RESEARCH

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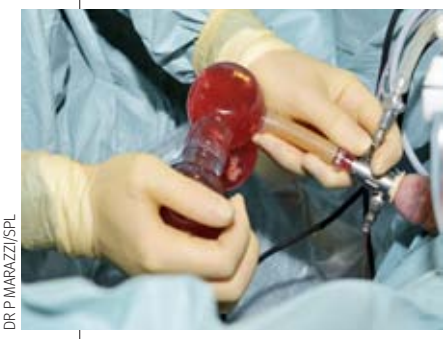
What should men expect after prostate biopsy?

For men awaiting prostate biopsy, it must be difficult to resist the urge to search the internet for horror stories about the procedure. Consistent and comprehensive statistics on what to expect are hard to find. This might not surprise Derek Rosario and colleagues (p 19), whose paper reports the experiences of over 1000 men undergoing prostate biopsy in a variety of UK hospitals. Experiences may differ depending on the expertise of the staff performing the biopsy, or on what the patient expected. Variation also exists in the outcomes recorded in studies looking into men's experiences.

It's important to counsel patients on what to expect following all procedures, but prostatic biopsy is of particular interest. It will be a reality for many more men if PSA screening is more widely implemented, and assessing the acceptability of prostate biopsy is key to understanding the acceptability of screening for prostate cancer.

You can read some crunchy numbers, tangible to patients, in box 1 of the full version of the paper online. For example, reassuringly, 85% of the men reported no pain, or only mild pain, during the procedure itself. However, 90% of men noticed blood in their semen, about a third blood in their stools, and two thirds blood in their urine, up to a month later. Two weeks after the procedure, 15% had pain.

Writing in a linked editorial (p 11) Bob Djavan and Bernardo Rocco say that biopsy procedures have seen few developments, compared with imaging techniques and blood tests for prostate cancer. They use Rosario and colleagues' data to highlight the variation in men's experience of prostate biopsy and call for standardisation of the procedure—for example, consistent use of analgesia and antibiotics.



DR P MARAZZI/SPL

Births in England and elsewhere

EDDIE LAWRENCE/SPL

Two papers in this week's issue look at births in different settings, and both articles generated debate on bmj.com.

In a prospective cohort study, the Birthplace in England Collaborative Group looked at how place of birth affected perinatal outcomes (p 17). The findings suggest that women with a pregnancy at low risk of complications can safely be offered a choice of where to give birth—at home, in freestanding midwifery units, in midwife led units on a hospital site with obstetric services, or in obstetric units. Although first-time mothers who opted for a home birth appeared to be at a higher risk of adverse outcomes, the overall risk was low in all settings. Responses to the paper online raise a wide range of questions about the study's findings, the implications for practice, and the need for more research (www.bmj.com/content/343/bmj.d7400?tab=responses).

Births outside of England are also on the agenda: Amie Wilson and colleagues report that in developing countries, strategies incorporating training and support of traditional birth attendants can significantly reduce perinatal and neonatal deaths (p 16). Ellen Hodnett's accompanying editorial (p 9) says the challenge now will be translating this knowledge into practice. Read online responses to the paper at www.bmj.com/content/343/bmj.d7102?tab=responses.

Research online: For these and other new research articles see www.bmj.com/research

Effectiveness of agricultural interventions that aim to improve nutritional status of children Edoardo Masset and colleagues' systematic review looked at agricultural interventions that had the explicit goal of improving the nutritional status of children in developing countries—including bio-fortification, home gardening, aquaculture, small scale fisheries, poultry development, animal husbandry, and dairy development. The review included 23 studies, mostly evaluating home garden interventions. Although the data showed a poor effect of these interventions on nutritional status, the authors were unable to reach a strong conclusion, because of the methodological weaknesses of the studies included in the review (doi:10.1136/bmj.d8222).

Clinical prediction rules In a Research Methods and Reporting article, Simon Adams and Stephen Leveson discuss mathematical tools that are intended to guide clinicians in their everyday decision making. The popularity of such rules has increased greatly over the past few years, and, as pressure on doctors' time increases, they will need to become familiar with decision making tools and the statistical principles underlying them. The article outlines the concepts underlying the development of clinical prediction rules and the pros and cons of their use (doi:10.1136/bmj.d8312).

