



Provision of Comprehensive Clinical Pharmacy Services to Underserved Populations through Community Safety Net Clinics

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The authors have nothing to disclose.

Introduction

- More than 2.7 million uninsured in Los Angeles County rely on safety net community clinics for health care
- Challenges for safety net clinics
 - › Limited government funding
 - › Increasing demand for services
 - › Staff burnout and limited supply of healthcare professionals
 - › Improving quality of chronic disease management
 - › Organization of dispensaries and medication formularies to minimize drug expenditures
- University of Southern California (USC) faculty developed clinical pharmacy services for safety net clinic patients
- Purpose
 - › Maximize use of free (through Patient Assistance Program [PAP]) and lower cost generic medications (Federal 340B purchasing program)
 - › Provide disease state management (DSM) services targeting high-risk patients
 - › Increase number of student pharmacists and residents exposed to and trained to provide care to safety net clinic patients

Description of the Program

USC Faculty Team

- Five clinical faculty members from USC covering a broad range of skills
 - › Consultant pharmacist
 - › Outcomes research and grant writing
 - › Community pharmacy clinical services and ownership
 - › DSM services management
 - › Computerized documentation systems

Step 1: Identify safety net clinics supportive of pharmacy team's objectives, seek initial funding

- Three clinics (Clinics A, B, and C) selected

| | Clinic A | Clinic B | Clinic C | Average for Entire County |
|--|-------------|----------|----------|---------------------------|
| Demographic Characteristic | | | | |
| Ethnicity | | | | |
| Black | 3% | 59% | 49% | 10% |
| Hispanic | 96% | 21% | 40% | 39% |
| White | Unavailable | 1% | 9% | 40% |
| Asian | 1% | 16% | 2% | 11% |
| Education & Income | | | | |
| <12 years education | 60% | 56% | 70% | 31% |
| Median family income | \$16,045 | \$21,038 | \$2,500 | \$34,965 |
| Below Federal poverty level | 99% | 75% | 100% | 24% |
| Unemployment rate | Unavailable | 12% | 96% | 8% |
| Receiving public assistance | Unavailable | 25% | 100% | 20% |
| Clinic Patient Volume | | | | |
| Number of unique / active patients receiving care | 10,000 | 7,000 | 12,000 | - |
| Number of patient visits per day | 100-120 | 80-200 | 80-90 | - |
| Clinic Prescribing Staff (average on duty per day) | | | | |
| Number of physicians | 3 | 1 | 2 | - |
| Number of mid-level providers (nurse practitioners and physician assistants) | 4-5 | 6 | 0 | - |

- None had personnel, equipment, or resources to implement clinical pharmacy services
- All operated dispensaries (not pharmacies)
- Initial funding: \$140,000 grant from Health Resources and Services Administration (HRSA) Bureau of Primary Health Care

Description of the Program (continued)

Step 2: Establish pharmacist role in participating clinics

- Initial meetings with Medical Directors revealed the following:

1. *Safety net clinics did not share a uniform medication formulary*
Clinics purchased high-cost medications when less expensive or cost-free options were available
2. *Underuse of technology*
 - › Not using computer software to manage PAP medication acquisition
 - › No computerized prescription management system
3. *Unfamiliarity with pharmacists as direct patient care providers*
 - › Had never worked with pharmacists in clinical settings
 - › Open to pharmacist-managed DSM services that included clinical privileges
 - › Agreed that DSM services target chronic illnesses with poorest rates of control: diabetes, hypertension, asthma, and dyslipidemia

- Medication formularies reviewed to identify low- or no-cost therapeutic alternatives
- Low-cost PAP management software and computerized medication dispensing systems identified
- Disease management protocols drafted for diabetes, hypertension, asthma, and dyslipidemia management
- Computerized documentation system implemented, accessible from any location via USC server

Step 3: Integrate pharmacy students and residents

- Student-run volunteer program established through small grant (\$30,000)
 - › Program named SHARE (Students Helping and Receiving Education)
 - › Students assist with patient counseling and DSM services, teach patient education classes
- Student pharmacists assigned to clinics as part of coursework
- Pharmacy Practice Residents rotate through safety net clinics

Step 4: Expansion/program growth

- Initial resistance to clinical pharmacy services from medical staff due to lack of familiarity with pharmacists providing direct patient care services
- Within months, all medical staff supported full clinical privileges for clinical pharmacists based on daily interactions with pharmacists
- Additional grant funding (\$450,000 in 2003, \$300,000 in 2004, \$1.1 million in 2006) supported expansion of clinical pharmacy services in existing clinics and addition of 5 new clinics, with 3 more clinics requesting partnership with USC

