

CORDELIA MOLLOY/SPL

THIS WEEK'S RESEARCH QUESTIONS

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Opiate substitution: needles and thorns

Reduction of harm among injecting drug users is a major theme of the International AIDS Conference beginning this week in Vienna, and of this week's *BMJ*. The results of a prospective observational study by Jo Kimber and colleagues (p 135) demonstrate the role of opiate substitution treatment in helping this population. In a single primary care facility in Edinburgh, the treatment was associated with reduced mortality, especially in the long term—although overall duration of injecting drug use was not reduced.

In an accompanying editorial (p 107), Evan Wood reflects that despite much evidence for the benefits of such treatment, the availability of methadone is limited, often in the places that it is most needed. Ideology regularly trumps science in the thorny field of drug policy, he says, and doctors and scientists have a role to play in changing this state of affairs.

In the *BMJ* podcast, co-author of the study Roy Robertson talks about the findings and some of the wider issues surrounding opiate substitution (www.bmj.com/podcasts).

The older AIDS “orphans”

Also timely in view of the International AIDS Conference is a study by Tim Kautz and colleagues (p 136). HIV/AIDS causes deaths mainly among “prime” adults aged between 18 and 59 and, as such, is responsible for orphaning millions of children—more than 12 million in sub-Saharan Africa to be exact. However, the epidemic is also taking a toll on older people in Africa, who often rely on family members for support and in turn help bring up young children within the extended family.

Kautz and colleagues looked into this poorly characterised problem by analysing Demographic and Health Survey data in 22 African countries from 2006. They found that deaths from AIDS could be responsible for 582 200-917 000 people over 60 living on their own and 141 000-323 100 living only with children under 10.



ROB COUSINS/PANOS

LATEST RESEARCH: For these and other new research articles see <http://www.bmj.com/channels/research.dtl>



Reducing invasive testing for IBD

Patrick F van Rhee and colleagues did a meta-analysis to investigate whether testing for faecal calprotectin, a sensitive marker of intestinal inflammation, in

the investigation of suspected inflammatory bowel disease reduces the number of unnecessary endoscopic procedures. Findings of the 13 included studies suggested that the test was a useful screening tool for identifying patients who were most likely to need endoscopy. The power of the test to safely exclude inflammatory bowel disease was significantly better in studies of adults than in studies of children (doi:10.1136/bmj.c3369).

HeLP-her to help herself

As debate flares up in the UK news about how to tackle obesity (p 118), one of this week's studies may provide clues. Few trials have been aimed specifically at prevention (as opposed to treatment) of weight gain even though it's been declared an important target. And although lifestyle interventions have shown some positive results, it's not clear which approaches work best. Women of reproductive age might be especially likely to benefit and to pass on benefits to family members.

Catherine Lombard and colleagues' healthy lifestyle programme (HeLP-her) trial investigated a self management intervention delivered in the community to help young mothers avoid weight gain (p 137). Women were cluster randomised according to the primary school attended by their children. Those in the intervention group attended four interactive group sessions that involved simple health messages, behaviour change strategies, and group discussion, and they received monthly support by text message for 12 months. The control group attended one non-interactive information session based on population guidelines on diet and physical activity.

The intervention seemed successful—participants in the intervention group did not gain weight over 12 months, unlike those in the control group. The difference was judged to be clinically important, and it was similar to that shown with more intensive and costly interventions. The authors suggest that strategies like this one could bridge the gap between intensive treatment programmes and broad population health initiatives.