Effectiveness of strategies incorporating training and support of traditional birth attendants on perinatal and maternal mortality: meta-analysis

Amie Wilson,[1] Ioannis D Gallos,[1] Nieves Plana,[2] David Lissauer,[1] Khalid S Khan,[3] Javier Zamora,[2] Christine MacArthur,[4] Arri Coomarasamy[1]

EDITORIAL by Hodnett
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[1]School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, Birmingham B15 2TT, UK
[2]Clinical Biostatistics Unit, Hospital Universitario Ramón y Cajal, CIBER en Epidemiología y Salud Pública (CIBERESP) and Instituto de Investigación Sanitaria (IRYCIS), Madrid, Spain
[3]Institute for Health Sciences Education, Barts and The London School of Medicine and Dentistry, London, UK
[4]School of Health and Population Sciences, College of Medical and Dental Sciences, University of Birmingham
Correspondence to: A Coomarasamy Academic Unit (University of Birmingham), Birmingham Women's Foundation Trust, Birmingham B15 2TG
a.coomarasamy@bham.ac.uk

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STUDY QUESTION Do strategies that incorporate training and support of traditional birth attendants improve perinatal, neonatal, or maternal mortality in developing countries?

SUMMARY ANSWER Perinatal deaths are reduced by an average of 24% and neonatal deaths by 21% with strategies that incorporate training and support of traditional birth attendants.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS More than 50% of births in developing countries are attended by traditional birth attendants. Substantial variation exists in the training, role, support staff, referral pathways, and resources provided to traditional birth attendants. Our meta-analysis has shown a significant reduction in perinatal and neonatal deaths and a non-significant reduction in maternal mortality with strategies incorporating training and support of traditional birth attendants.

Selection criteria for studies

We searched resources from Medline, Embase, the Allied and Complementary Medicine database, British Nursing Index, Cochrane Library, Cumulative Index to Nursing and Allied Health Literature, BioMed Central, PsycINFO, Latin American and Caribbean Health Sciences Literature database, African Index Medicus, Web of Science, Reproductive Health Library, and Science Citation Index (from database inception to April 2011), without language restrictions. We selected randomised and non-randomised controlled studies that assessed strategies incorporating training and support of traditional birth attendants in developing countries and that reported on perinatal, neonatal, and maternal mortality. Search terms used to identify relevant studies were: "birth attend*", "traditional midwife", "lay birth attendant", "dais", and "comadronas".

Primary outcome(s)

Perinatal, neonatal, and maternal death.

Main results and role of chance

We included six cluster, randomised controlled trials (n=138 549), and seven non-randomised controlled studies (n=72 225). Meta-analysis of the randomised trials showed significant reductions in perinatal death (relative risk 0.76, 95% confidence interval 0.64 to 0.88, P<0.001; number needed to treat 35, 24 to 70; figure) and neonatal death (0.79, 0.69 to 0.88, P<0.001; 98, 66 to 170) with strategies incorporating training and support of traditional birth attendants. Meta-analysis of the non-randomised studies also found a reduction in perinatal mortality (0.70, 0.57 to 0.84, P<0.001; 48, 32 to 96) and neonatal mortality (0.61, 0.48 to 0.75, P<0.001; 96, 65 to 168). Six studies reported on maternal mortality and our meta-analyses showed a non-significant reduction (three randomised trials, relative risk 0.79, 0.53 to 1.05, P=0.12; three non-randomised studies, 0.80, 0.44 to 1.15, P=0.26).

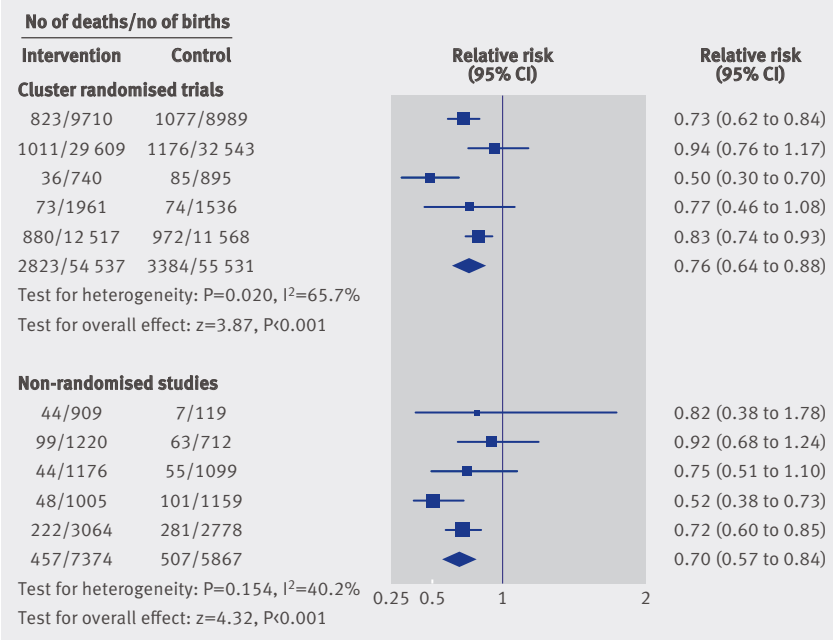
Bias, confounding, and other reasons for caution

