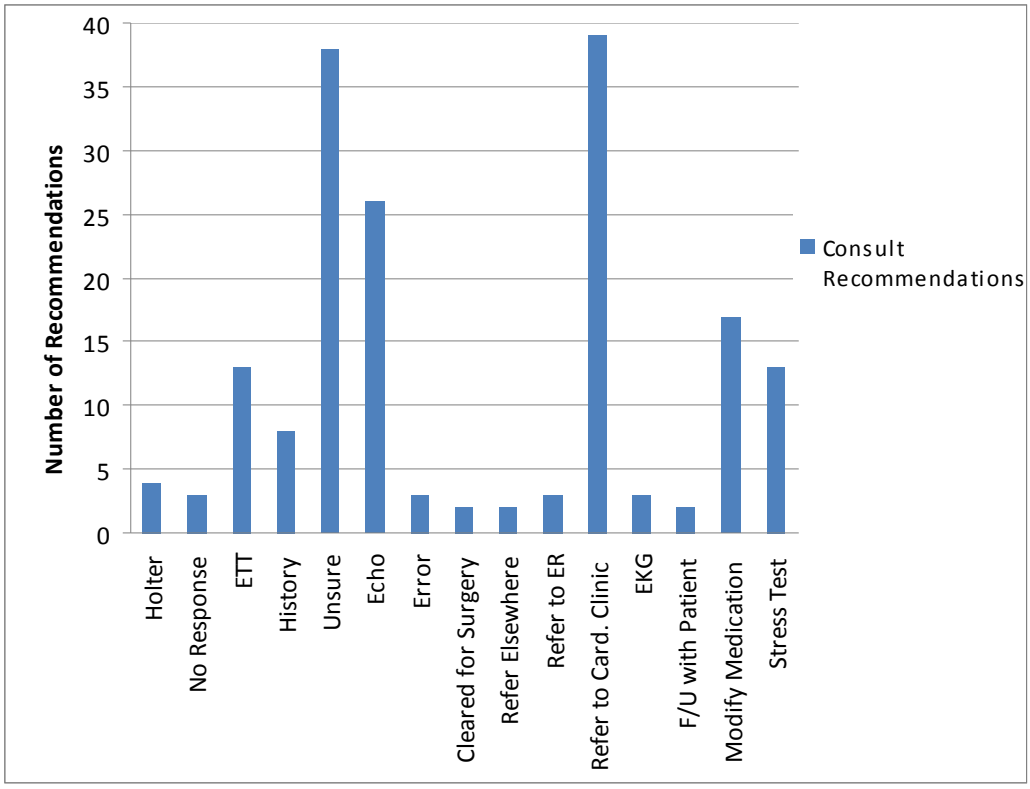
Chart 2. Cardiology Phone Consultation Recommendations (N=176)



Discussion

The data in this study provide some evidence that the Specialty Care Access project has improved management of patients with chronic conditions, although the conclusions cannot be definitive due to limitations in the research design and the size of the program.

Clinical guidelines

We note some improvement in compliance with many consensus guidelines (particularly lab and pharmacy), although as previously noted there was considerable compliance with elements of the guidelines even before the program started. Most of the changes in compliance were not large and many were not significant statistically. In discussing these with the primary care clinicians and *champions*, many reported that their formal training was more than adequate to manage these conditions but what was needed was access to specialty care appointment slots. This suggests that establishing better systems for referrals and consultations may be more important than establishing these clinical guidelines, many of which are available in other venues and through other resources.

For heart failure patients, there were more consultations between the primary care physician and the cardiologist and fewer ED referrals. However, referrals for specialty care seemed to have increased for these patients. But since many of these referrals occurred after consultations with the specialist, they were likely to be more appropriate given the health status of the patients and the information

obtained from the specialist and by the primary care physician. There was no change in referral patterns for chest pain patients although ED referrals declined slightly and the number of patients for whom telephone consultations had occurred increased. This suggests that treatment options for chest pain are more limited once ruling out muscular-skeletal problems. ED referrals for organic causes of chest pain is more appropriate and in line with standards of care. Telephone consultations may have added some reassurance to these physicians who were considering the correct course of action based on the history and physical examinations of the patients, particularly whether to make the referral for specialty consultations

A key element of success in this project was the mobile echocardiogram program, introduced separately, which provided an alternative resource for physicians with patients who otherwise might have been referred to LAC+USC for diagnostic services. Expanding primary care-based diagnostic procedures and specialty services is clearly an important step that can be taken to expand access to specialty care services.