WWW.BREAKINGMEDIACROFOTO/IA

Survival and cessation in injecting drug users: prospective observational study of outcomes and effect of opiate substitution treatment

Jo Kimber,^{1,2} Lorraine Copeland,³ Matthew Hickman,¹ John Macleod,² James McKenzie,³ Daniela De Angelis,^{4,5} James Roy Robertson^{3,6}

EDITORIAL by Wood
FEATURE, p 124
ANALYSIS, pp 127, 129

¹Department of Social Medicine, University of Bristol, Bristol BS8 2PS

²National Centre in HIV Epidemiology and Clinical Research, University of New South Wales, Sydney 2052, Australia

³Muirhouse Medical Group, Edinburgh EH4 4P

⁴MRC Biostatistics Unit, Institute of Public Health, University of Cambridge

⁵Health Protection Agency, Centre for Infections, London

⁶Division of Community Health Sciences, University of Edinburgh, Edinburgh EH8 9AG

Correspondence to: M Hickman
matthew.hickman@bristol.ac.uk

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bmj.com/podcasts

Coauthor Roy Robertson discusses this paper's findings in a *BMJ* podcast at www.bmj.com/podcasts

Response on bmj.com

"For the sake of patient safety in a particularly vulnerable patient group, we need urgently to review prescribing of opiate substitutes and develop available alternative approaches, particularly those that involve pharmacological blockade."

Andrew J Ashworth, general practitioner principal, Edinburgh

To submit a rapid response, go to any article on bmj.com and select "Respond to this article"

STUDY QUESTION What is the association between opiate substitution treatment delivered in routine primary care and survival and long term cessation of injecting among injecting drug users?

SUMMARY ANSWER Opiate substitution treatment is associated with increased survival among injecting drug users but is also associated with a lower chance of achieving long term cessation.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Injecting drug use is associated with excess mortality and morbidity. Though opiate substitution treatment reduces the risk of death, it does not seem to be because it promotes injection cessation. This is a balance between saving lives and achieving abstinence.

Study design

Prospective open cohort study.

Participants and setting

794 patients with a history of injecting drug use presenting at a single primary care facility in Edinburgh in 1980-2007. We followed up 655 (82%) by interview or linkage to primary care records and mortality register, or both, and included 10 390 person years at risk. In total 557 (85%) participants had a history of opiate substitution treatment, and 189 (29%) were HIV positive.

Primary outcomes

Duration of injecting (years from first injection to long term cessation: last injection before at least five years without injecting); mortality before cessation; and overall survival.

Main results and role of chance

277 patients achieved long term cessation, 228 died, and half of survivors had poor health related quality of life. Leading causes of death were HIV (45%), drug overdose (24%), and liver disease/injury (16%). Median time from first injection to death was 24 years for those with HIV and 41 years for those without. For each additional year of opiate substitution treatment the hazard of death before long term cessation fell by 13% (95% CI 17% to 8%) (adjusted for HIV, sex, calendar period and age at first injection, and history of imprisonment and overdose). Conversely, exposure to treatment was inversely related to the chances of achieving long term cessation.

Bias, confounding, and other reasons for caution

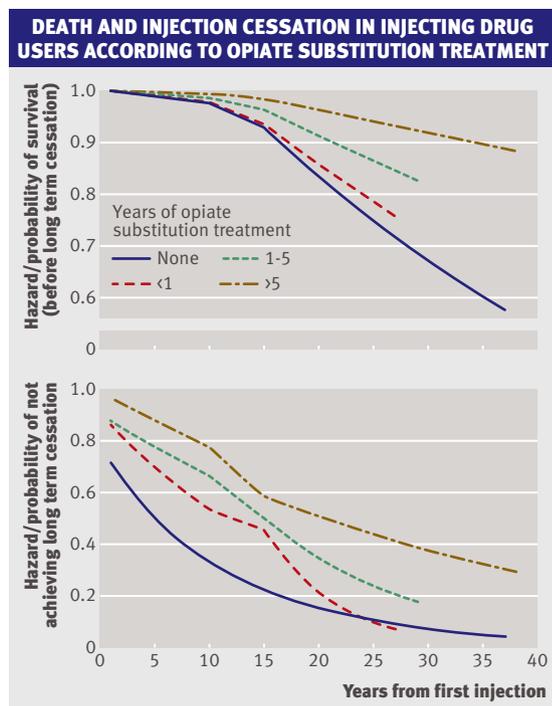
Some 18% of the whole cohort and 25% of survivors were lost to follow-up, which could have introduced bias. We might have over-represented dependent injecting drug users and under-represented users with short injecting careers as recruitment occurred several years after onset. Injecting drug users who do not undergo opiate substitution treatment might have different characteristics that explain their lower cessation rate and confound the relation between long term cessation and treatment. This would result in a lower risk of death among participants who did not receive opiate substitution treatment, which is the reverse of what we observed. Information on injection cessation from patients' notes for those who died might be biased, though we found the same relation between exposure to opiate substitution treatment and long term cessation when we included only interview data.