We found substantial variation in the training and the role of traditional birth attendants, support staff, resources provided, and referral pathways. Despite this heterogeneity, we observed consistent improvements in perinatal and neonatal outcomes in all the studies.

Study funding/potential competing interests

All authors have completed the Unified Competing Interest form at http://www.icmje.org/coi_disclosure.pdf (available on request from the corresponding author) and declare: this study was funded by Ammalife (www.ammalife.org, UK registered charity no 1120236) and by the research and development department at the Birmingham Women's NHS Foundation Trust; CM was partly funded by the National Institute for Health Research through the Collaborations for Leadership in Applied Health Research and Care for Birmingham and Black Country; no non-financial interests that may be relevant to the submitted work.

Perinatal mortality



Perinatal and maternal outcomes by planned place of birth for healthy women with low risk pregnancies: the Birthplace in England national prospective cohort study

Birthplace in England Collaborative Group

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Correspondence to: P Brocklehurst, Policy Research Unit-Maternal Health and Care, National Perinatal Epidemiology Unit, University of Oxford, Oxford OX3 7LF, UK
peter.brocklehurst@npeu.ox.ac.uk

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STUDY QUESTION For pregnant women at low risk of complications, does the incidence of adverse perinatal outcomes differ for births planned at home or a midwifery unit compared with an obstetric unit?

SUMMARY ANSWER Compared with births planned in obstetric units, planned home birth is associated with an increase in adverse perinatal outcomes for nulliparous women, but not for multiparous women, while births planned in midwifery units show no difference in perinatal outcomes.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS Healthy women who plan to give birth at home or in a midwifery unit are more likely to have a vaginal birth with less intervention compared with women who plan to give birth in an obstetric unit. For healthy women with low risk pregnancies, the non-obstetric unit settings are generally safe for the baby and offer benefits for the mother (fewer interventions), but, for nulliparous women, home births seem to increase the risk of a poor outcome for the baby.

Participants and setting

The cohort included pregnant women at low risk of complications, according to current clinical guidelines, who had a planned birth at home, in a midwifery unit, or in an obstetric unit in England between April 2008 and April 2010.

Incidence of primary outcome among healthy women with low risk pregnancies by their planned place of birth and parity

Planned place of birth	No of events/ births	Incidence of events/ 1000 (95% CI)*
All women:		
Obstetric unit	81/19 551	4.4 (3.2 to 5.9)
Home	70/16 553	4.2 (3.2 to 5.4)
Freestanding midwifery unit	41/11 199	3.5 (2.5 to 4.9)
Alongside midwifery unit†	58/16 524	3.6 (2.6 to 4.9)
Nulliparous women:		
Obstetric unit	52/10 541	5.3 (3.9 to 7.3)
Home	39/4488	9.3 (6.5 to 13.1)
Freestanding midwifery unit	24/5158	4.5 (2.8 to 7.1)
Alongside midwifery unit†	38/8256	4.7 (3.1 to 7.2)
Multiparous women:		
Obstetric unit	29/8980	3.3 (2.2 to 5.0)
Home	31/12 050	2.3 (1.6 to 3.2)
Freestanding midwifery unit	17/6025	2.7 (1.6 to 4.6)
Alongside midwifery unit†	20/8234	2.4 (1.4 to 4.3)

*Weighted to reflect each unit's duration of participation and probability of being sampled; confidence intervals take account of the clustered nature of the data.
†Midwife led unit on a hospital site with obstetric services.