The program seemed to reduce the demand for a visit to the rheumatologist and did improve the ability of primary care physicians to better manage their patients without referrals and begin treatment with disease-modifying drugs earlier than what might have occurred otherwise. Physician *champions* reported that with time, primary care providers became more familiar and comfortable with prescribing medications and managing rheumatoid arthritis patients without consulting the specialist.

Despite these promising trends, it is unclear how deeply within these practices the specialty access project components were implemented and utilized among the clinics. Several primary care clinicians indicated many patients still are referred to the specialist outside of the guidelines established by the Specialty Care Access project, and the conditions chosen for cardiology were not the conditions that typically generated cardiology referrals.

Limitations

There are limitations to this study. While care was taken to ensure that patients were chosen for chart review from both before and after implementation, charts were not chosen as a proportionately representative sample of all patients with these conditions in these clinics. Thus, these data are limited in terms of drawing definitive conclusions about attribution; that is, how practice and referral patterns may have changed as a result of the project, as no comparison group was available. Still, the results offer some direction and provide information that could be verified with better controlled studies built on prospective designs, using standard comparative effectiveness and cost effectiveness methodologies.

Implications and challenges

One of the project's goals was to help limit costs by better managing patient care in the primary setting, avoiding unnecessary visits to the emergency department and specialty clinics. While diversions from unnecessary specialty care or ED visits may have occurred for rheumatoid arthritis patients, cost savings are less certain for cardiology, where referrals appear to have increased. If there are many unnecessary referrals, these data suggest that there are many patients in the primary care setting who are not being referred but who should be if given the resources and the benefit of pre-referral consultations with cardiologists. In fact, the increase in cardiology referrals may have been appropriate considering they occurred after consultation with the cardiologist. Primary care clinicians, now armed with new information from their consultations with *champions* and specialists,

have identified patients who will benefit from a specialty referral; patients who, prior to the program, otherwise might have been sent to the ED or not referred at all. This also suggests that the number of patients now in the queue for specialty procedures is more appropriate. An improvement in the program could involve not only identifying higher needs patients but systematically moving these top priority individuals up in the queue to better ensure they get necessary care more quickly.

While there was some improvement in primary care management, it may not have reduced costs to the DHS system. A reduction in unnecessary referrals may have reduced the size of the waiting list but not the overall cost of running the service since clinics are financed through allocation of reimbursement revenue and county funds budgeted to cover fixed costs. Given the limited specialty capacity at LAC+USC Medical Center as well as excess demand for its services, reducing the size of the queue is important but may not reduce the overall cost of the service, at least not in the short run, as the volume of the patients served will not decrease.

Overall, this program faces significant challenges. An important obstacle to expanding and improving the system is to incorporate the specialty consultation into the overall budget and operation of LAC+USC Medical Center. The project currently is structured so that specialty consultations are done without compensation and not budgeted by DHS. Some administrative staff are concerned that specialist time devoted to the project takes away providers from direct patient care, possibly increasing overall costs. This reflects the lack of understanding of the interconnectedness of patient care systems and the role that primary care clinics play or could play in managing chronic conditions. A patient in a community clinic is likely to become a county patient if he or she is referred to LAC +USC Medical Center for specialty care or procedures. Developing a system for incorporating the specialty care consultations into the core operating costs of the medical center would be an important way to sustain and expand this program in the future. However, this must be done in the context of significant policy and programmatic efforts to expand specialty care capacity either at LAC +USC Medical Center or in the community, or both. Another challenge is mounted by the inadequacies of data systems that at this point are incomplete and do not reflect the various moving parts of the patient management and referral systems. A data system is needed that is robust enough to capture and link primary care visits, referrals, consultations, appointments, and clinical outcomes.

Conclusions

The Specialty Care Access Project is an innovative first step in bringing LAC+USC Medical Center and community-based primary care clinics together and beginning to better manage the care of chronically ill patients. The model has many of the components of an integrated system consistent with a quality medical home: a primary care doctor, specialty consultation service, specialty referrals, and continuing education.

