Community Studies in Developing Countries. Oxford, England: Clarendon Press; 1997:213–232.

7. Marks S. South Africa's early experiment in social medicine: its pioneers and politics. *Am J Public Health.* 1997;87: 452–459.

8. Bac M. Evaluation of child health services at Gelukspan Community Hospital, Radithuso, Bophuthatswana, 1976–1984. *S Afr Med J.* 1986;70: 277–280.

9. Van Rensburg HC, Harrison D. History of health policy. In: *SA Health Review 1995.* Durban, South Africa: Health Systems Trust and the Henry J. Kaiser Family Foundation; 1995:53–71.

10. Ferrinho PD, Wilson TD. Alexandra Health Centre and University Clinic—a model for urban primary health care. *S Afr Med J.* 1991; 80:368–369.

11. Sutter E. The Care Groups: a community involvement in primary health care. In: Westcott G, Wilson F, eds. *Economics of Health in South Africa.* Vol 1. Cape Town, South Africa: University of Cape Town and Raven Press;1979: 293–302.

12. *Primary Health Care. A Joint Report by the Director General of the World Health Organization and the Executive Director of the United Nations Children's Fund.* Geneva, Switzerland: World Health Organization; 1978.

13. Mullan F, Epstein L. Community-Oriented primary care: new relevance in a changing world. *Am J Public Health.* 2002;92:1748–1755.

14. Kark SL, Kark E. *Promoting Community Health: From Pholela to Jerusalem.* Johannesburg, South Africa: Witwatersrand University Press; 1999.

15. Katzenellenbogen JM, Joubert G, Hoffman M, Thomas T. Mamre Community Health Project—demographic, social and environmental profile of Mamre at baseline. *S Afr Med J.* 1988;74:328–334.

16. Tollman SM. The Agincourt field site—evolution and current status. *S Afr Med J.* 1999;89:853–858.

17. Tollman SM, Mkhabela S, Pienaar JA. Developing district health systems in the rural Transvaal: issues arising from the Tintswalo/Bushbuckridge experience. *S Afr Med J.* 1993;83:565–568.

18. Department of Health, Welfare and Gender Affairs. *Primary Health Care in Mpumalanga: Guide to District-Based Action.* Mpumalanga Province, South Africa: Health Systems Trust; 1996.

19. Kahn K, Tollman SM, Garenne M, Gear JSS. Who dies from what? Determining cause of death in South Africa's rural north-east. *Trop Med Int Health.* 1999;4:433–441.

20. *A National Health Plan for South Africa.* Johannesburg, South Africa: African National Congress; 1994.

21. Whitehead M, Dahlgren G, Evans T. Equity and health sector reforms: can low-income countries escape the medical poverty trap? *Lancet.* 2001;358: 833–836.

22. *World Development Report 1993: Investing in Health.* Oxford University Press; 1993.

23. Abramson JH, Kark SL. Community oriented primary care: meaning and scope. In: Connor E, Mullan F, eds. *Community Oriented Primary Care.* Washington, DC: National Academy Press; 1982.

Community-Oriented Primary Care in Action: A Dallas Story

Dallas County, Texas, is the site of the largest urban application of the community-oriented primary care (COPC) model in the United States. We summarize the development and implementation of Dallas's Parkland Health & Hospital System COPC program.

The complexities of implementing and managing this comprehensive community-based program are delineated in terms of Dallas County's political environment and the components of COPC (assessment, prioritization, community collaboration, health care system, evaluation, and financing). Steps to be taken to ensure the future growth and development of the Dallas program are also considered.

The COPC model, as implemented by Parkland, is replicable in other urban areas. (*Am J Public Health.* 2002;92: 1728–1732)

Sue Pickens, MEd, Paul Boumbulian, DPA, MPH, Ron J. Anderson, MD, Samuel Ross, MD, and Sharon Phillips, RN

PARKLAND HEALTH & HOSPITAL System (hereafter Parkland) has implemented a primary care system that has improved access to care among more than 350 000 residents of Dallas County, Texas. In this article, we describe the community-oriented primary care (COPC) system implemented by Parkland. Our hope is that Parkland's core components can be replicated in other urban communities.