Generalisability to other populations

Compared with most populations of drug injectors in the UK, a larger proportion of our users were HIV positive, though estimated effects were unchanged by adjustment for HIV status.

Study funding and competing interests

The study was supported by the Chief Scientist Office for Scotland (CZH/4/318). JM and MH were supported by career scientist fellowship awards from the National Institute of Health and Medical Research (NHMRC) postdoctoral training fellowship. DDA is funded by the Health Protection Agency and the Medical Research Council (grant No U.1052.00.007).



AIDS and declining support for dependent elderly people in Africa: retrospective analysis using demographic and health surveys

Tim Kautz,¹ Eran Bendavid,² Jay Bhattacharya,² Grant Miller²

¹Department of Economics, University of Chicago, Chicago, IL 60637

²Center for Health Policy (CHP) and the Center for Primary Care and Outcomes Research (PCOR), Stanford University, Stanford, CA 94305

Correspondence to: G Miller
ngmiller@stanford.edu

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STUDY QUESTION How has the AIDS epidemic affected support for elderly individuals in sub-Saharan Africa?

SUMMARY ANSWER Higher AIDS mortality rates are associated with an additional 582 200-917 000 individuals at the age of 60 living alone without adults aged 18-59 and 141 000-323 100 elderly people becoming the sole caregivers for young children.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Previous studies have examined the effect of the HIV/AIDS epidemic on the living arrangements of older people in specific countries or regions, but it is unclear whether their findings apply beyond the populations considered. This is the first multi-year, cross national study of the relation between AIDS mortality and the living arrangements of elderly individuals in Africa. Our findings suggest that reducing deaths from AIDS in Africa could provide substantial benefits for this under-recognised population.

Participants and setting

We used household survey data from 1991 to 2006 on 123 176 elderly individuals over the age 60 from 22 African countries.

Design, size, and duration

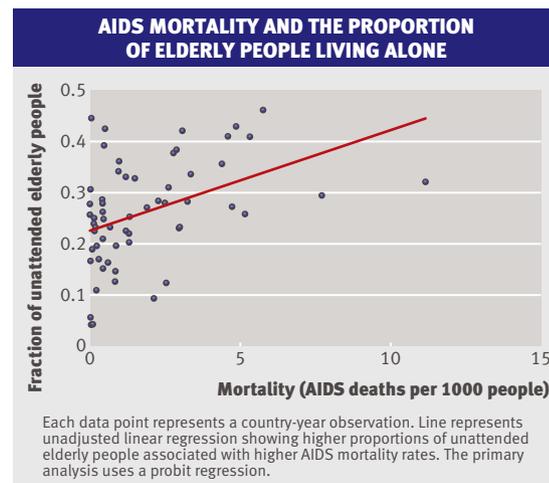
We retrospectively examined the relation between indicators of support for older people and the annual AIDS mortality rate (AIDS related deaths per 1000 people) by using multivariate linear and probit regressions that controlled for demographic and socioeconomic factors and country.

Primary outcome(s)

We investigated how three measures of the living arrangements of elderly people have been affected by the HIV/AIDS epidemic: the number of older individuals living alone (that is, the number of unattended elderly people); the number of older individuals living with only dependent children under the age of 10 (that is, in missing generation households); and the number of adults age 18-59 (that is, prime age adults) per household where an older person lives.

