This full text version, available on TeesRep, is the PDF (final version) of:


For details regarding the final published version please click on the following DOI link: http://dx.doi.org/10.1136/bmj.38336.482720.8F

When citing this source, please use the final published version as above.

This document was downloaded from http://tees.openrepository.com/tees/handle/10149/96976
Please do not use this version for citation purposes.

All items in TeesRep are protected by copyright, with all rights reserved, unless otherwise indicated.

The nature of medical evidence and its inherent uncertainty for the clinical consultation: qualitative study
Frances Griffiths, Eileen Green, Maria Tsouroulli

Abstract
Objective To describe how clinicians deal with the uncertainty inherent in medical evidence in clinical consultations.

Setting Clinical consultations related to hormone replacement therapy, bone densitometry, and breast screening in seven general practices and three secondary care clinics in the UK NHS.

Participants Women aged 45–64.

Results 45 of the 109 relevant consultations included sufficient discussion for analysis. The consultations could be categorised into three groups: focus on certainty for now and this test, with slippage into general reassurance; a coherent account of the medical evidence for risks and benefits, but blurring of the uncertainty inherent in the evidence and giving an impression of certainty; and acknowledging the inherent uncertainty of the medical evidence and negotiating a provisional decision.

Conclusion Strategies health professionals use to cope with the uncertainty inherent in medical evidence in clinical consultations include the use of provisional decisions that allow for changing priorities and circumstances over time, to avoid slippage into general reassurance from a particular test result, and to avoid the creation of a myth of certainty.

Introduction
Clinicians have access to a growing body of good clinical research evidence informing them about the effectiveness of many medical interventions. However robust the research, clinicians face the dilemma of applying this evidence to individual patients. The uncertainty inherent in the nature of medical evidence is often not discussed with patients. Epidemiology tells us that smoking is a risk factor for heart attack, but it does not tell us which individuals will develop smoking-related disease. Randomised controlled trials of hormone replacement therapy report on the number of extra breast cancers identified in a large number of women receiving treatment compared with those not receiving treatment, but they do not tell us which individuals will be affected. Randomised controlled trials of hormone replacement therapy report on the number of extra breast cancers identified in a large number of women receiving treatment compared with those not receiving treatment, but they do not tell us which individuals will be affected.

Clinicians recognise this dilemma and have reflected on this in relation to their clinical practice and the need for research methods that give more attention to the particular rather than to the general. The importance of this dilemma is discussed within related disciplines, including medical philosophy, ethics, and health policy. Few studies, however, have examined what clinicians actually say to patients. Studies have considered how clinicians communicate clinical evidence to patients, taking account of their preferences and maintaining the clinician–patient relationship. Studies have also acknowledged the difficulty of communicating about the risks and benefits of interventions. These studies do not, however, examine communication in relation to the inherent uncertainty in the evidence. We examined how health professionals talk to patients about this uncertainty, and we provide a framework for reflecting on how they handle the dilemma of applying clinical evidence to particular patients.

Methods
We examined consultations with health professionals in both primary and secondary care where there was discussion of one or more of the interventions of hormone replacement therapy, bone densitometry, or breast screening. Our study included healthcare sites in contrasting socioeconomic contexts in the Midlands and north east England. The collection of these data was part of a larger study, reported elsewhere.

All women aged 45–64 attending one of seven general practices or three specialist clinics in the UK NHS were invited to participate in our study. After consent was obtained, the healthcare professional audiotaped the consultations. These were reviewed for their relevance to our study. We discarded those with no mention of the relevant interventions, and we retained all the others regardless of the extent of the discussion of the interventions. Table 1 lists the details of the clinics and surgeries and consultations recorded. The details of the research process, including analysis, are on bmj.com.

Overall, 109 consultations were relevant: 73 from general practice and 36 from specialist clinics. Most women attending the clinics agreed to be recorded, whereas in general practice the consent rate was lower (20% in some practices).

