This section looks back to some of the ground-breaking public health papers of the twentieth century, reproducing them in their original form and adding a commentary on their significance from a modern-day perspective. This month Mervyn Susser reviews the importance of Kark & Cassel's 1952 paper on community-oriented primary health care. The original article is reproduced with permission of the South African Medical Journal.

Pioneering community-oriented primary care*

M. Susser

At Alma-Ata in 1978, WHO and UNICEF together endorsed the policy of community-oriented primary health care (COPC) (7). However, the ideas guiding and framing this approach had first been given full expression in practice some four decades earlier. The locale was the southern tip of Africa, far removed from the intellectual driving forces of the English-speaking world before the Second World War.

What could account for this unlikely development? First, the concern for social justice and the compassion generated by the First World War and the Great Depression of the 1930s did not leave untouched young minds in the health professions in South Africa. The multicultural, layered and oppressive society that was the heritage of three centuries of external and internal colonialism made those sensitivities the more acute. One much affected by that milieu was Sidney Kark, a brilliant young graduate of the Witwatersrand University Medical School. He conceived the means of converting the emergent discipline of social medicine into a unique form of comprehensive practice. At first together with his wife, Emily, and later with such other subsequently well-known figures as John Cassel, Guy Steuart, Harry Phillips, Eva Salber, and Joseph Abrahamson he pioneered this new form of practice.

Shortly after graduation Sidney Kark was recruited by an unusually enlightened leadership of the National Department of Health (Eustace Cluver, George Gale and Harry Gear, the last-mentioned to become an Assistant-Director General of WHO). Within a year, Kark was assigned with Emily to establish a “health centre.” The site chosen was Pholela, a remote rural area in what was then a “native reserve” (part of the 13% of the country set aside for dispossessed black Africans). The remarkable work of the first decade of that centre is reported in the 1952 article, republished in this issue of the Bulletin, following this commentary. In the midst of the Second World War, from 1942 to 1944, a Parliamentary Commission on “the provision of a national health service for all” carried out an unprecedented survey of national health resources in South Africa (5, 4). Its recommendations were far-reaching, ranging from primary to tertiary care. The explicit model for primary care was the Pholela Health Centre. In 1945, the South African Parliament adopted the recommendation to establish a national network of health centres, but not that for hospital care. By 1949, a total of 44 health centres had been established, only to wither away under the ideologically retrograde apartheid government entrenched from 1948 onwards.

What was so remarkable about the house the Karks built in provincial isolation? In other words, what are the elements of COPC? Here I extrapolate from direct experience of the Karkan milieu (5). The briefest summary might describe COPC as the scientific practice of social medicine, a new entity created by a unique marriage of public health and clinical care.

- COPC is a community, family and personal practice.

First, a community had to be defined. In rural Pholela, the definition was in terms of households bounded geographically and then enumerated: neither census nor vital statistics existed.

Second, practice is not only in a community and for a community, but with the community (5, 6). This was constantly exemplified:
- health workers were recruited and trained from within the community; and

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* This commentary draws heavily on the memorial lecture for Sidney Kark given by Professor Susser on 21 February 1999, sponsored by the Hebrew University/Hadassah Hospital/Department of Social Medicine in Jerusalem.

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these workers went out to the homesteads to help create vegetable gardens and privies, to advise on clubs and associations among them, and hence to elicit and develop consciousness of their needs and the means to meet them.

- COPC requires multidisciplinary and team practice.

The standard vehicle for primary care at that time was solo general practice, and even groups of practitioners were few. The Karks assembled teams of health professionals in health centres—these centres too were novel, even though the term was not having been introduced in the Dawson Report of 1920 in England (7). The health centres were distinguished uniquely by a special array of services and functions to meet the needs of COPC (8) as these evolved and were recognized.

These teams were of necessity multidisciplinary. The ambitious tasks were beyond the reach of a single profession. Health educators worked together with doctors and nurses. Social workers, laboratory technicians, and others worked in continual collaboration and interaction. They had to learn new things from the social and psychological sciences as well as from epidemiology and the public health disciplines.

- The innovations of COPC entailed monitoring, evaluation, and research (9).

Enumeration, as in the Phoela census, was the necessary denominator for research and evaluation of practice. (In Phoela, the census was a do-it-yourself model that does not apply everywhere).

Records that linked families and persons gave the necessary numerators for measuring outcomes in standard vital statistics, and also in customized research to suit particular innovations and interventions.

Monitoring and evaluation were continuous processes. Health centre walls were plastered with charts (borrowed from Dr William Pickles, Yorkshire General Practitioner) showing over weeks and months, graphs of sentinel health events and trends.

Evaluation is the essence of the paper re-published here (2). It is a convincing demonstration of the effects of COPC, in a community up to then almost untouched by any kind of public health and medical service. Some of its key findings are outlined below.

**Syphilis.** In 1949, in another classic paper, Kark showed how intimately syphilis was wrapped up with the migratory labour system institutionalized by the mining industry (10). In the defined community served by the health centre, Kark & Cassell were able to report a decline in total incidence of 60% from 5.8% (347 cases among ca. 6000 population) in 1945 to 2.3% (176 among ca. 7500) in 1950.