Main results and the role of chance

An increase in annual AIDS mortality of one death per 1000 people was associated with a 1.5% increase in the proportion of elderly individuals living alone (95% CI 1.2% to 1.9%) and a 0.4% increase in the number of older people living in missing generation households (95% CI 0.3% to 0.6%). Increases in AIDS mortality were also associated with fewer prime age adults in households with elderly individuals accompanied by at least one adult ($P<0.001$). These findings suggest that in our study countries, which encompass 70% of Africa's sub-Saharan population, the HIV/AIDS epidemic was associated with 582 200-917 000



elderly individuals living alone without prime age adults and 141 000-323 100 elderly individuals becoming the sole caregivers for young children in 2006. The figure shows a positive relation between the AIDS mortality rate and the proportion of elderly people who were living alone without any prime age adults.

Bias, confounding, and other reasons for caution

We have potentially underestimated the true caretaking burden on the elderly in Africa. Firstly, we excluded all children older than 10 years, some of whom are likely to need care. Secondly, we were unable to identify households in which the elderly might also care for their adult children who have AIDS.

We were also unable to assess if health or quality of life were worse among unattended older people than among those living with prime age adults. There was significant variability in the rates of elderly people living alone or caring for young children, especially in countries with low AIDS mortality. Repeated analysis of subsets of the data yielded consistent results, but we cannot entirely rule out unobserved confounders.

Generalisability to other populations

Our study includes data from countries that represent the majority of sub-Saharan Africa's population, making our estimates more generalisable than those of previous studies.

Study funding/potential competing interests

This study was supported by the National Institute on Aging, the National Institute of Child Health and Human Development, the Agency for Healthcare Research and Quality, the National Institute of Allergy and Infectious Diseases, and the Stanford Center for Demography and Economics of Aging.



bmj.com/podcasts

Tim Kautz talks about the impact of the AIDS epidemic in sub-Saharan Africa on the elderly population, whereas Simon Wright, head of health and HIV at Save the Children, discusses the effect of the epidemic on young people at www.bmj.com/podcasts

A low intensity, community based lifestyle programme to prevent weight gain in women with young children: cluster randomised controlled trial

Catherine Lombard,¹ Amanda Deeks,¹ Damien Jolley,² Kylie Ball,³ Helena Teede^{1,4}

¹The Jean Hailes Research Group, School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

²School of Public Health and Preventive Medicine, Monash University, Melbourne, Australia

³School of Exercise and Nutritional Sciences, Deakin University, Melbourne, Australia

⁴Diabetes Research Unit, Southern Health, Melbourne, Australia

Correspondence to: H Teede
helena.teede@med.monash.edu.au

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STUDY QUESTION In women with young children, can a low intensity self management intervention prevent weight gain over 12 months compared with information from healthy eating and physical activity population guidelines alone?

SUMMARY ANSWER Excess weight gain in women may be prevented using a low intensity self management intervention delivered in a community setting.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Women with young children are at high risk of weight gain, face barriers to participation in protective behaviours against obesity, and can influence health behaviours in family members. Our findings contribute important evidence on programmes to prevent excess weight gain.

Design

Women with a young child were recruited via 12 primary schools paired on the basis of size and randomised to intervention (n=6) or control (n=6). Women in the intervention group (n=127) attended four one hour interactive group sessions at the school, which combined simple health messages, personalised behaviour change strategies, and group discussion, then received monthly mobile telephone text messages for 12 months. Women in the control group (n=123) attended one non-interactive group information session based on dietary and physical activity population guidelines.

Participants and setting

A total of 250 women with a mean age of 40.39 years (SD 4.77, range 25-51) and a mean body mass index of 27.82 kg/m² (SD 5.42, range 18-47) were recruited through schools in a single geographical area with a mid-range of social disadvantage in urban Australia.

Primary outcomes

The main outcome measures were weight change and difference in weight change at 12 months.