BACKGROUND

Parkland, one of the largest publicly funded teaching hospitals and health care systems in the United States, is owned and operated by a special taxing jurisdiction of the state of Texas that is coterminous with Dallas County. This jurisdiction is separate from the public health funding structures of the state, city, and county. An independent board of managers appointed by elected county commissioners governs Parkland. As a result of the recommendations of Parkland's board of managers, the Dallas County commissioners set an ad valorem property tax rate based on assessed values of the county's homes and businesses, and revenues generated from this tax assessment are allocated to Parkland for the care of the medically indigent.

This year, more than 43 000 admissions and 17 000 births will occur at Parkland, the latter representing 40% of all infants born in Dallas County. Parkland provides more than 70% of Dallas County's major trauma care as well as more than 60% of the county's AIDS-related services. In 2002, Parkland's total number of outpatient visits reached 1 million.[1–3] In recognition of its outstanding performance in terms of service provision, *U.S. News and World Report* has listed Parkland among the nation's top hospitals for 8 consecutive years.

Parkland has not always been able to achieve its current high levels of quality and access. Its transformation began in 1980, when Dallas County residents, in support of the new governance and leadership at Parkland, passed a bond referendum to renovate Parkland's teaching hospital and campus specialty outpatient clinics. This renovation was completed in the mid-1980s. As soon as these facilities became operational, they were filled to capacity. To deal with the expanding volume of patients, Parkland examined options for decentralizing primary care.

In 1986, Parkland undertook a new planning effort to meet this growing volume. The plan-

ning process was developed around 2 separate community groups. The first was a panel of clinical and public health experts, and the second comprised community health leaders. These 2 groups recommended that Parkland develop a system of care that not only embraced traditional sick care but also focused on prevention, assessment, community involvement, health improvement, and outcomes. The system had to promote continuity of care between the community and the central campus and furnish a setting in which preventive services could be provided along with primary care. After an assessment of models that fit the planning committee's criteria and a review of the Institute of Medicine's 1984 report on COPC, the COPC model was chosen.[4]

Although Parkland is operated as a special taxing district (a subdivision of the state of Texas), its budget is subject to review by the Dallas County commissioners. In 1987, Parkland's plan for decentralization, *Community Oriented Primary Care: A Plan for Dallas County,* was presented to the county commissioners and the board of managers.[5] An increase in the tax allocation was approved for the incremental implementation of the COPC program.

IMPLEMENTATION

Parkland implemented its COPC program during a major demographic transformation. Between 1990 and 2000, Dallas County's population grew by more than 200 000, to nearly 2.2 million. The county's Hispanic population grew by 110%, to approximately 30% of the population.[6,7]

The economic boom that began in the late 1990s resulted in low unemployment rates nationwide as well as in Dallas County. Even so, the county still has approximately 680 000 residents who live at a level below 200% of the poverty level, which, according to Parkland policy, qualifies them for tax-supported or sliding fee scale services.[8] In addition, 25% of the county's residents are uninsured. These residents, even though they are classified among the working poor, do not qualify for tax-supported care and routinely depend on the safety net for services. Thus, the percentage of uninsured patients receiving care at Parkland is twice as high as that among the general population.[2,9]

Parkland has developed its COPC program around 6 key elements: (1) assessment of community needs and assets, (2) community prioritization of health care issues, (3) collaboration with community organizations, (4) provision of primary health care, (5) evaluation, and (6) financing.[10]

Assessment of Community Needs and Assets

The community assessment is epidemiologically based and annually updated. It is used as a management tool to position community health centers and focus public health outreach activities. The information also provides a foundation for health outcome measures and evaluation of community benefits.

Local data are used in the assessment, including information on population variables such as age, ethnicity, and income; birth and birth-related factors; death rate variables; access to primary care; and hospital use. Data derived from the assessment are used to inform individuals involved in the community prioritization process and members of COPC health center community advisory boards.

Community Prioritization

Parkland's approach to community prioritization has followed 2 tracks: (1) leadership forums and (2) community advisory boards associated with each health center. Health care leadership forums have been set up within each community, with members drawn from elected officials representing the community and others identified by "key informants" (e.g., school principals, ministers) as community opinion leaders.

