Commentary: On the report of the South-East London Screening Study

Jeremiah Stamler

The report of the South-East London Screening Study\(^1\) neatly exemplifies the research paradox described recently by Stephen Jay Gould: ‘... straightforward facts enshrouded in difficult or ambiguous meanings’.\(^2\) In a randomized controlled trial of people, baseline ages 40–64 years, from two South-East London general practices, two multifactor screenings 2 years apart (1967–1968 and 1969–1970) were associated with no significant differences between Screened and Control groups in 5-year incidence of disease morbidity or in 9-year rates of GP consultations, hospital admissions, certified sickness work absenteeism, or mortality. Straightforward data! But what do they mean? What conclusions can be drawn from them? Based on the last sentence of the report, the authors are apparently sure they have the answer: down with multiphasic screening of the middle-aged in general practice. But for this commentator, Gould’s words fit: ‘straightforward facts enshrouded in difficult or ambiguous meanings’.\(^2\)

Why? The nub of the problem is embedded in the statement of Study purpose: ‘... assess the value, if any, of introducing a general practice based screening service for 40–64-year-olds as an extension of the existing National Health Service’.\(^1\) Broad, general, vague; it could mean a multitude of things. And that’s it as to aims; no specific prior hypotheses or questions are stated. To get some idea about what the authors actually had in mind, one has to go through Methods and Results step-by-step.

That effort sheds light on some specifics, but leaves others in the dark. Thus:

1. Was health education and motivation for Screening group patients a component of the ‘... screening service ...’, e.g. in the personal letter of invitation from the GP? at the screening clinic at year-0 and year-2? in-between? Nothing is said about this. The retrospective estimate of costs (see Results) is interpretable as indicating zero or negligible resources for patient health education and motivation.

2. Since the ‘... two screening sessions constituted the “treatment” under assessment in the controlled trial’ (sic!), what resulted? Specifically, what ‘... further investigations, diagnoses and treatment ...’—in what percentages of patients—did GPs undertake based on information passed on to them from the two screening sessions? What resources were available for this? No details are tabulated. Table 4 shows similar GP consultation rates for Screened and Control groups during the 9 years of follow-up—overall, for men 3.2 and 3.1 (per person per year?), for women 4.0 and 3.8 (non-significant differences).\(^1\) In Results, there is the further qualitative statement: ‘For the majority of abnormalities revealed by screening, with the exceptions of anaemia and high blood pressure, little new therapeutic intervention was introduced, although advice on stopping smoking and weight reduction was given to all for whom it was appropriate’.\(^1\) Meaning what? What percentage of patients? What kinds of ‘... therapeutic intervention …’ and ‘... advice …’?

To focus on the major cardiovascular disease (CVD) risk factors responsible for extensive morbidity, disability, and premature death among UK middle-aged adults, the screening procedures included measurement of serum cholesterol and blood pressure (Table 2), and presumably smoking habit (from text and Table 3, but not Table 2). Nothing is said on the resources available to intervene on these risk factors. No data are given on cut-point(s) for serum cholesterol classification or on advice for patients with high values (however defined). The report says nothing about counselling to modify adverse eating (or drinking, or physical inactivity) patterns. The cut-point for raised blood pressure was high—diastolic (phase V) $\geq 105$ mmHg. At 5-year follow-up, hypertensive patients so defined made up $2.7\%$ of the Screened group and $3.1\%$ of the Control group (group Ns of 1651 and 1950, respectively). These rates are obviously similar, but the trial was weak in statistical power to detect a meaningful impact on high blood pressure prevalence so defined. At 5-year follow-up, the percentage still smoking was similar in the two groups (Screened 51.5%, Control 50.8%). Since the major CVD risk factors were not impacted, the findings on CVD disease were as expected—no significant differences between the two groups in rates of consultation, morbidity, hospitalization, mortality. (I leave aside the question of group size and consequent statistical power to detect meaningful differences in these end points, not mentioned by the authors.)

