

PRACTICE OBSERVED

Practice Research

Narrowing the health gap between a deprived and an endowed community

G N MARSH, D M CHANNING

Abstract

A 15 month campaign by a primary health care team in Stockton on Tees raised the uptake of preventive care of its patients in a severely deprived area to a level generally exceeding that of a more endowed neighbouring community. This was achieved by opportunistic attention after unrelated consultations, writing twice to each household with a list of its outstanding items necessary for preventive care, using health visitors to encourage attendance, and occasionally undertaking preventive care in patients' homes. Extra clerical staff were needed to implement the new recording and monitoring procedures introduced.

With rigorous monitoring and organisation general practitioners may improve the uptake of preventive health care by their more deprived patients.

Introduction

In a previous study we showed that despite equal access to our comprehensive primary health care team by two communities, one deprived and one endowed, there were great differences in their morbidity and uptake of preventive care services.^{1,2} Our findings

are supported by subsequent independent studies showing such differences nationally and in our own region.^{3,4}

Here we describe our efforts to improve the uptake of preventive care in our deprived community.

Patients and methods

SAMPLES

Our five partner practice in suburban Stockton on Tees serves 15 000 patients. Our previous study compared 587 patients living on a nearby severely deprived council estate with an equal number of control patients, matched by sex and nearest birthdate, from a comparatively well endowed private housing area equidistant from the practice. These samples were compared on a matched pair basis by abstracting data from their medical records as at 30 September 1984.^{1,2}

On 1 January 1986 we introduced a structured programme to improve the uptake of preventive care in the deprived community. Data for this study were abstracted from medical records as at 31 March 1987, 15 months after the start of this programme and two and a half years after the original survey.

Because some patients had died and others had moved or left the practice only 328 (56%) of the original 587 matched pairs had both members remaining. We rejected as unrealistic an updated comparison confined to these remaining pairs as this would have excluded too many current deprived patients—notably, all children under 2½ years old. The present sample of 590 deprived patients comprised the 405 (69%) remaining of the original 587, together with the 185 newer patients from the deprived estate who had been registered with the practice for at least a year or born into the practice during that year. The required 262 new or reallocated controls from the endowed area satisfied the same criteria and were matched not only by sex and age but also, as far as possible, by length of registration with the practice. This sample of matched pairs did not differ significantly from the previous one in sex and age distribution.

The statistical tests used were the McNemar test to compare matched pairs (1987 deprived versus 1987 controls) and the χ^2 test (1987 deprived versus 1984 deprived). All significances were based on two tailed tests.

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PREVENTIVE CARE CAMPAIGN

The controls from the endowed area continued to receive the normal facilities available to all patients: access to preventive care clinics publicised by notices in waiting rooms, counselling by health visitors for families with children, practice brochures,⁵ and the recent innovation of quarterly practice newsletters.

discuss and encourage preventive care during their visits to patients' homes. Thirdly, twice during the campaign standard letters were sent to the senior female member of each household describing our attempt to improve preventive care and listing on a separate sheet the outstanding items for each member of the household, members with no outstanding items were also listed, with a congratulatory comment.

Fourthly, the practice nurse, who implements most preventive care

Blue Hall Household											
Surname: <i>Luexless</i>		Address: <i>24 Sink Street.</i>									
Forenames (over 16)	Date of birth	Sex	Date (Y/N) smoking	Date tetanus	Date blood pressure	Date urine	Date well man	Date family planning advice	Date smear	Date well woman	√ = all complete
<i>Lucy</i>	<i>29.6.71</i>	<i>F</i>	<i>12.4.85</i>	<i>5.5.86</i>	<i>5.5.86</i>	<i>5.5.86</i>		<i>21.3.84</i>	<i>10.3.85</i>	<i>5.5.86</i>	<input checked="" type="checkbox"/>
<i>Alan</i>	<i>8.11.49</i>	<i>M</i>	<i>13.1.84</i>	<i>1.9.82</i>	<i>17.1.84</i>						
<i>Carole</i>	<i>5.1.70</i>	<i>F</i>	<i>1.2.87</i>		<i>1.2.87</i>			<i>7.4.86</i>			
Forenames (under 16)	Date of birth	Sex	1st Triple D T Pol Pert	2nd Triple D T Pol Pert	3rd Triple D T Pol Pert	Measles Imm. date	Booster D T Pol	Comments (√ = all complete)			
<i>Darren</i>	<i>21.5.72</i>	<i>M</i>	<i>✓✓✓✓</i> <i>13.11.72</i>			<i>I</i> <i>10.74</i>	<i>-✓✓</i> <i>4.9.86</i>	<i>✓ Tick old for triples</i>			
<i>Kevin</i>	<i>13.9.81</i>	<i>M</i>	<i>✓✓✓R</i> <i>12.1.82</i>	<i>✓✓✓R</i> <i>8.4.82</i>	<i>✓✓✓R</i> <i>7.10.82</i>						
<i>Sandra</i>	<i>6.2.84</i>	<i>F</i>	<i>✓✓✓✓</i> <i>16.5.84</i>	<i>✓✓✓✓</i> <i>9.5.84</i>	<i>✓✓✓✓</i> <i>2.12.84</i>	<i>✓</i> <i>7.3.86</i>	<i>✓✓✓</i> <i>15.5.87</i>	<input checked="" type="checkbox"/>			
For immunisations enter: √ (done), I (infected), C (contraindicated), R (refused), and date underneath.											