Through nominal group processes, forum members have established community priorities and developed 3-year action plans to address them. Typically, community priorities are aimed at issues that have a direct bearing on health status but have little to do with the medical care system. These issues include education, access to meaningful employment, teenage pregnancy, transportation, and safety.[11]

In addition to the forums, each health center has established a community advisory board to provide input into clinic operations and community needs. The advisory boards have sponsored projects that have an impact on community health, such as interventions aimed at reducing teenage pregnancies.

Occasionally conflicts arise on certain issues, but community residents have come to see Parkland as an advocate and a partner, not as an entity separate from the community. The time and effort invested by Parkland in community work have led to a building of trust and mutual support that is manifested in political backing for additional funding and program improvements.

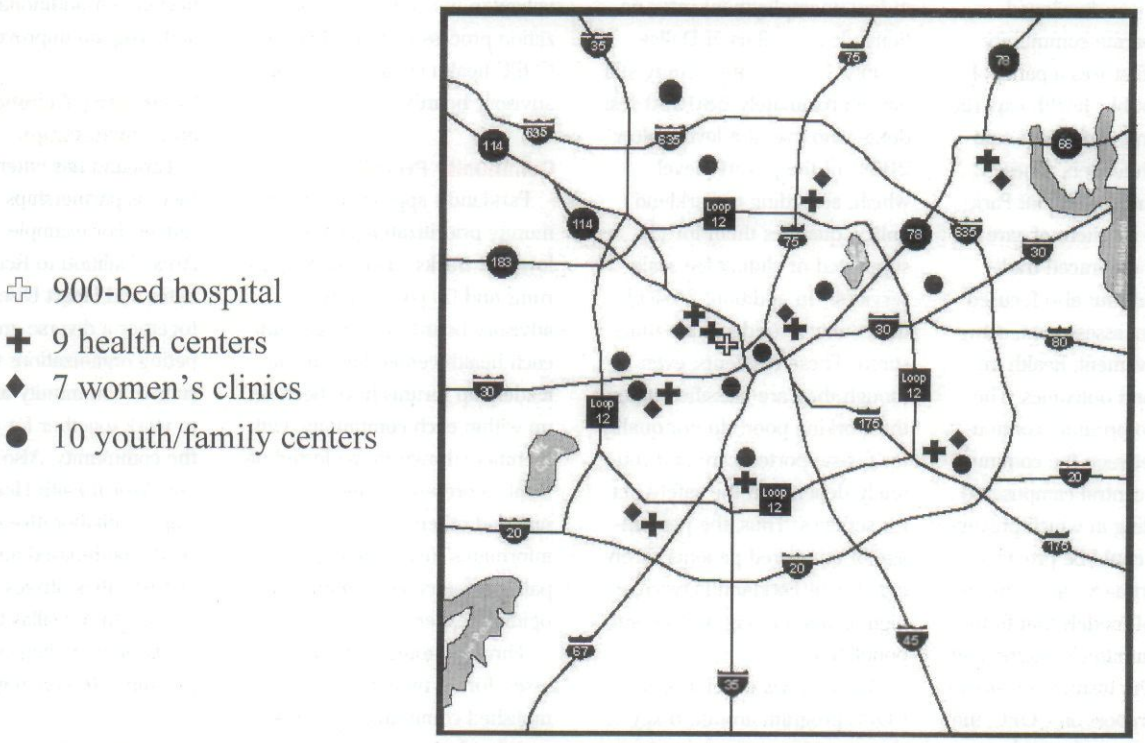
Community Collaborations and Partnerships

Parkland has entered into numerous partnerships and collaboratives. For example, the Dallas Area Coalition to Reduce Diabetes and Heart Disease brings together a diverse group of competing organizations that use results of community assessments to work together for the good of the community. Also, the Dallas-Fort Worth Faith Health Partnership, a collaborative developed by the faith-based and medical communities, strives to improve the health of Dallas County residents by providing care in partnership with congregations.