A key emergent theme was uncertainty and how it is discussed between health professionals and women, particularly the uncertainty inherent in medical evidence when it is applied to particular patients. The data included 64 consultations with only a brief mention of the interventions. For example, a woman discusses with the practice nurse those symptoms she thinks are due to the menopause, and hormone replacement therapy is...
The extract in box 1 provides an example of how uncertainty was dealt with in the healthcare issues and context. In further comparative analysis we explored links between how the validity of the categories from their own experience. In all but four consultations, however, a dominant approach to uncertainty was identified. Of the nine health professionals who had more than one consultation, all except one (specialist registrar) used more than one approach to the uncertainty inherent in medical evidence.

Table 1 Number of consultations recorded between health professionals and women at midlife in which hormone replacement therapy, bone densitometry, or breast screening was mentioned

<table>
<thead>
<tr>
<th>Setting, health professional</th>
<th>No of health professionals</th>
<th>No of consultations</th>
</tr>
</thead>
<tbody>
<tr>
<td>General practice 1:</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>General practice 2:</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General practice 3:</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>General practice 4:</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>General practice 5:</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>General practice 6:</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>General practice 7:</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Hormone replacement clinic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Specialist registrar</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Breast clinic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate specialist</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Consultant</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Specialist nurse</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Bone clinic:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consultant</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Specialist nurse</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Radiographer</td>
<td>1</td>
<td>11</td>
</tr>
</tbody>
</table>

Table 2 Number of consultations recorded between health professionals and women at midlife in which hormone replacement therapy, bone densitometry, or breast screening was mentioned only briefly (also see bmj.com). Owing to insufficient data, we did not include these consultations in subsequent analysis. Through a process of discussion and comparison of data, we developed categories for how uncertainty was dealt with in the remaining 45 consultations, which were recorded by 25 different health professionals (nine had more than one consultation in this dataset and of these, three had more than two). The categories were developed as a tool for understanding and reflecting on what was taking place in the consultations. The results of the analysis were presented to three university based focus groups—two of doctors and one of patients—which provided feedback on the validity of the categories from their own experience. In further comparative analysis we explored links between how uncertainty was dealt with and the healthcare issues and context.

Results

The extract in box 1 provides an example of how uncertainty inherent in medical evidence was managed within the consultations; the doctor knows what should make a difference to bone density based on medical research, but he does not know what has made a difference for this particular woman.

The three approaches to the uncertainty inherent in medical evidence in the consultations were certainty for now, the coherent story of certainty, and acknowledgment of the uncertainty.

Approaches to uncertainty inherent in medical evidence

Certainty for now

The health professionals talked about certainty for now, or for this test—for example, the result of ultrasonography at the time of the procedure. However, they also slipped into general re-assurance.

Coherent story of certainty

The health professionals wove a coherent account of the medical evidence for risks and benefits—for example, a great deal of detail, including estimates of the size of risk, was included in a discussion of hormone replacement therapy for osteoporosis. The way in which this detail was delivered, however, gave an impression of certainty, even though the health professional may have used words implying uncertainty.

Acknowledging uncertainty

The uncertainty of outcome from using an intervention was acknowledged, including the inherent uncertainty of the medical evidence when applied to individuals. A strategy used to cope with this uncertainty was negotiating a provisional decision.

Most consultations included elements of each of the three categories. In all but four consultations, however, a dominant approach to uncertainty was identified. Of the nine health professionals who had more than one consultation, all except one (specialist registrar) used more than one approach to the uncertainty inherent in medical evidence.

Certainty for now

Health professionals talked of certainty in relation to the results of the test they had carried out or were planning. Reassurance was given before the results were available, but with the proviso that the results were needed to be absolutely sure. For example, in two consultations women told their general practitioner about changes in their breasts. The women were examined and reassured that their breasts seemed “normal.” The women were referred to the breast clinic for further certainty from tests (see box 2, extract 1).