Main results and the role of chance

All analyses were adjusted for baseline characteristics

(weight, age, income, and education) and the clustering effect of the schools. Women in the control group gained weight over the 12 months (0.83 kg, 95% confidence interval (CI) 0.12 to 1.54), whereas those in the intervention group lost weight (-0.20 kg, -0.90 to 0.49). The difference in weight change between the groups at 12 months was -1.13 kg (-2.03 to -0.24 kg; P<0.05) on the basis of observed values and -1.11 kg (-2.17 to -0.04) after multiple imputation to account for possible bias created by missing values.

Harms

No known harms are associated with this intervention.

Bias, confounding, and other reasons for caution

Although we attempted to address socioeconomic influences, subtle differences within and between schools may have influenced the outcomes.

Generalisability to other populations

The 12% response rate and the 10% participation rate limit the generalisability of our findings. However, we studied women who were representative of the Australian population, intentionally kept the inclusion criteria broad, and recruited participants and implemented the intervention in a real life setting. The intervention could be translated to other communities and settings providing there is appropriate attention to implementation issues.

Study funding/potential competing interests

HT and KB were supported by fellowships from the National Health and Medical Research Council, and CL was awarded a PhD scholarship by VicHealth, Victoria, and a postgraduate writing award by Monash University, Melbourne, Australia. Research costs were funded by a project grant from the William Buckland Foundation, Melbourne, Australia.

Trial registration number

Australian New Zealand Clinical Trials Registry number ACTRN12608000110381.

WEIGHT CHANGE FOR WOMEN ON A LOW INTENSITY SELF MANAGEMENT INTERVENTION OR RECEIVING POPULATION GUIDELINE INFORMATION (CONTROL)

| | Weight (kg) | | Difference between groups (kg) | |
|---------------------------------------|----------------------------|-----------------------|--|-----------------------------------|
| | Intervention group (n=109) | Control group (n=106) | Adjusted for baseline characteristics and school cluster (n=215) | Adjusted for missing data (n=250) |
| Baseline (mean (SD)) | 72.35 (13.66) | 74.68 (15.51) | — | — |
| 12 month follow-up (mean (SD)) | 72.14 (13.63) | 75.51 (15.24) | — | — |
| Change over 12 months (mean (95% CI)) | -0.21 (-0.90 to 0.49) | 0.83 (0.12 to 1.54)* | -1.13 (-2.03 to -0.24)* | -1.11 (-2.17 to -0.04)* |

*P<0.05.

Low energy diet and intracranial pressure in women with idiopathic intracranial hypertension: prospective cohort study

Alexandra J Sinclair,^{1,2} Michael A Burdon,¹ Peter G Nightingale,³ Alexandra K Ball,⁴ Peter Good,⁵ Timothy D Matthews,⁵ Andrew Jacks,⁵ Mark Lawden,⁶ Carl E Clarke,⁴ Paul M Stewart,² Elizabeth A Walker,² Jeremy W Tomlinson,² Saaha Rauz¹

EDITORIAL by Digne

¹Academic Unit of Ophthalmology, School of Immunity and Infection, College of Medical and Dental Sciences, University of Birmingham, Birmingham B15 2TT

²Centre for Diabetes, Endocrinology and Metabolism, School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, Birmingham

³Wellcome Trust Clinical Research Facility, College of Medical and Dental Sciences, University of Birmingham, Birmingham

⁴Neurosciences, School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, Birmingham

⁵Birmingham Neuro-ophthalmology Unit, University Hospitals Birmingham NHS Foundation Trust, Birmingham B15 2TH