**Diet and nutrition.** This was generally neglected by health services. One measure of effect, shown below, was change in the extent that vegetables were cultivated in gardens in Phoela. In a survey carried out in January–February 1941 of 145 homes, 45% cultivated pumpkin, 31% potatoes, 3% of homes cultivated green vegetables, while 26% cultivated no vegetables. In a similar survey of 917 homes carried out in 1950, 37% cultivated pumpkin, 42% potatoes, 14% tomatoes, 21% beans, 15% cabbage, and 11% carrots, with a total of 25 different vegetables being grown.

All expectant and nursing mothers were invited to attend educational sessions with nutrition as a main theme. In 1942, only a few attended; by 1950, 90% of all pregnant women attended. The incidence of kwashiorkor (acute nutritional failure) among young children reflected these changes. In the summer of 1941–42, a total of 10–12 cases per week were seen. By 1950, about the same number of cases were seen in a year.

**Mortality.** In Phoela the crude mortality rate per 1000 declined from 38.3 in 1942 to 13.6 in 1950. Infant mortality is of course the standard marker. In 1942 it was 275 per 1000 (11/40). In 1950, in the whole expanding area covered by the census, all of whose inhabitants had some access to the health centre, it was 101 per 1000 (37/368) — a 63% decline. One must concede the problem of no control data for these considerable changes.

More interesting, therefore, is an ingenious analysis of infant deaths. “Old” families, i.e. those included for more than a calendar year in the area designated for intensive community care — an area expanded year by year as the resources and capability

**Table 1. Effect of COPC on infant mortality, Phoela, 1942–43 versus 1950–51**

<table>
<thead>
<tr>
<th>New families*</th>
<th>No. of live births</th>
<th>No. of deaths</th>
<th>Infant mortality rate (IMR) per 1000</th>
<th>% decline in IMR</th>
<th>Relative risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>New families* (1942 or 1943)</td>
<td>121</td>
<td>34</td>
<td>281</td>
<td>Baseline</td>
<td>Baseline</td>
</tr>
<tr>
<td>New families* (1950 or 1951)</td>
<td>33</td>
<td>10</td>
<td>189</td>
<td>32.7</td>
<td>0.67 (0.36–1.26)</td>
</tr>
<tr>
<td>Old families* (1950 or 1951)</td>
<td>584</td>
<td>58</td>
<td>99</td>
<td>64.8</td>
<td>0.35 (0.24–0.51)</td>
</tr>
</tbody>
</table>

* Decline: 1942–1943 to 1950–1951: new versus old, P<0.001.

* New: enrolled in calendar year. Old: enrolled ≥1 year.
of the health centre grew — were compared with "new" families (those newly subsumed and still in their first year of community care). A reasonable assumption is that this comparison is a test of a learning curve induced by exposure to COPC.

I have here recast the data to permit a direct test against the same baseline for both "old" and "new" families and in terms of risk ratios and confidence limits — tools not in use in 1952. Table 1 shows the decline in infant mortality in "old" versus "new" families from the baseline period 1942–43 to the period 1950–51. For "new" families, the decline was 33.3% (from 281 to 189); for "old" families, the decline was 64.8% (from 281 to 99) (P < 0.001).

What happened to that national commitment to serve all the people through a network of health centres? Within 5 years, inevitably in a society totally committed to racial segregation, the policy had been abandoned. Segregation of blacks was nothing new but, after 1948, separation by race was entrenched both as the government ideology of Apartheid and a cast-iron constitutional fact in South Africa. By then, more than 40 health centres had been established across the country. They were steadily starved of funds and gradually allowed to wither away (11). In 1959, with doors closing on all such progressive developments, Sidney and Emily Kark left South Africa for good.

This closure was, however, not the end of Karkian endeavour and influence, either in South Africa or elsewhere. First, the joint interest in the Karks' approach, both by Israel (the health ministry and the health services of the national trades union organization), on the one hand, and by WHO, on the other, brought them to Jerusalem in 1960 to found a model teaching health centre there. There, the international programme for students from the less developed world spread the ideas of COPC far and wide.

Second, in 1957, H. Jack Geiger had spent a 6-month elective course of study (while a final year medical student in the USA) at Phoolela. In the early 1960s, inspired thereby, he gained the sponsorship of the U.S. Office of Economic Opportunity to found two health centres, one urban and one rural, based on the Kark model. Today, a network of 800 or more such centres persists, if with fluctuating fortunes, and they serve some 10 million low-income people. Steadily if slowly, health centres play a growing part in medical schools, and the American Academy of Family Medicine explicitly requires training in community-oriented primary care. In 1998 Geiger was given the Lienhard Medal of the prestigious Institute of Medicine, awarded specifically for innovations in medical care in the USA.

Finally, as the walls of the Apartheid State at last began to crack in the 1980s, a young generation of South Africans heard the call of Alma-Ata, and began to search their history for models to guide health care in what they recognized as an imminent new era (12). That era is upon us, primary care is once more a national priority, and Minister of Health Nkosazana Zuma, who as a child was a beneficiary of the Phoolela Health Centre, has declared her intention to restore it from its current desolate condition as a part of the national heritage.

It is a grace note that much of this history is told with detail and precision in an autobiography by (the late) Sidney Kark and Emily Kark that has recently been published by their Alma Mater, University of the Witwatersrand (13).