Example of preventive health care record card.

TABLE 1—Comparison of immunisation state of deprived patients and controls

	No of pairs		No (%) deprived		No (%) controls		Improvement in deprived patients	Significance‡	1987 Deprived patients better (+) or worse (-) than 1987 controls
	1984	1987	1984	1987	1984	1987			
Full immunisation:									
6 months to <5	69	79	30 (43)	57 (72)	58 (84)	72 (91)	+++	--	
5 to 15	85*	113*	13 (15)	28 (25)	31 (36)	44 (39)			-
Effectively complete:†									
6 months to <5	69	79	40 (58)	67 (85)	65 (94)	75 (95)	+++		(-)
5 to 15	85*	113*	37 (44)	81 (72)	67 (79)	91 (81)	+++		

*In the 5 to 15 age group 62 matched pairs in 1984 and 18 in 1987 were omitted because of uncertainty of data for one or both members who had arrived from other practices.
 †"Effectively complete" includes full immunisation and also immunisations defaulted but later inapplicable because of refusal, infection, or age (pertussis age 6, measles age 10).
 ‡(-) 10% Level, p<0.1; - 5% level, p<0.05; -- 1% level, p<0.01; +++ 0.1% level, p<0.001.

Specifically for patients from the deprived area the following additional measures were adopted.

Firstly, to the front of each A4 record folder was affixed a card tabulating all members of that household, with boxes for the preventive care items appropriate to each. As each item was completed the date was inserted in the corresponding box: boxes left blank denoted outstanding items (figure). Thus doctors were prompted about any outstanding preventive care at the start of each consultation and could discuss and proffer it for every household member no matter who consulted.

Secondly, the health visitors were continually supplied with copies of the updated household cards from the front of the folders, enabling them to

procedures, restructured her day to give immediate attention to deprived patients who presented specifically for preventive care or were passed on by a doctor after an unrelated consultation. Receptionists gave prompt appointments to patients who telephoned.

Fifthly, progress was monitored quarterly, when each doctor was issued with a set of updated tables showing the proportion of his (and other doctors') deprived patients for whom the various items of preventive care had been completed.

Sixthly, progress and problems were regularly discussed at the monthly meeting of the house committee of the primary health care team. This helped to maintain enthusiasm and coordinate the team's efforts.

Seventhly, during the last quarter of the campaign some prearranged home visits were made jointly by doctors and health visitors with trays of equipment to provide outstanding preventive care for particularly recalcitrant households.

controls and, in all but two cases, significantly so. The proportion of smokers decreased marginally in both groups but was still far higher for deprived patients (62%) than controls (24%).

Results

Highly significant rises in uptake of immunisation by deprived children were achieved between 1984 and 1987, and the proportion of deprived children whose immunisations were "effectively complete"—that is, in-

Discussion

For many years the practice had assumed that adequate preventive health care of our deprived community was being achieved with fairly informal extra effort—health visitors spending more time in the area, paying opportunistic attention to the deprived families

TABLE II—Cervical smears and contraception recording for women (previous five years)

	No of pairs		No (%) deprived		No (%) controls		Significance*	
	1984	1987	1984	1987	1984	1987	Improvement in deprived patients	1987 Deprived patients better (+) or worse (-) than 1987 controls
Cervical smear taken:								
Age 17-19	21	24	12 (57)	16 (67)	10 (48)	8 (33)		(+)
Age 20-45	111	115	87 (78)	95 (83)	87 (78)	96 (83)		
Age 46-69	47	43	19 (40)	27 (63)	32 (68)	31 (72)	(+)	
Contraceptive method recorded:								
Age 17-19	21	24	17 (81)	19 (79)	11 (52)	9 (38)		+
Age 20-45	111	115	95 (86)	104 (90)	91 (82)	93 (81)		+

*(+) 10% Level, p<0.1; + 5% level, p<0.05.