⁶Department of Neurology, Leicester General Hospital, Leicester LE5 4PW

Correspondence to: S Rauz
s.rauz@bham.ac.uk

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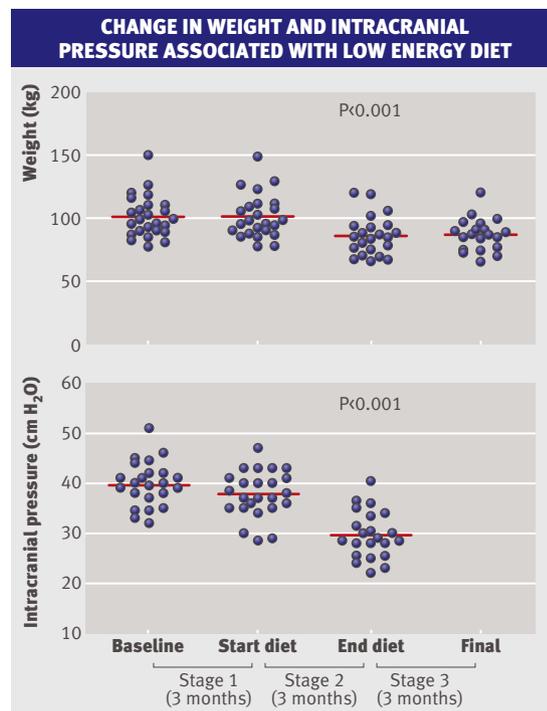
STUDY QUESTION Is weight loss effective at reducing intracranial pressure and treating patients with idiopathic intracranial hypertension?

SUMMARY ANSWER In women with idiopathic intracranial hypertension, a low energy (calorie) weight reducing diet for three months was associated with significant reductions in intracranial pressure and improvement in symptoms and papilloedema.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Weight loss is a commonly advocated treatment in idiopathic intracranial hypertension but prospective evidence for efficacy, particularly in reducing intracranial pressure, has previously been lacking. Weight reduction is associated with reduced intracranial pressure, papilloedema, and symptoms including headache. Objective imaging measures to quantify papilloedema will enhance clinical care and contribute to design of future clinical trials.

Participants and setting

25 women, body mass index (BMI) >25, with chronic (>3 months) active (papilloedema and intracranial pressure >25 cm H₂O) idiopathic intracranial hypertension were recruited in two hospitals in the United Kingdom. Those who had previously undergone surgery to treat idiopathic intracranial hypertension were excluded.



Design, size, and duration

Each stage of the study lasted three months. Stage 1 comprised no new intervention. In stage 2 women were restricted to a nutritionally complete low energy (calorie) diet (1777 kJ/day (425 kcal/day)). Stage 3 comprised follow-up. Outcome measures were assessed at baseline and three, six, and nine months. The primary outcome was reduction in intracranial pressure (measured by lumbar puncture at the first three time points) after the diet. Secondary measures included papilloedema as measured by ultrasonography of the optic disc elevation and nerve sheath diameter, together with optical coherence tomography of the peripapillary retinal nerve fibre layer, mean deviation of the Humphrey visual field, LogMAR (log of the minimal angle of resolution) visual acuity, and symptoms including score on the headache impact test-6.

Main results

Of the 25 women enrolled, 20 completed the entire study. All variables remained stable over stage 1. During stage 2, there were significant reductions in weight (15.7 (SD 8.0) kg, $P < 0.001$), intracranial pressure (8.0 (SD 4.2) cm H₂O, $P < 0.001$), headache score (7.6 (SD 10.1), $P = 0.004$), and papilloedema (optic disc elevation ($P = 0.002$), nerve sheath diameter ($P = 0.004$), and optical coherence tomography ($P = 0.001$)). The Humphrey visual field analyser mean deviation remained stable throughout, and the LogMAR visual acuity improved by one line in five of the 20 women. Symptoms of tinnitus, diplopia, and visual obscurations also significantly improved ($P = 0.004$, 0.008, and 0.025, respectively). Re-evaluation at three months after the end of the diet showed no significant change in weight (0.21 (SD 6.8) kg), and all outcome measures were maintained.

Bias, confounding, and other reasons for caution

This was a small non-randomised controlled study. Patients' acceptability and ethical considerations prevented recruitment to a control cohort.

Generalisability to other populations

Results are generalisable to women with chronic but active idiopathic intracranial hypertension.

Study funding/potential competing interests

This study was funded by the BMA's Vera Down (Neurological Diseases) 2005 and Clark and McMaster (Blinding Diseases) 2005 awards, MRC UK (G0601430 clinical training fellowship to AS), and the Birmingham Eye Foundation (registered (UK) charity 257549).