Design, size, and duration

In this prospective cohort study, planned place of birth at the start of care in labour was the exposure, and the primary outcome was a composite measure of perinatal mortality and intrapartum related morbidity (stillbirth during labour, early neonatal death, neonatal encephalopathy, meconium aspiration syndrome, brachial plexus injury, and fractured humerus or clavicle). The cohort included 64 538 women with low risk pregnancies.

Main results and the role of chance

Overall, there was no evidence of a difference in the incidence of the primary outcome for the women by planned place of birth. A planned subgroup analysis by parity showed an increased incidence of the primary outcome for nulliparous women in the planned home birth group compared with the obstetric unit group (9.3 *v* 5.3 events per 1000 births; adjusted odds ratio 1.75, 95% CI 1.07 to 2.86). For multiparous women, there were no significant differences in the primary outcome between birth settings.

Transfers from non-obstetric unit settings were more frequent for nulliparous women (36% to 45%) than multiparous women (9% to 13%). Women who planned birth at home or in a midwifery unit had significantly fewer operative and instrumental deliveries than women who planned birth in an obstetric unit.

Bias, confounding, and other reasons for caution

The study minimised biases by achieving a high response rate and a low level of missing data. Analyses were adjusted for potential confounders and restricted to women with no known risks before labour. However, more women in the planned obstetric unit group were found to have complicating conditions at the start of care in labour, suggesting possible residual confounding due to uncontrolled differences in the risk profile of the groups. This would have tended to make outcomes seem worse in the obstetric unit group and does not explain the observed difference in perinatal outcomes between nulliparous women with planned home births and those with planned obstetric unit births.

Generalisability to other populations

Generalisability to other healthcare systems is uncertain.

Study funding/potential competing interests

The study was jointly funded by the Department of Health's Policy Research Programme and the National Institute of Health Research Service Delivery and Organisation. The views expressed are not necessarily those of the funders.

Timing of onset of cognitive decline: results from Whitehall II prospective cohort study

Archana Singh-Manoux,[1 2 3] Mika Kivimaki,[2] M Maria Glymour,[4] Alexis Elbaz,[5 6] Claudine Berr,[7 8] Klaus P Ebmeier,[9] Jane E Ferrie,[10] Aline Dugravot[1]

EDITORIAL by Goldstein

[1]Institut National de la Santé et de la Recherche Médicale (INSERM), U1018, Centre for Research in Epidemiology and Population Health, Hôpital Paul Brousse, 94807 Villejuif Cedex, France
[2]Department of Epidemiology and Public Health, University College London, London, UK
[3]Centre de Gérontologie, Hôpital Ste Périne, AP-HP, France
[4]Department of Society, Human Development, and Health, Harvard School of Public Health, Boston, MA, USA
[5]Institut National de la Santé et de la Recherche Médicale (INSERM), U708, F-75013, Paris, France
[6]UPMC Univ Paris 06, UMR_S 708, F-75005, Paris
[7]Institut National de la Santé et de la Recherche Médicale (INSERM) U1061 Université Montpellier 1, Montpellier, France
[8]CMRR Languedoc-Roussillon, CHU Montpellier
[9]Oxford University Department of Psychiatry, Warneford Hospital, Oxford, UK
[10]University of Bristol, Bristol, UK

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doc2doc
Onset of cognitive decline begins at 45 years of age?
http://bit.ly/xRwwDN

STUDY QUESTION

Does cognitive function decline before the age of 60?

SUMMARY ANSWER

Longitudinal modelling shows robust evidence of cognitive decline even in those aged 45-49 at the start of the study.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS

There is an inverse association between age and cognitive performance, but the age at which cognitive decline becomes evident at the population level remains the subject of debate. Some suggest no decline before the age of 60 but much of the evidence used to infer the effect of age is based on cross sectional data. This longitudinal study found evidence of cognitive decline in even the youngest participants aged 45-49.