A doctor in the breast clinic (consultation 032) emphasised the need for certainty by saying “obviously we need to know for sure” and arranged a biopsy to try and achieve that. He followed this by saying that “often we biopsy things to prove that they’re nothing . . . we get so many surprises, we’re sort of duty bound to offer you the . . . chance of biopsy.” The type of certainty being talked about is a test result for the here and now—a particular certainty for now.
Box 2: Certainty for now and this test, with slippage into general reassurance

Extract 1: Woman mentions changes in her breasts

Patient: I just kept putting it to the back of my mind and then it was just, I thought well it's not, it doesn't feel right you know it was like pulling and I thought hmmn.

Doctor: I'll sort you out a review at the breast clinic and then they'll be able to reassure you fully I'm, I'm sure… (General practice, consultation 004)

Extract 2: Woman has ultrasonography of her breasts

During ultrasonography

Doctor: Here it is looking very clear that it is an innocent kind of, er, thing. That's why we don't need to do any biopsy.

After ultrasonography

Doctor: The thing is, it doesn't exclude you to getting something else some other place… that's the thing. I can tell about what—what is happening today, and about these ones, which look innocent. (Breast clinic, consultation 003)

Coherent story of certainty

In some consultations, the health professional wove an account or explanation for the woman that was coherent, almost as a story. The intention seemed to be to provide information and explanation so that the woman could make her own decisions, although the overall tenor of the consultations was in favour of the intervention. In some of the consultations a great deal of detailed information was provided, including numerical estimates of risk and explanations of uncertainty. From the way women responded, however, it seems this formed an unfocused account of the risk of osteoporosis. The doctor creates a myth about the certainty of the evidence for this woman.

In the second extract in box 2, the doctor talks about certainty provided by the ultrasound result for the breast tissue at this time and then goes on to explain to the woman the limited nature of this certainty. Other consultations in this category did not include such explanation. The health professionals took care to tell the women that the particular tissue examined was normal, but followed this up with a reassuring phrase which was rather general—for example, “it's perfectly normal, you're alright” (consultation 031).

Use of the different approaches

Approaches to acknowledging uncertainty

In box 4, extract 1, the woman is concerned about the new evidence about hormone replacement therapy. She has concluded that the risks are small. The general practitioner backs up the woman’s assessment of the risk and also explains the difficulty of applying population evidence to an individual: “It’s very difficult to know whether if something happens to you whether it’s this or more likely whether it would have happened anyway.”

It then becomes clear that for the woman having energy for her “young lad” is important to her and given priority over the medical risk. A provisional plan is made whereby hormone replacement therapy will be used for now but then reviewed. It is through this provisional approach that the woman and doctor have achieved some integration of future risk from the intervention including the uncertainty inherent in the medical evidence, with how things are for the woman in the current time and place.

In another consultation (box 4, extract 2) there is agreement of a provisional plan for a reduction in the dosage of hormone replacement therapy, a suggestion that came from the woman. This plan integrates the concern about future risk from the therapy with the woman’s experience of symptoms, so linking across the gap between the medical evidence and the woman’s individual experience.

In a consultation with a practice nurse (box 4, extract 3) the risks of hormone replacement therapy are discussed and the woman describes feeling well. The nurse explains the risk of breast cancer, weaving a coherent story of the risks and benefits. The woman introduces the idea of a provisional decision “by then I might be okay we’ll just have to wait and see.” They agree on continuing the therapy for now, aware of the potential risk and of the good quality of life for the woman.

In another consultation (005) the doctor tells a woman who has been receiving hormone replacement therapy for six years for relief of symptoms, has a family history of breast cancer, and has annual mammography, that her risk of breast cancer is going up: it is about “weighing the two up,” “it becomes personal choice.” The woman says “Will anybody sort of say ‘hey’ at a certain point? Or will that be up to me?” The doctor says “I think what you’ll find is that there’ll be conversations like this once in a while,” indicating that the decision is a provisional one.