3. The cited purpose of the study includes a potentially important qualifier: ‘... value of ... a screening service ... as an extension of the existing National Health Service’ (my emphasis—JS).\(^1\) This is implicit recognition that the societal context of the trial could have influenced its outcome. The report deals hardly at all with this aspect. But it may have been, and probably was, important. To list societal factors possibly influencing the specific outcomes: policy commitment at the national level by the NHS and UK government to prevention of epidemic chronic diseases? Resources allocated? Budget of the NHS in 1967–1968 and the years of the trial? Proportion of the UK gross national product (GNP) dedicated to the NHS? Support staff (nurses, dieticians, physiotherapists, technicians, aides, clerks) available to NHS GPs, to assist with the add-on of work? Intellectual preparation of GPs and staff for a disease prevention and control effort? Availability of community public health resources to help with the effort? Their commitment and mobilization? Mass
media messages—advertising and other—influencing popular behaviour (adversely, favourably)? Special commercial interests (e.g. the tobacco, food, beverage industries) and their adverse influences? As decades of public health experience show, such societal factors are critical for public health efforts—their success or failure. While this commentator has only limited knowledge of the interplay of UK societal factors in the trial years 1967–1968 and thereafter, his general impression is that their overall impact was generally adverse, not favourable.

In this regard, the authors’ observation in Discussion is relevant: ‘The screening service … appeared to have been generally well received by the population …’.1 Too bad that for the NHS patients the apparent inadequacy of the interventions resulted in a lost opportunity. Relevant also in this regard is the authors’ statement as to costs: ‘… a relatively low figure, … approximately a fifth of that charged by private screening organizations in the UK …’.1 From this commentator’s limited knowledge about such private efforts in the UK, they serve the more affluent social strata (social classes I and II), which make up a small minority of the South-East London practices (Table 1). Their services are generally extensive, including health education, motivation, referral, and follow-up.

Again, the social context is relevant. During the post-World War II decades, social classes in the UK experienced similar trends in the coronary epidemic—with only limited knowledge about such private efforts in the UK, they serve the more affluent social strata (social classes I and II), which make up a small minority of the South-East London practices (Table 1). Their services are generally extensive, including health education, motivation, referral, and follow-up.

We are now in a new century—more than 30 years since the South-East London Study was launched. Much that may have seemed equivocal in 1967–1968 is now crystal clear e.g. as to the number one problem: epidemic CVD and the role of lifestyle-related major risk factors (my area of expertise). Their impact on CVD risks is continuous, strong, graded, independent, combinative and aetiologically significant. They can be prevented and controlled by safe nutritional-hygienic measures plus modern pharmacotherapy as indicated. The population is interested in their prevention and control, and (paced by higher socioeconomic strata) has acted favourably—albeit in a limited way still—to improve matters, despite the paucity of resources brought to bear to accomplish this, and the ‘noise in the system’ from vested commercial interests. At least from the US national surveys by the Department of Agriculture in the 1960s, improvements in lifestyles, specifically eating patterns, are attributable mainly to influences on the population from two sources—health professionals and the mass media. These improvements, and their favourable impact on such major risk factors as serum cholesterol and blood pressure, account significantly for declining CVD death rates.

With this as background, what in the year 2001 is to be concluded about the South-East London Screening Study? At national and international CVD meetings, sessions are organized, particularly for clinicians, on ‘How to …’. The South-East London Screening Study is a historically useful case report on ‘How not to …’. It shows that a screening service is in fact not a treatment; contrary apparently to the authors’ original concept, screening is a means to an end, not an end in itself. It can be useful when related components are in place to optimize the effort before, during, and after—and especially when, by virtue of sound national public policy and resources made available for sustained implementation of that policy, the societal context aids and abets the efforts of physicians and other health professionals, including their screening efforts.

To conclude, screening in general practice does not serve, despite support by the population, when done as in the South-East London Study in the 1960s (in the societal context of that time), and with virtually no resources available to the NHS general practices to intervene effectively with patients in relation to screening efforts and results.

Given the specifics of this very particular, limited, dated study, its negative results are not generalizable. Its findings cannot be soundly interpreted as an evidence-based foundation for the authors’ concluding generalization—sweeping, unqualified, over-reaching, absolute—against all screening in general practice. That is simply warmed-over dogma.

As we first learned in the 19th and early 20th centuries in regard to epidemic infectious and undernutritional diseases, and then learned again in the second half of the 20th century in regard to epidemic non-infectious CVD and neoplastic diseases, their prevention and control is a sustained complex process, motley, variegated, involved, proceeding at multiple societal levels. The health care services sector is one of those levels, an important one, and screening—soundly employed—is one (among many) of its useful tools.

References