Community Health Care System

Parkland provides care in both traditional and nontraditional settings (Figure 1). Services are offered through a system of 9 COPC health centers and specialty programs from which care is extended to nontraditional settings, including 22 homeless shelters, 10 schools, 11 churches, and 1 senior citizen center, via multidisciplinary teams composed of a mix of midlevel practitioners and primary care physicians.

The health centers are staffed by employed physicians as well as a cadre of other health professionals. The physicians are board eligible or certified, and, while they each have clinical faculty status at the University of Texas Southwestern Medical School (UTSW), they remain Parkland employees. In addition, special efforts are made to match physicians and COPC employees ethnically to the communities served; 60% of the physicians are African American, Hispanic,



Note: Not shown are: 1 senior center, 11 churches, 22 homeless shelters, mobile mammography, and outreach programs.

FIGURE 1—Parkland community-oriented primary care health centers and clinics.

or Asian (unpublished data, Parkland COPC Administration, 2001). Fifty-four percent of the physicians are women, and roughly half are bilingual (English and Spanish). Other staff are similarly aligned.

Parkland has established a partnership with community organizations to provide other health and social services, creating a "one-stop" shopping network covering all primary care disciplines and dental health. Parkland's women's and children's service and UTSW's obstetrics/gynecology department are jointly responsible for women's health services at the majority of COPC sites and 2 UTSW sites.

Evaluation

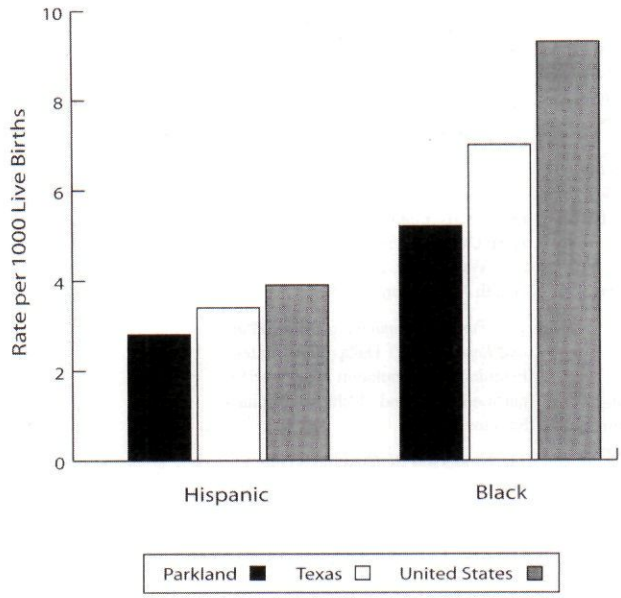
An integral part of the COPC program is assessment of health outcomes and data on the cost of health care services.[12] Parkland has conducted numerous evaluation and outcome studies. One such study, a multiyear community assessment survey (1996–1998), revealed statistically significant improvements in access over time. Another, a 1995 pediatric service use study, showed that COPC patients had significantly shorter inpatient stays than non-COPC patients (i.e., community residents hospitalized at Parkland but not registered in the COPC program) and were 4 times more likely to be admitted electively or by referral.

The latter study, which covered 6 months of admissions to Parkland, also revealed that COPC patients were more likely to have Medicaid coverage than were non-COPC patients and that COPC patients incurred significantly lower charges. Total charges among non-COPC pediatric patients ($8435 on average) were almost 2 times higher than those among COPC patients ($4594 on average) (G. Schulmeirer, MPH; unpublished data; 1995).

Parkland also conducted a study examining service use among adults. According to this study, COPC inpatients admitted to Parkland incurred significantly lower charges than non-COPC inpatients (means of $10 769 and $11 431, respectively) and were significantly more likely to have a shorter length of stay.[2,11,13]

Parkland is the principal provider of prenatal care to uninsured women in Dallas County, accounting for 111 491 prenatal visits in 2001. Roughly 96% of Parkland's pregnant patients received such care during that year. These services are offered in COPC health centers and freestanding health centers throughout the community.