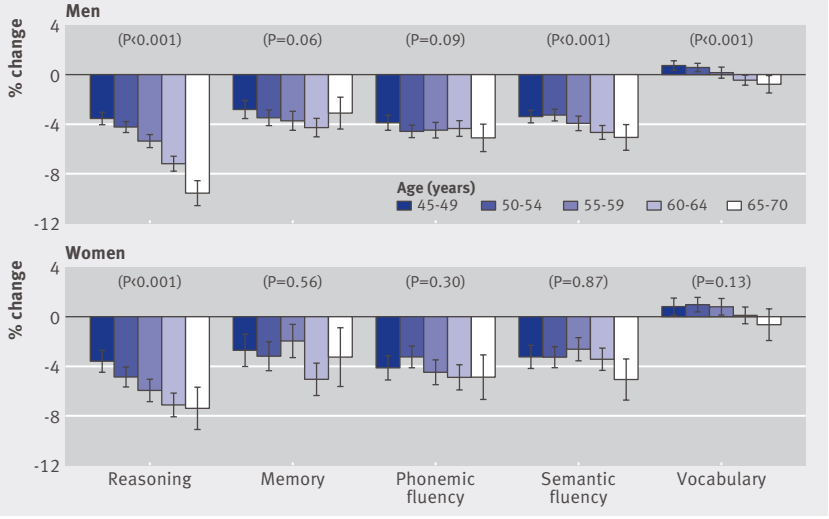
Participants and setting

Data were drawn from the Whitehall II cohort study, set up in 1985-8, comprising 10 308 civil servants based in London.

Design, size, and duration

Cognitive testing was introduced to the Whitehall II study in 1997-9, when 9250 participants still in the study were invited to a clinical screening. Our analysis of cognitive tests (memory, reasoning, vocabulary, phonemic and semantic fluency) administered three times (1997-9, 2002-4, 2007-9) over 10 years was based on data from 7390 individuals (5198 men and 2192 women) aged 45-70 at the start of the follow-up.

Decline in cognitive test scores over 10 years (expressed as change/range of test x 100)



Main results and the role of chance

There was significant cognitive decline over 10 years, estimated from linear mixed models with three waves of data and expressed as percentage change (change/range of test×100), on all tests except vocabulary, which is known not to decline with age. Cognitive decline was evident in all age groups, even in the youngest participants aged 45-49 at the start of the cognitive testing. There was evidence of greater decline at older ages, particularly in men. The results are unlikely to be chance findings or to be affected by error arising from natural variation between individuals as analyses are longitudinal with the estimates of cognitive decline based on change within a person. The exposure, in this case time over 10 years, is uniformly applicable to all age cohorts in the analysis. These results have implications for research on cognitive ageing. Most studies, particularly those on dementia, assess both putative risk factors and cognitive decline in older adults. The implicit assumption in these studies is that there is little cognitive decline until old age. One likely consequence of this type of study design, given that we now know dementia to be the result of cognitive decline over two to three decades, is that some of the risk factors uncovered could simply be correlates of the disease process rather than causes of the outcome (dementia, cognitive ageing) under investigation.

Bias, confounding, and other reasons for caution

Longitudinal data are known to underestimate the effect of age on cognitive decline because of practice and learning effects. A further source of underestimation is selective sample retention, either from death or drop-out over the follow-up. Cross sectional data, however, cannot provide reliable estimates of age related cognitive decline because they conflate the effect of age with differences in key factors within birth cohorts, such as education.

Generalisability to other populations

Whitehall II is not representative of the general population as the participants are mostly white collar and in relatively stable employment, implying that our results might underestimate cognitive decline at the population level.

Study funding/potential competing interests

The study was funded in part by the National Institutes of Health and the British Medical Research Council.

Correspondence to: A Singh-Manoux, INSERM, U1018, Centre for Research in Epidemiology and Population Health, Hôpital Paul Brousse, Bât 15/16, 16 Avenue Paul Vaillant Couturier, 94807 Villejuif Cedex, France
Archana.Singh-Manoux@inserm.fr

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Short term outcomes of prostate biopsy in men tested for cancer by prostate specific antigen: prospective evaluation within ProtecT study

Derek J Rosario,[1] J Athene Lane,[2] Chris Metcalfe,[2] Jenny L Donovan,[2] Andy Doble,[3] Louise Goodwin,[1] Michael Davis,[2] James W F Catto,[1] Kerry Avery,[2] David E Neal,[4] Freddie C Hamdy[5]

EDITORIAL by Djavan and Rocco

[1]Academic Urology Unit, Department of Oncology, Royal Hallamshire Hospital, University of Sheffield, Sheffield S10 2JF, UK
[2]School of Social and Community Medicine, University of Bristol, Bristol BS8 2PS, UK
[3]Department of Urology, Addenbrooke's Hospital, Cambridge CB2 0QQ, UK
[4]Department of Oncology, University of Cambridge, Addenbrooke's Hospital
[5]Nuffield Department of Surgical Sciences, University of Oxford, John Radcliffe Hospital, Oxford OX3 9DU, UK
Correspondence to: D J Rosario
d.j.rosario@shef.ac.uk

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STUDY QUESTION

What adverse events follow transrectal ultrasound guided biopsy (TRUS-Bx) of the prostate and how do they affect men's views about having a future biopsy?