Experience with the Program

- Impact on medication expenses
 - › ~\$700,000 in annual medication costs avoided by maximizing use of low- and no-cost medications
- Impact on disease management
 - › ~16,000 patient visits with clinical pharmacists for disease management over a 4-year period

| | Number |
|---|--------|
| Patient referrals | 2,779 |
| Unique patients seen | 2,235 |
| Patient visits (initial & follow-up) | 15,904 |
| Disease states encountered¹ | |
| Diabetes | 13,267 |
| Hypertension | 9,452 |
| Dyslipidemia | 8,720 |
| Asthma | 975 |
| Other | 1,403 |

¹ "Disease state encounter" = visits in which pharmacist was involved in managing the particular disease state. Many patients required management of multiple disease states.

- › Pretest-posttest analyses of impact of clinical pharmacy services on blood pressure in patients with hypertension and hemoglobin A1c in diabetics

| Disease State | Results (average) |
|---|--|
| Hypertension- All Patients with baseline & follow-up BPs (n = 242) Baseline BP Follow-up BP [BP reduction, baseline to follow-up] Diabetic Hypertensives (n = 194) ² Baseline BP Follow-up BP [BP reduction, baseline to follow-up] | 152/83 mmHg 126/71 mmHg [-26/-12 mmHg] 150/82 mmHg 125/71 mmHg [-26/-11 mmHg] |
| Diabetes Mellitus- Patients with baseline HgA1c levels \geq 9.5% (n = 225) ³ Baseline HgA1c Follow-up HgA1c [HgA1c reduction, baseline to follow-up] | 11.3% 7.6% [-3.7] |

BP = blood pressure; HgA1c = hemoglobin A1c

² Diabetic hypertensives were itemized due to their lower blood pressure target (<130 / 80 mmHg vs. <140 / 80 mmHg for uncomplicated hypertension)

³ 9.5% threshold based on National Committee on Quality Assurance (NCQA) diabetes care criteria; majority of patients had baseline HgA1c levels \geq 9.5%

- › Retrospective cohort study of impact of clinical pharmacists on care of safety net patients: Blood pressure, glycemia and lipid management in patients with diabetes mellitus

| Follow-up Period | Usual Care (N=85) | Pharmacist-Managed (N=64) | P-Value |
|---|-------------------|---------------------------|---------|
| Percent of patients attaining BP control (BP < 130/80 mmHg) | | | |
| 3 months | 22% | 42% | 0.009 |
| 6 months | 36% | 47% | 0.201 |

| Follow-up Period | Usual Care (N=148) | Pharmacist-Managed (N=166) | P-Value |
|---|--------------------|----------------------------|---------|
| Percent of patients with A1c < 8% | | | |
| 6 months | 21% | 40% | <0.0002 |
| 12 months | 25% | 44% | <0.0002 |
| Percent of patients with A1c < 7% | | | |
| 6 months | 6% | 12% | 0.07 |
| 12 months | 7% | 12% | 0.07 |

| Follow-up Period | Usual Care (N=108) | Pharmacist-Managed (N=88) | P-Value |
|---|--------------------|---------------------------|---------|
| Follow-up LDL-C values for patients NOT at LDL-C goal (\geq 100 mg/dL)- mg/dL | | | |
| Baseline | 138 | 134 | NS |
| 2 nd visit | 115 | 109 | NS |
| 3 rd visit | 116 | 95 | <0.0001 |

Discussion

- Providing pharmacy services to uninsured populations is a rewarding experience for pharmacists, residents, and students
- Our practice model has now been replicated in 8 safety net clinics
- Greatest challenge: sustaining funding for pharmacists beyond duration of grant-funded time periods
- All partnering clinics are paying or have obtained foundation funding for salaries of the clinical pharmacists

Conclusion

- Quotes from a partnering clinic medical director
 - › "The USC School of Pharmacy program is an integral component of the medical services we provide."
 - › "The USC pharmacists provide our patients and clinic a comprehensive package of health education, drug information, disease management, and dispensing assistance."
 - › "Patient satisfaction has never been better thanks to the USC School of Pharmacy. Our patients have consistently provided positive feedback about how the pharmacy services have increased the quality of care at the clinic and made their healthcare experience more satisfying."
- National efforts
 - › Continue to generate legislative support for pharmacist recognition as providers
 - › Serve as instructor and mentor for a HRSA-managed national collaborative focusing on implementing patient safety and clinical pharmacy services in safety net clinics (Patient Safety and Clinical Pharmacy Collaborative, see <http://www.hrsa.gov/patientsafety>)
 - › Host local, regional, and national training programs