Use of the different approaches

Analysis of the consultations by role of the health professional and type of healthcare setting indicates a link between the approach used for the uncertainty inherent in medical evidence and the healthcare site (table 2). Certainty “for now” was found in the breast clinic. Weaving a coherent story of certainty predominated in the hormone replacement therapy clinic and bone clinic. General practice used all three approaches. The pattern of approach became clearer when explored in relation to the health concern discussed in the consultations (table 3). In all consultations where there was concern about a breast problem, health professionals used the approach of certainty for now with slippage into general reassurance. Where the result of bone densitometry and subsequent management was discussed, which in some consultations included use of hormone replacement therapy.
Box 3: Weaving a coherent account of the medical evidence for risks and benefits, but with blurring of the uncertainty inherent in the evidence and an impression of certainty

Extract 1: Consultation after bone densitometry

Doctor: Your bone mineral density is following the course you would, we would expect.
Patient: Right.
Doctor: It is going down, you would expect that at this point in the menopause.
Patient: So it’s not abnormal then or anything?
Doctor: It’s not abnormal.

(The woman’s mother has osteoporosis. The doctor explains:)
A woman with a close female relative has a 30% chance of having osteoporosis just because you know they’re related . . .
(The doctor then suggests she considers taking calcium and vitamin D and taking hormone replacement therapy. The woman says “I’ve never really been very keen on HRT.” The doctor then examines her and continues:)
With the constant, bone loss starts just round the very beginning that the hormones start to change, what we call the perimenopause and then you’re likely to lose bone well totally predictably to lose bone for about 10 years after the menopause so it will start to gradually come down. At the moment the results are normal, you have normal bone mineral density but err after about 10 years it’s going to drop into the below normal range, you can’t be certain, but it’s predictable, err, and it’s obviously what’s happened to your mum . . .
(A further detailed explanation followed of the role of hormone replacement therapy, its benefits and risks, including numerical expressions of risk, with the woman saying little until the doctor says:)
Effectively the choice is yours.
Patient: All right thank you for your time. (Bone clinic, consultation 001)

Extract 2: Woman mentions tiredness

(The doctor inquires about menopausal symptoms and after some discussion the woman asks:)
With HRT, can’t you only go on that for so long, and then they take you off? Am I wrong?
Doctor: What happens with HRT is . . .
(The woman laughs)
Doctor: Right HRT . . . whilst you’ve got your own hormone you don’t need HRT, so your bones are being protected by your natural hormone. Um, and HRT you get benefit from for your bones, for your heart point of view, from lots of different points of view. Now the longer you’re on HRT from the bones point of view, the better. The problem is the longer you’re on it from your breast point of view, people worry about the increase in breast cancer.
Patient: Mmm.
Doctor: And so what they try . . . it’s a balance of risks. So you take everybody individually. So somebody who has, a, a, a, a woman . . . a concern about breasts, maybe family history of breast cancer or something like that, you may be a bit more cautious on that side, but if somebody’s got a dreadful history of thinning of the bones, and osteoporosis you sort of have to weigh that up, don’t you. So you’d say “oh well perhaps you . . .” you know. So everybody’s individual, you weigh it up individually. The basic thing is that if you’re on HRT for, say, 10 years, say, there is definitely an increase in risk of breast cancer. At five years, less so. Seven-and-a-half, it . . . what . . . up to five years is thought to be fairly safe. So what . . . that, that’s where this business about “you can only be on it a certain length of time.”
Patient: Mmm.
Doctor: I’ve actually got ladies that have been on it 15 years. And are very very happy with it. I mean they wouldn’t stop it because it makes . . . it keeps them well.
Patient: Mmm.
Doctor: So you, what you do is you balance up that good you’re getting from it, with the downside.
(The consultation continues, returning to consideration of the woman’s tiredness. Hormone replacement therapy is not prescribed, but the woman is asked to think about it as a possibility for the future.) (General practice, consultation 025)

therapy, most of the consultations used a coherent story of certainty. In the one consultation on this health issue that did not use this approach, further test results were awaited. A coherent story of certainty was also used for consultations where hormone replacement therapy was initiated for other reasons. The health issues were discussed in specialist clinics and in general practice and by both doctors and nurses.

When reviewing the use of hormone replacement therapy or restarting therapy after a break, acknowledging uncertainty predominated. Some health professionals, however, wove a coherent story of certainty (see table 3). The consultations on this health issue were all recorded in general practice. No pattern was apparent linking the category of the consultation and whether the review was initiated by the woman or by the health professional.