Outcomes at Parkland in terms of stillborn infants and neonatal death rates are impressive. For example, in 2001, the rate of stillbirths per 1000 live births among mothers with at least one prenatal care visit was 6.2, as compared with 18.7 among mothers receiving no prenatal care. Corresponding neonatal death rates per 1000 live births were 3.1 and 13.7 (Parkland Health & Hospital System, unpublished data, 2002).[13] Also, Parkland's neonatal mortality outcomes by ethnicity are significantly better than those for the United States overall and for African Americans and Hispanics residing in Texas[14] (Figure 2).



Source. Parkland Health & Hospital System data, 1996; Texas Bureau of Vital Statistics, 1996; US Bureau of Vital Statistics, 1994, 1995.
Note. As can be seen, outcomes for Parkland were better than those for Texas and the United States overall.

FIGURE 2—Neonatal mortality in minority populations.

Finally, Dallas Healthy Start focuses on reducing infant mortality. This Parkland program has targeted 2 sectors of the city of Dallas, the southeast area and the west area. In 1990, the infant mortality rate in these areas was 11.9 per 1000 live births. By 1996, the rate had dropped to 6.7 per 1000 live births. The socioeconomic situation of these areas changed little during this period, and no other interventions or changes can account for these results.[15]

Financing

The COPC program's 2002 operating budget was $50.2 million; funds were obtained through allocation of tax dollars, the Medicaid disproportionate share program, third-party reimbursements, and sliding scale copayments. To help maintain financial stability, Parkland has developed 3 insurance/access products:

- Parkland HEALTH*plus* (a sliding fee scale payment program), with 60 000 enrollees
- Parkland HEALTHfirst (Medicaid managed care insurance), with 45 000 enrollees
- Parkland KIDS*first* (Children's Health Insurance Program), with 30 000 enrollees

Parkland also has in place a managed care package for its 7700 employees and dependents (the latter totaling more than 15 000).

MOVING FORWARD

In 2000, Parkland faced a major financial challenge owing to the Balanced Budget Act of 1997 (available at: http://cms.hhs.gov), decreases in the Medicaid disproportionate share program, introduction of Medicaid managed care, and increases in the uninsured population owing to changing demographic patterns. The resulting $83 million operating budget deficit was Parkland's first deficit in 20 years. As a result, Parkland engaged in a planning process with the board of managers that explored all options for solving this economic problem, including eliminating COPC.

The planning process showed that eliminating COPC would reduce costs in the short run but that patients would probably obtain care through the more costly emergency room settings at Parkland or the private community hospitals located throughout the county. To garner support for an $83 million increase in residential property taxes in Dallas County, Parkland used outcome studies, efficiency studies, information on changing demographic patterns, and creative financing mechanisms that included $78 million in revenue enhancements and cost reductions.

Parkland's board of managers and the county commissioners decided to increase Parkland's tax rate from $.196 to $.254 per $100 property valuation (an estimated total of $285 440 000 in ad valorem tax support in fiscal year 2001). When, in December of 2000, Parkland was included in the prestigious HCIA-Sachs Institute 100 top hospitals listing, this decision to raise taxes seemed justified. This annual list recognizes hospitals that demonstrate superior performance in financing, operations, and clinical practices. The COPC program was a significant component of Parkland's inclusion in this listing, demonstrating that Parkland is at the forefront of a shift from costly inpatient services to less costly community outpatient primary and preventive care services. In addition to its tax allocation, Parkland continues to cross subsidize at least $100 million of indigent care annually.

FUTURE STEPS

The character of Dallas/Ft. Worth and surrounding counties is changing, not only demographically but also geographically. Many of the problems related to poverty traditionally seen in the inner city are moving to the suburbs and surrounding affluent counties, where there is little infrastructure in place to meet the growing demands of the medically needy. This population shift has increased the demand for new health care services in these outlying areas, and COPC health centers may be added there.

Under current funding mechanisms based on health insurance, improvements in community health status often do not accrue to the bottom line of health care institutions but are

realized in other social and economic sectors. An evaluative mechanism is needed to determine outcomes and benefits when institutions such as Parkland invest in community health status improvement.