The Specialty Care Access Project has had an important role in improving communication between community-based primary care providers and hospital-based specialists as well as a system for collaboration through regular grand rounds and continuing education. The project has helped break down communication barriers between the primary care clinics and the LAC +USC Medical Center, barriers that have historically prevented health care providers from operating as a more seamless and integrated system of care for patients with chronic illnesses.

Many aspects of the Specialty Care Access Project hold promise for improving the system of delivering health care to low-income populations through safety net providers. It shows the importance of breaking down the walls between provider organizations; walls that have characterized the existing fragmented and silo-focused system. Moreover, it places the work of specialists as part of the continuum of care that is more integrated, and it incorporates many aspects of effective disease management. In addition, the program could be improved by developing new ways of systematically moving higher priority patients up on the waiting list for specialty care as determined by the primary care physicians in consultation with the clinicians. This would help all providers better allocate scarce resources based on need and health status.

Combining elements of the Specialty Care Access Project, particularly the telephone consultations, mini-fellowships, and community grand rounds, and adding a system to more systematically place higher need patients up on waiting lists for specialty procedures, along with expansion of services particularly for diagnostic services, will promote a more rational, efficient, and integrated approach to chronic disease care management. Finally, the Specialty Care Access Project must include ways to pay for the time that primary care *champions* and specialists devote to the management of these patients.

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Appendix 1. Compliance with Consensus Guidelines, Chest Pain Patients: Pre-Post Implementation for the Camino de Salud Specialty Access Project, 2009

	Pre		Post		p-value
	N	%	N	%	
Baseline Evaluation					
History/Physical Exam/Medication	23	92%	32	97%	
CBC	19	76%	23	70%	
Fasting Comprehensive Chem Panel	15	60%	19	58%	
Drug Screen	1	4%	1	3%	
Fasting Lipid Panel	17	68%	21	64%	
Liver Function Tests	14	56%	15	46%	
Clean Catch Urinalysis	9	36%	17	52%	
Electrocardiogram	21	84%	31	94%	
Stress Testing	5	20%	5	15%	
Echo	6	24%	5	15%	
Cardiac Catheterization	1	4%	1	3%	
Chest X-Ray	9	36%	12	36%	
Pharmacologic Treatment					
Antiplatelet Therapy	10	40%	12	36%	
Statins	7	28%	12	36%	
Nitrates	10	40%	6	19%	
Beta Blockers, Calcium Blockers, ACEI	11	44%	13	39%	
Nutritional Supplement Therapy	3	12%	2	6%	
Modifiable Risk Factors and Co-Morbid Conditions assessed and addressed	11	44%	19	58%	

**Chi-Square Analyses were conducted. Health Centers include JWCH, Queenscare, Romero.*

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Appendix 2. Compliance with Consensus Guidelines, Heart Failure Patients: Camino de Salud Specialty Access Project, 2009

	Pre		Post		p-value
	N	%	N	%	
Baseline Evaluation					
History/Physical Exam/Medication	14	78%	21	100%	
Signs and Symptoms of Congestion	12	67%	13	62%	
Signs and Symptoms of Poor Perfusion/Low Cardiac Output	5	28%	4	19%	
Laboratory Evaluation					
CBC	13	72%	17	81%	
Electrolytes	12	67%	16	76%	
Renal Function	13	72%	16	76%	
Liver Function Tests	11	61%	15	71%	
Urinalysis	9	50%	13	62%	
Sensitive TSH	11	61%	11	52%	
PT/INR	3	17%	4	19%	
Arterial Blood Gases	16	89%	0	0%	
Tests for myocardial injury: troponin, CK/CKMB	16	89%	0	0%	
BNP	1	6%	2	10%	
Anemias	2	11%	1	5%	
Lipid Profile	12	67%	16	76%	
Blood Culture (if endocarditis is suspected)	0	0%	0	0%	
Lymes serology (if suspect bradycardia/heart block)	0	0%	0	0%	
Connective tissue work up	0	0%	0	0%	
HIV	0	0%	1	5%	
Diagnostic Tests					
EKG	11	61%	14	67%	
Chest X-ray	9	50%	10	48%	
Echo	2	11%	11	52%	<.06
Pharmacologic Treatment					
ACE Inhibitors	10	56%	17	81%	
Angiotensin II receptor Antagonists	2	11%	1	5%	
Hydralazine/Isosorbide Dinitrate	0	0%	3	14%	
Beta-blockers	11	61%	14	67%	
Diuretics	14	78%	13	62%	
Aldosterone Antagonists	1	6%	2	10%	
Digoxin	5	28%	3	14%	
Medication Review	2	11%	4	19%	
Nutraceuticals	0	0%	0	0%	
Modifiable Risk Factors and Co-Morbid Conditions assessed and addressed	7	39%	13	62%	