TABLE III—Health care criteria for adults (previous five years)

	No of pairs		No (%) deprived		No (%) controls		Significance*	
	1984	1987	1984	1987	1984	1987	Improvement in deprived patients	1987 Deprived patients better (+) or worse (-) than 1987 controls
Antitetanus:								
Men over 16	159	170	31 (19)	73 (43)	57 (36)	61 (36)	+++	
Women over 16	200	205	39 (20)	113 (55)	30 (15)	48 (23)	+++	+++
Blood pressure:								
Men over 16	159	170	61 (38)	95 (56)	60 (38)	74 (44)	++	+
Women over 16	200	205	134 (67)	163 (80)	135 (68)	143 (70)	++	+
Urine analysis:								
Men over 16	159	170	32 (20)	83 (49)	36 (23)	57 (34)	+++	++
Women over 16	200	205	111 (56)	152 (74)	113 (57)	121 (59)	+++	++
Well person clinic:								
Men 30-70	87	83	5 (6)	34 (41)	10 (11)	24 (29)	+++	
Women 20-65	156	153	15 (10)	92 (60)	35 (22)	45 (29)	+++	+++
Smoking habits known:								
Men over 16	159	170	58 (36)	101 (59)	72 (45)	84 (49)	+++	(+)
Women over 16	200	205	139 (70)	171 (83)	133 (67)	149 (73)	++	++
Smokers (of those known):								
Men over 16		N/A	40 (69)	62 (61)	26 (36)	27 (32)		---
Women over 16		N/A	93 (67)	107 (63)	26 (20)	29 (19)		---

*(+) 10% Level, p<0.1; + 5% level, p<0.05; ++ 1% level, p<0.01; +++ or --- 0.1% level, p<0.001.

cluding those who had previously defaulted on immunisations that later became inapplicable because of refusal, infection, or age—was by 1987 only slightly below that of the controls in both age groups (table I). Though the gap had narrowed considerably, the proportion of controls fully immunised for age was still significantly higher; the low figures for all 5-15 age groups for this criterion were due mainly to frequent refusals of pertussis immunisation during the anti-immunisation scare that occurred a few years ago, which we believe influenced the deprived community more than the controls.

Cervical smear rates for the deprived patients improved for all three specified age groups between 1984 and 1987, notably in the 46-69 age group, whose rate had previously lagged significantly behind that of their controls but by 1987 was only marginally lower (table II). The 1987 figures would have been higher had not five deprived women refused smears. Contraception recording by 1987 was significantly higher for deprived women than for controls.

Comparisons of other criteria of adult health care are shown in table III. Antitetanus immunisation, blood pressure measurement, urine analysis, attendance at well man and well woman clinics, and the recording of smoking habits all increased highly significantly for the deprived population between 1984 and 1987, with these patients invariably finishing ahead of the

when they presented, and through the presence of a small peripheral community clinic operated by the district health authority. Our 1984 study showed this assumption to be false.¹² On many criteria deprived patients had a lower uptake of preventive care than more endowed patients, the deficit being significant in the cervical smear rate for older women (46-69) and highly significant in childhood immunisations and attendance at well man and well woman clinics (combined). As the considerably higher morbidity shown for deprived patients underlined the need for maximum preventive care we decided on a more strenuous approach.

The 15 month intensive programme described here improved the preventive care of our deprived patients to a level perhaps unique for any such community in Britain. At the end of the programme the immunisation state of younger children and cervical smear rate for older women were only slightly behind those of the controls, and on all our other criteria (except smoking) the deprived patients were well ahead. A slight sense of frustration, however, remains as the same effort directed towards a more well endowed or enlightened

community would surely have been even more rewarding in terms of a higher response.

Our first line of attack was to take advantage of the fairly high consultation rate among deprived patients by offering appropriate preventive care whenever such patients presented. Fundamental to this was a good record system,⁶ particularly the innovatory card on the front of each patient's record folder, which informed the doctor of the care outstanding for the whole household. The immediate availability of the practice nurse was also a valuable adjunct as a system of return appointments is often ineffective for such patients.

Simultaneously deprived patients were encouraged to attend for outstanding care by letter, and this message was vigorously reinforced by health visitors. Writing to households (twice) with lists of outstanding items certainly had an effect, although this was slow and would probably be much quicker in an endowed community. Some mothers brought their lists along to the surgery to arrange appointments.

When all else failed prearranged visits by a doctor and a health visitor armed with a tray of equipment to particularly apathetic families were occasionally helpful, although a few households stubbornly refused all such overtures.

The quarterly circulation within the practice of "league tables" showing the latest "scores" of each doctor with regard to his or her patients—accompanied by appropriate ribald comments—helped to sustain the initial enthusiasm and acted as a spur to further effort.