Parkland has created such a mechanism in partnership with other health care and academic institutions. The Community Health Improvement Measurement and Evaluation System (CHIMES), the evaluative research arm of Parkland, will document for public and business leaders areas in which community health investment has produced savings for the community, whether in the form of fewer hospitalizations, fewer days lost from work, or less school absenteeism. CHIMES completes the Parkland COPC model.

CONCLUSION

The COPC model, as implemented by Parkland, can be replicated in other urban areas. First, a service delivery system was created that ensures access, continuity, and quality through direct links of primary care with specialty and inpatient services; in addition, each center is accredited by the Joint Commission on Accreditation of Healthcare Organizations. Second, the community is intimately involved in the establishment of health center priorities, community health priorities, and system improvements through leadership forums and advisory boards. Finally, the community works with health professionals in identifying and addressing issues that determine the health and safety of neighborhoods through ongoing collaboratives and partnerships. ■

About the Authors

Sue Pickens, Samuel Ross, Sharon Phillips, and Ron J. Anderson are with the Parkland Health & Hospital System, Dallas. Paul Boumbulian is with the Dallas Regional Program, University of Texas School of Public Health, Dallas.

Requests for reprints should be sent to Sue Pickens, MEd, Parkland Health & Hospital System, 5201 Harry Hines Blvd, Dallas, TX 75235 (e-mail: picke@parknet.pmh.org).

This commentary was accepted June 28, 2002.

Contributors

S. Pickens and P. Boumbulian created the first draft of the article under the direction of R.J. Anderson. R.J. Anderson provided the framework for the article and reviewed and edited each draft. S. Ross and S. Phillips provided oversight of and input into successive drafts.

References

1. *Annual Report 2000.* Dallas, Tex: Parkland Health & Hospital System; 2001.

2. Anderson RJ, Pickens S, Boumbulian PJ. Toward a new urban health model: moving beyond the safety net to save the safety net—resetting priorities for healthy communities. *Bull N Y Acad Med.* 1998;75:367–378.

3. *Annual Survey of Hospitals, 1998 and 1999.* Austin, Tex: Texas Dept of Health; 1999.

4. Institute of Medicine. *Community Oriented Primary Care: A Practical Assessment.* Washington, DC: National Academy Press; 1984.

5. Bass P, Anderson RJ, Boumbulian PJ. *Community Oriented Primary Care: A Plan for Dallas County.* Dallas, Tex: Parkland Memorial Hospital; 1987.

6. *Dallas County Health Checkup, 2000.* Dallas, Tex: Parkland Health & Hospital System; 2000.

7. US Bureau of the Census. Summary file 1. Available at: http://www.census.gov. Accessed August 29, 2002.

8. US Bureau of the Census. Summary file 3. Available at: http://www.census.gov. Accessed August 29, 2002.

9. Texas Health and Human Services Commission. Projected 1999 estimates of the Texas population without insurance in 1999 by county. Available at: http://www.hhsc.state.tx.us. Accessed February 10, 2001.

10. Anderson RJ, Boumbulian PJ. Comprehensive community health programs: a new look at an old approach. In: Korn D, McLaughlin, CJ, Osterweis M, eds. *Academic Health Centers in the Managed Care Environment.* Washington, DC: Association of Academic Health Centers; 1995:119–135.

11. Boumbulian PJ, Anderson RJ. Survival through community services: from sick care to health care. *Baxter Found Health Manage Q.* 1994;16:17–23.

12. Rhyne R, Boque R, Kululka G, Fulmer H, eds. *Community Oriented Primary Care: Health Care for the 21st Century.* Washington, DC: American Public Health Association; 1998.

13. *Parkland Community Benefit Plan and Report, 2000.* Dallas, Tex: Strategic Planning and Population Medicine Department, Parkland Health & Hospital System; 2001.

14. Anderson RJ. Creating a community responsive health care system in Dallas. Paper presented at: International Conference on the Future of COPC; October 17–18, 2000; Leesburg, Va.

15. Scotch R. *Dallas Healthy Start Initiative: Local Evaluation Report.* Dallas, Tex: School of Social Sciences, University of Texas at Dallas; 1997.

Copyright of American Journal of Public Health is the property of American Public Health Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.