**Chi-Square Analyses were conducted. Health Centers include JWCH, Queenscare, Romero.*

Appendix 3. Compliance with Consensus Guidelines, Rheumatoid Arthritis: Pre-Post Implementation for the Camino de Salud Specialty Access Project, 2009

	Pre		Post		p-value
	N	%	N	%	
Baseline/Laboratory Evaluation					
CBC	15	83%	26	90%	
ESR	12	67%	21	72%	
ESR< 60	12	67%	17	59%	
ESR > 60	1	6%	7	24%	
RF	13	72%	18	62%	
+ or - RF	10	56%	8	28%	
RF higher titer	6	33%	8	28%	
Comprehensive Chem Panel	15	83%	24	83%	
Drug Screen	18	100%	1	4%	
ANA	12	72%	14	48%	
ANA higher titer	3	17%	3	10%	
CRP	10	56%	14	48%	
CRP < 3	4	22%	10	35%	
CRP > 3	4	22%	5	17%	
Clean Catch Urinalysis	9	50%	14	48%	
PPD	3	17%	9	31%	
Hepatitis C antibody	3	17%	9	31%	
X-rays of hands, wrists, and/or other symptomatic areas	8	44%	14	48%	
Erosion on X-rays	0	0%	3	10%	
Additional Tests					
Anti CCP antibody	1	6%	7	24%	
Anti DNA (only if ANA is +)	2	11%	0	0%	
Pharmacologic Treatment					
NSAIDS and Aspirin	14	78%	23	79%	
Analgesics	5	28%	12	41%	
Corticosteroids	7	39%	10	34%	
Sulfasalazine	1	6%	5	17%	
Hydroxychloroquine	1	6%	12*	41%	<0.007
Methotrexate	4	22%	8	28%	
Biological Response Modifiers	2	11%	1	4%	
Prednisone	7	39%	7	24%	

**Chi-Square Analyses were conducted. JWCH, Queenscare, Romero.*

Appendix 4a. Demographic Characteristics of Patients in Chart Reviews (Heart Failure, Chest Pain, Rheumatoid Arthritis): Pre-Post Implementation for the Camino de Salud Specialty Access Project, (N=144)

	Heart Failure				Chest Pain				Rheumatoid Arthritis			
	N Pre (18)	%	N Post (21)	%	N Pre (25)	%	N Post (33)	%	N Pre (18)	%	N Post (29)	%
Gender												
Male	10	56%	15	71%	14	56%	16	49%	3	17%	4	14%
Female	8	44%	6	29%	11	44%	17	52%	15	83%	25	86%
Payer Source												
PPP	10	56%	15	71%	13	52%	24	73%	15	83%	26	90%
Other	8	44%	6	29%	12	48%	9	27%	3	17%	3	10%
Race												
Hispanic	9	50%	10	48%	14	56%	24	73%	16	89%	23	79%
African American	5	28%	6	29%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Other	4	22%	5	24%	4	50%	9	27%	2	11%	6	21%

For JWCH, Queenscare, Romero health centers.

Appendix 4b. Demographic Characteristics of Patients in Chart Reviews (Rheumatology and Cardiology Referrals) for the Camino de Salud Specialty Access Project, All Clinics (N=75)

	Rheumatology Referrals		Cardiology Referrals	
	N	***%***	***N***	***%***
Gender				
Male	8	24%	22	54%
Female	26	77%	19	46%
Payer Source				
PPP	33	97%	41	100%
Medi-Cal	1	3%	0	0%
Race				
Hispanic	27	79%	28	68%
Other	7	21%	13	32%
Age M (SD)				
	47.2 (11.6)		52.7 (11.1)	

For JWCH, Queenscare, Romero health centers.

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