Medical graduates' early career choices of specialty and their eventual specialty destinations: UK prospective cohort studies

Michael J Goldacre, L Laxton, T W Lambert

EDITORIAL by Brown

UK Medical Careers Research Group, Unit of Health-Care Epidemiology, Department of Public Health, University of Oxford, Oxford OX3 7LF

Correspondence to: M J Goldacre
michael.goldacre@dphpc.ox.ac.uk

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STUDY QUESTION How well do doctors' early choices of specialty match their eventual career destinations?

SUMMARY ANSWER Over half of all doctors eventually practised in the specialty they had chosen in their first postgraduate year and three quarters in the specialty they had chosen in their third postgraduate year.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Some UK medical graduates choose their specialty early, whereas others defer choosing until after a few years of postgraduate work. Changes to postgraduate training in the United Kingdom mean that doctors will probably have to make definitive choices earlier in their career.

Participants and setting

Graduates from all UK medical schools who qualified in 1974, 1977, 1983, 1993, and 1996, followed up 10 years after graduation.

Design, size, and duration

Prospective cohort studies using postal questionnaires. A total of 15 759 doctors were surveyed one and three years after graduation and 12 108 five years after graduation. The doctors were asked to specify their choice of specialty and their certainty (definite, probable, or uncertain) about that choice. We analysed eventual career destinations at 10 years after graduation according to broad clinical specialty groups.

Main results

Career preferences and eventual destinations at 10 years were known for 64% (10 154/15 759) of the total survey population at one year, 62% (9702/15 759) at three years, and 61% (7429/12 108) at five years. Looking forward from early choice for the 1993 and 1996 cohorts, career destination matched the preferred choice in year 1 for 60% (1890/3161) of doctors overall, 82% (634/772) who chose general practice, and 75% (104/139) who chose psychiatry. Looking back from career destinations, 50% (634/1269) of doctors in general practice and 52% (104/199) in psychiatry had given the specialty as their first choice in year 1 (both specialties recruit many "late choosers"). Of practising surgeons, 90% (389/430) had chosen surgery in their first year after graduation. Overall, year 3 and year 5 choices matched with career

destinations for 70% (2494/3579) and 83% (2916/3524) of doctors, respectively. Findings from the earlier cohorts (1974-83) were similar to the later ones except that the difference between men and women in the match between choice and destination reduced in the later cohorts.

Bias, confounding, and other reasons for caution

The studies were prospective, precluding recall bias and post-hoc rationalisation about early choice. Some non-responder bias is possible.

Generalisability to other populations

The implementation of policies to restructure and shorten postgraduate medical training in the United Kingdom will probably increase the need for doctors to choose their career early. Findings may not apply to doctors qualifying in other countries but we hope that our work will stimulate similar research elsewhere.

Study funding/potential competing interests

The UK Medical Careers Research Group is funded by the Department of Health's policy research programme. The Unit of Health-Care Epidemiology is funded by the National Institute for Health Research. The study sponsors had no role in the design, conduct, analysis, or reporting of the study. The views and opinions expressed in this paper do not necessarily reflect those of the sponsors. We have no competing interests.

BMJ pico: advice to authors

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PERCENTAGE OF DOCTORS WORKING IN SPECIALTY CHOSEN AT YEARS 1, 3, AND 5 AFTER GRADUATION

| Respondents | Graduates of 1993 and 1996 | | | Graduates of 1974, 1977, and 1983 | | |
|-------------|----------------------------|--------|--------|-----------------------------------|--------|--------|
| | Year 1 | Year 3 | Year 5 | Year 1 | Year 3 | Year 5 |
| Men | 62.3 | 79.4 | 90.9 | 64.0 | 80.9 | 89.2 |
| Women | 57.4 | 76.4 | 88.5 | 55.1 | 72.8 | 78.7 |
| Total | 59.8 | 77.8 | 89.6 | 61.1 | 78.2 | 86.1 |