Discussion

To achieve good communication between health professionals and patients, health professionals need strategies for coping with the dilemma of applying medical evidence to individual patients. These strategies could include using provisional decisions that allow for changing priorities and circumstances over time, avoiding slippage into general reassurance from a particular test result, and avoiding the creation of a myth of certainty.
Box 4: Acknowledging the inherent uncertainty of the medical evidence and negotiating a provisional decision

Extract 1: Woman is concerned about taking hormone replacement therapy
Patient: I've been having 'em, HRT patches and in the middle of the year there was a new finding.
Doctor: Right, the scare.
Patient: Right, so when they've finished I thought, I'd try to do without them.
Doctor: Right.
Patient: And I've been considering it and considering it—what I want to know is do you think—what's your opinion on it—when we talked about—when we talked about it earlier we weighed up all the pros and cons.
Doctor: Yes. Yes.
Patient: Is there a history of cancer, is there a history of heart problems—no history of cancer—but a history of heart problems so we decided it offered some a sort of protection to—but it seems to have taken a change—and then when I sort of thought about it later the percentage is quite small really isn't it.
Doctor: Yes.
Patient: When we, sort out how many people we're talking about it isn't large so I think that, I think that I'll go ahead with some more. Is that what, is that what you would advise, do you think it isn't—it isn't a big risk.
Doctor: No. It's certainly not a big risk—how long were you been on HRT for?
Patient: Oh not long—less than a year.
Doctor: OK, that's important because there's also risks associated with time that you're on HRT, so basically the longer you're on, the risk goes up, particularly if you're looking at breast cancer, but having said that you're absolutely right, the risk is still very small so any risk that there is only affects a very tiny minority of women and of course it's very difficult to know whether if something happens to you whether it's this or more likely whether it would have happened anyway.
Patient: And I was thinking of the quality of my life as well—my young lad I really need a bit more energy.
Doctor: Well that's important too (laughing).
(End of the consultation)

Extract 2: Consultation to review hormone replacement therapy
Patient: Err my Estraderm patches, I'm getting a new prescription today, now the last time I saw the nurse, she said this would be my last prescription and I wouldn't be able to have any more.
Doctor: Did she mean because . . .
Patient: Because of my age or something—and I thought well I'll come and see you, because I did funnily enough try to come off patches myself, and I still got very flushed, so I thought I better just pop in and see you while I'm here anyway.
Doctor: Yes, I mean you're 62 and therefore, sort of 10 years beyond a natural menopause but you had a pretty dramatic menopause—you've had your ovaries taken out.
Patient: Oh I've had all sorts.
Doctor: I guess, she may have been thinking in terms of osteoporosis prevention, in that 10 years would be adequate for that and also as you also will know, a longer term use of HRT is associated with breast cancer, however, if you feel that you'd rather carry on, bearing in mind you know the increased risk of breast cancer.
Patient: Yes.
Doctor: You know the big one, then I don't have any particular problem with this.
Patient: What about after this six months I mean obviously it's—would it—if I only say tried one a week instead of two how would that—or don't you do that with HRT.
Doctor: Well, or else what you could well. I'm just looking to see if they come in 25s—if you put one a week on, you'd be fine for the first half of the week and then . . .
Patient: Sure enough.
Doctor: Yes, they come in 25s so one option might be to draw three months of the 25s to see how you get on.
Patient: Yes, yes.
Doctor: You might find that when you decide to stop you have no hot flushes or you know whatever you got when you last decided to stop.
Patient: Well when you say long term use of . . .
Doctor: Yes, that's right—they advise five years, fine, up to 10 years is okay and then to rethink about it.
Patient: Well I mean by then I might be okay we'll just have to wait and see.
Nurse: That's right—blood pressure's fine—but it is something that you've got to be aware of.
Patient: Oh yes, I realise that—yes. (General practice, consultation 083)