The programme necessitated the employment of extra staff—funded by various research projects or provided virtually free by the Manpower Services Commission—initially to analyse patients' records and prepare preventive care cards and later to update the cards for a whole household as soon as any member had received

preventive care, prepare and despatch around 500 wordprocessed letters to households, and undertake the monitoring calculations. The current allowance of two ancillary staff for each doctor is hopelessly inadequate for preventive care at this level; three staff members per doctor would probably be a minimum requirement.

We were fortunate that most of our deprived families lived in a geographically circumscribed area, but this is true for many practices. Nevertheless, where this is not the case general practitioners and health visitors, and for that matter receptionists, are usually well aware of the deprived families in the practice, and concentrating effort on these people initially, aided by their high consultation rates, would bring rapid improvements to the most needy families.

Though this report reflects the efforts of the entire primary health care team, we thank in particular Mrs Kathleen McFarlane and Miss Lynn Ward, who coped with the central recording and serial analysis.

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ONE HUNDRED YEARS AGO

Sir, I am very glad to see that you have opened your columns to a discussion on "How Shooting Accidents Occur," and that so experienced a sportsman as Sir William Dalby has followed up your own remarks on the principle that "prevention is better than cure." No one can doubt that this subject is particularly adapted to the pages of a medical journal, and the frequency of these accidents, no less than their preventable nature, makes the inquiry into their causation one of real importance. My friend, Sir William, writes with the authority of long experience, and I agree with much of what he says. But I cannot help thinking that the dangers included under his first two headings would be lessened, and perhaps removed, by the universal adoption of hammerless guns. This ingenious mechanism makes the half cocking process so simple as to prevent that confusion between the triggers and the hammers which is so great a stumbling-block to beginners, and the slipping away of the hammer from the point of the thumb in cold weather, the pulling back by a twig or branch when going through a hedge, and, last but not least, the peril in which the sportsman is sometimes placed by a careless or inexperienced loader. For it is obvious that as the hammerless gun always closes at half-cock after the insertion of the cartridges, no accident can possibly occur when all tampering with the safety sliding cover is absolutely forbidden. Grouse driving, I agree with Sir William to be the cause of much mischief, and the foot must be put firmly down on the practice of following birds. But to many this habit is quite irresistible, and to avoid mischief the recommendation of the Duke of Beaufort (Badminton Library Shooting Vol.) should be adopted, that "there should be some sort of screen between all batteries." This would enable the guns to shoot freely all round, and would obviate the risk which I hardly think is yet enough recognised, of shot, and more especially chilled shot, glancing back or to one side from stones or roots, or even from the ground hardened by frost. Nor am I quite sure that a high wind may not deflect some portion of a charge from its right direction and land some of the pellets in or near the occupant of the next battery. The only accident which I have seen this year was caused by one of the most experienced members of the party, who described to me the horror with which he found that he had freely peppered his neighbour after firing, as he thought, in a perfectly safe direction and well away from the adjoining battery.

But what we have to come to is this: Putting aside all unavoidable causes, are shooting accidents due to want of care, or to ignorance? You adopt the first; Sir William argues in favour of the second. I agree with you. No one can have seen much of cover shooting without regretting the culpable rashness with which some so-called sportsmen handle their guns, and the recklessness which is the result of jealousy and wholesale rivalry as to the individual contributions to the bag. Nor can it be denied that the arrangements of the ordinary *battue* are of a very dangerous character. Outside a wood we place a certain number of guns, and inside an advancing line of beaters, armed and unarmed, walk forward and drive everything to the outside. Then the fire grows fast and furious, for the pheasants rocket up into space, and hares and rabbits swarm in perplexing numbers, and tempt the oldest hands into rashness. Shot now begins to swish almost as though the opposing parties were seriously under fire, and hairbreadth escapes are made to be afterwards recounted at luncheon or in the smoking-room. Caution and moderation are at this time all essential, and whoever habitually disregards the first principles of sport and pulls trigger at a low-flying bird or any creeping thing after he hears the cry of "guns ahead!" or sees the advancing forms brushing through the rough ground, should be carefully left out when invitations to the next "shoot" are being made up. Whether this is or is not a true picture I will leave to the recollections of your readers, merely reminding them of the old story of the beater who declined to take a message to a well known nobleman stationed in the middle of a wood because, as he said, "Lord — always fires when he sees anything move." This is evidently the motto of some modern sportsmen, and instead of labelling them dangerous, and keeping as well as possible out of their way, I would advise a tonic course of "boycotting" until they recognised the responsibilities as well as the pleasures of sport, and the discredit into which it may fall by their means; and it will do us all good to take stock of our own individual experience, and see whether the most careful among us may not have something to learn or to unlearn.—I am, etc., Robert Farquharson.

(*British Medical Journal* 1888;i:159)