SUMMARY ANSWER

Symptoms of infection and bleeding are common, but are a major or moderate problem in only a small proportion; these symptoms and pain experienced at biopsy are predictors of an unfavourable attitude to repeat biopsy.

WHAT IS KNOWN AND WHAT THIS PAPER ADDS

Prostate biopsy can cause pain, sepsis, and bleeding, although rates are poorly understood owing to variability in defining adverse events. At seven days after biopsy, 39% of men had pain, 12% had fever, 64% had haematuria, 33% had rectal bleeding, and 94% of those who were sexually active had haemoejaculate.

Participants and setting

We recruited community dwelling men aged 50 to 69 years having prostate specific antigen (PSA) testing and a first prostate biopsy in eight UK centres in the Prostate Testing for Cancer and Treatment (ProtecT) study between February 2006 and May 2008.

Design, size, and duration

This was an observational cohort study of 1147 men having a primary biopsy, with patient reported outcomes of adverse events collected with a structured questionnaire at baseline and over 35 days coupled with review of medical records.

Main results and the role of chance

Between February 2006 and May 2008, 1147 (65%) of 1753 eligible men having a first prostate biopsy at eight centres agreed to participate in the Prostate Biopsy Effects (ProBE) study. Response rates were 1090 (95%) at seven days and 1018 (89%) at 35 days. The proportion of men reporting moderate/severe pain immediately after biopsy varied from 6.1% to 36.2% (P<0.001) across centres. In the five weeks after biopsy, prevalence of symptoms was high, but only a small proportion of men reported a moderate/severe problem; 15 (1.3%, 95% confidence interval 0.8% to 2.1%) men needed hospital admission, and a further 119 (10.4%, 8.7% to 12.3%) initiated a biopsy related consultation with their general practitioner or another health professional. Immediately after TRUS-Bx, 124/1142 (10.9%, 9.2% to 12.8%) men considered further biopsy a major/moderate problem, increasing to 213/1085 (19.6%, 17.4% to 22.1%) seven days later. A negative attitude to repeat biopsy was associated with pain at biopsy (odds ratio 8.2, P<0.001) and symptoms related to infection (7.9, P<0.001) or bleeding (4.2, P<0.001).

Prevalence of symptoms and proportion of patients reporting moderate or severe problem due to symptoms within 35 days of biopsy

Symptom reported	Prevalence—% (95% CI)	Moderate/severe problem—% (95% CI)
Pain	43.6 (40.5 to 46.7)	7.3 (5.7 to 9.1)
Fever	17.5 (15.2 to 20.0)	5.5 (4.2 to 7.1)
Shivers	18.8 (16.5 to 21.3)	5.0 (3.7 to 6.6)
Haematuria	65.8 (62.7 to 68.7)	6.2 (4.7 to 7.9)
Haematochezia	36.8 (33.8 to 39.9)	2.5 (1.6 to 3.7)
Haemoejaculate*	92.6 (90.4 to 94.4)	26.6 (23.3 to 30.2)

*Excludes men reporting no sexual activity.

Bias, confounding, and other reasons for caution

The cohort comprised asymptomatic men presenting for a first prostate biopsy after a PSA test. Participants had responded to a single written invitation sent out via general practices, so non-responders may not be represented. The cohort did not include men referred with urinary symptoms or clinically suspected prostate cancer. Missing responses at one or more time points may have affected the estimates of harm.

Generalisability to other populations

The results are generalisable to men aged between 50 and 69 years having TRUS-Bx for the first time for a PSA concentration between 3.0 and 19.99 ng/mL. Caution should be exercised in extending these results to men with higher PSA concentrations or clinically manifest disease, older men, or those having a repeat biopsy.

Study funding and potential competing interests

ProBE was funded by the Prostate Cancer Risk Management Programme. The ProtecT study is funded by NIHR HTA.