Extract 3: Consultation with practice nurse
The woman and nurse have discussed the increase in breast cancer risk from taking hormone replacement therapy long term as shown by the US study reported in the media. The woman is feeling well while receiving hormone replacement therapy.
Nurse: But there is still a risk of breast cancer—but there again there is a risk of breast cancer in this age group anyway, but it is increased with long term use of . . .
Patient: Well when you say long term use of . . .
Nurse: Long term—10 years plus.
Patient: Oh, I'm getting up to that one now aren't I—8 years isn't it?
Nurse: Yes, that's right—they advise five years, fine, up to 10 years is okay and then to rethink about it.
Patient: Well I mean by then I might be okay we'll just have to wait and see.
Nurse: That's right—blood pressure's fine—but it is something that you've got to be aware of.
Patient: Oh yes, I realise that—yes. (General practice, consultation 083)

We studied how health professionals and women have been dealing with the dilemma of uncertainty inherent in medical evidence in relation to medical interventions focused on women at midlife. These interventions offer prevention, screening, and relief of symptoms, so the results may inform other areas of medicine where the type of evidence base is similar, such as prevention and treatment of chronic diseases. Further research may be needed to examine consultations about acute illness. The recorded consultations include examples where the doctor was attempting to communicate risk in ways that are known to be unhelpful to patients, particularly when weaving a coherent story of certainty. Training in clinical communication, including

Papers
how to communicate risk is important. Many successful models exist for such training. Our research does not suggest a new model, but highlights the importance of including in existing models an awareness of the dilemma involved in applying medical evidence to individual patients and strategies to cope with this.

The health professionals expressed an understanding of the evidence about the risks and benefits of the interventions more or less in line with the prevailing medical consensus at the time. During data collection, however, new evidence on the risks of hormone replacement therapy was published, so the content of some of the consultations would be different with less positive accounts of hormone replacement therapy. However, it is the way the accounts of the medical evidence were interwoven that produces the impression of certainty rather than the detail.

The data reveal a danger of creating a myth of certainty around what is inherently uncertain through the way the medical evidence is presented and discussed. This seems to be particularly so when there is a test result, such as for bone densitometry, or where an intervention such as hormone replacement therapy is being initiated. This way of presenting evidence about a medical intervention reinforces the idea of medicine as a precise science independent of context and people with the ability to predict outcome, which has become incorporated into lay models of illness. Apparent certainty can be persuasive and can lead to health professionals changing their understanding of the evidence to fit the story they are presenting to the patient. Part of learning to communicate well about risks and benefits of health interventions, and so truly to include patients in decision making, may be to fully recognise the uncertainties inherent in clinical evidence and not to hide this from patients. Health professionals would then stop reinforcing the myth of medicine as a science of certainty and prediction and could work creatively with its uncertainties alongside patients.

In consultations where hormone replacement therapy was being reviewed or restarted, a provisional decision was often agreed. This avoided the danger of further reinforcing the myth of certainty. The women interpreted the medical evidence for their current situation, including their physical symptoms, hopes and fears, social situation, and priorities. They may have been more able to do this at a review appointment as by then they had some experience of hormone replacement therapy. They may also have sought information themselves about the medical evidence, and through this process developed their ability to assess the evidence.

Time is an important dimension in this analysis. The clinicians in the breast clinic struggled to stay with the here and now in their desire to reassure the women. Consultations at the bone clinic and hormone replacement therapy clinic included mention of review of treatment in three, four, or five years. Mention of this time added to the impression of certainty rather than implying something provisional. The use of time, by making provisional plans, was the striking feature of the category of acknowledging the uncertainty. This fits in with reality for women, as their context, experience, and level of risk changes over time. The consultations in this category may provide useful examples of using time in health related decisions for use in the teaching of communication skills, as they show how a conditional decision can be reached and be a satisfactory outcome for a consultation.

Reassurance is appropriate where there are high levels of anxiety, such as in breast clinics (see box 2, extract 1); however, it is also possible to be clear about the temporary and tissue specific nature of the test result. Patients may seek certainty from

### Table 2 Categories of approaches to uncertainty inherent in nature of medical evidence by role of health professional and type of healthcare setting

<table>
<thead>
<tr>
<th>Healthcare setting and professional</th>
<th>Focus on certainty for now and this test, with slippage into general reassurance</th>
<th>Weaving coherent account of medical evidence for risks and benefits, but with blurring of uncertainty inherent in evidence and impression of certainty</th>
<th>Acknowledging uncertainty of outcome from using intervention including inherent uncertainty of medical evidence, and coping with this uncertainty through negotiated provisional decision</th>
<th>Not categorised</th>
</tr>
</thead>
<tbody>
<tr>
<td>General practice:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General practitioner</td>
<td>2</td>
<td>7</td>
<td>8</td>
<td>—</td>
</tr>
<tr>
<td>Practice nurse</td>
<td>—</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>19</td>
<td>15</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Healthcare setting and professional</th>
<th>Focus on certainty for now and this test, with slippage into general reassurance</th>
<th>Weaving coherent account of medical evidence for risks and benefits, but with blurring of uncertainty inherent in evidence and impression of certainty</th>
<th>Acknowledging uncertainty of outcome from using intervention including inherent uncertainty of medical evidence, and coping with this uncertainty through negotiated provisional decision</th>
<th>Not categorised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast clinic:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor</td>
<td>4</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Nurse</td>
<td>1</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Hormone replacement therapy clinic:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor</td>
<td>—</td>
<td>3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Bone clinic:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctor</td>
<td>—</td>
<td>5</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>Radiographer</td>
<td>—</td>
<td>1</td>
<td>—</td>
<td>1</td>
</tr>
<tr>
<td>General practice:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice nurse</td>
<td>—</td>
<td>3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>19</td>
<td>15</td>
<td>4</td>
</tr>
</tbody>
</table>

Table excludes four consultations that were not categorised.

### Table 3 Categories of approaches to uncertainty inherent in nature of medical evidence by health issue

<table>
<thead>
<tr>
<th>Health issue</th>
<th>Focus on certainty for now and this test, with slippage into general reassurance</th>
<th>Weaving coherent account of medical evidence for risks and benefits, but with blurring of uncertainty inherent in evidence and impression of certainty</th>
<th>Acknowledging uncertainty of outcome from using intervention including inherent uncertainty of medical evidence, and coping with this uncertainty through a negotiated provisional decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concern about breast lump or positive screening result</td>
<td>7</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Bone densitometry result and subsequent management</td>
<td>—</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Starting hormone replacement therapy</td>
<td>—</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Review of hormone replacement therapy or restarting after break</td>
<td>—</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Requesting information or referral for screening (mammography or bone densitometry)</td>
<td>—</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Table excludes four consultations that were not categorised.
The major types of evidence used in clinical medicine cannot be directly applied to an individual, so health professionals will continue to face the dilemma this creates. Through the teaching of training in communication skills and the design of healthcare consultations, with a growing evidence base of how it is best achieved.

What this study adds

A dilemma for health professionals is creating a myth of certainty around what is inherently uncertain.

This may be avoided by negotiating provisional decisions.

We thank the participants for their time, the Leicester Warwick Medical School GP Lecturer Group, the University of Warwick Academic GP Registrar Group, the University of Warwick Primary Care Research User Group for their contribution to the study, and the reviewers for their suggestions.

Competing interests: None declared.

Ethical approval: Warwickshire local research ethics committee and Hartlepool and North Tees local research ethics committee.

(Accepted 9 December 2004)

doi 10.1136/bmj.38336.48728.8F

Centre for Primary Health Care Studies, University of Warwick, Coventry CV4 7AL
Frances Griffiths senior clinical lecturer
Centre for Social and Policy Research, University of Teesside, Middlesbrough TS1 2BA
Eileen Green professor
Institute for Society, Health and Ethics, University of Cardiff, Cardiff CF10 3AT
Maria Tsouroufli research fellow
Correspondence to: F Griffiths f.e.griffiths@warwick.ac.uk