


Community breast pain clinics can provide safe, quality care for women presenting with breast pain

Mark Sibbering ,¹ Veronica Rogers,¹ Louise Merriman,² Iman Azmy,³ Denise Stafford,¹ Kevin Clifton,³ Jennifer Pickard,⁴ Thilan Bartholomeuz,⁵ John Robertson^{1,6}

To cite: Sibbering M, Rogers V, Merriman L, *et al*. Community breast pain clinics can provide safe, quality care for women presenting with breast pain. *BMJ Open Quality* 2024;**13**:e002882. doi:10.1136/bmjopen-2024-002882

Received 18 April 2024

Accepted 13 October 2024



© Author(s) (or their employer(s)) 2024. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ.

¹University Hospitals of Derby and Burton NHS Foundation Trust, Derby, UK

²Springs Health Centre, Chesterfield, UK

³Chesterfield Royal Hospital NHS Foundation Trust, Chesterfield, UK

⁴Crich Medical Practice, Crich, UK

⁵Mid-Nottinghamshire Place Based Partnership, Nottingham, UK

⁶Department of Breast Surgery, University of Nottingham School of Graduate Entry Medicine and Health, Derby, UK

Correspondence to

Dr Mark Sibbering;
mark.sibbering@nhs.net

ABSTRACT

Introduction Breast pain is not typically a symptom of breast cancer, yet nationally 20% of 2-week wait (2WW) breast referrals are breast pain alone. The East Midlands Breast Pain Pathway improves patient experience and frees capacity in secondary care diagnostic breast clinics, managing women with breast pain only in a community setting. We report the results of implementation of community breast pain clinics (CBPCs) at sites in Derbyshire (catchment population ~1 million), with 12 months follow-up data.

Results 1036 patients were seen at CBPCs between June 2021 and February 2023. The median patient age was 49 (range 16–88) years. 993 patients (95.8%) were discharged from the clinic with breast pain management advice. 43 (4.2%) patients were referred for further assessment at a 2WW breast diagnostic clinic. Objective family history risk assessment identified 124 patients (12.3%) above population risk of breast cancer, who were offered referral to familial cancer services for ongoing management.

Discussion Seven patients were diagnosed with breast cancer at or within 12 months of CBPC attendance. Five patients were diagnosed through attending the CBPC, one patient was subsequently referred to 2WW clinic with a new symptom and had a mammographically occult tumour and one was diagnosed following a subsequent routine breast screening invitation. Two of the five patients had a personal history of breast cancer which was a stated exclusion criterion for the CBPC. Breast cancer incidence in women with breast pain only and fulfilling CBPC referral criteria was 4.8/1000, confirming that this population is at low risk of developing breast cancer.

Patient service satisfaction was high with 99% (n=1022) 'extremely likely or likely' to recommend the service.

Conclusion The results confirm the pathway is the first to demonstrate women can be safely managed with breast pain alone in a community setting with high levels of patient satisfaction.

INTRODUCTION

Nationally, there is increasing demand for 2-week wait (2WW) breast clinic referrals, which can lead to delays in patient diagnostic pathways and failure to meet cancer treatment time targets.^{1 2} Unlike other tumour sites, breast services have been obligated to

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Breast pain alone is not a symptom associated with breast cancer and a small specialist community breast pain clinic has been successfully piloted.

WHAT THIS STUDY ADDS

⇒ It supports with prospective data collection the low incidence of breast cancer in this patient population and confirms that specialist community breast pain clinics are safe. It demonstrates that outcomes can be reproduced in a large population across a diverse area at multiple sites outside of hospital breast diagnostic clinics.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ Breast Cancer Faster Diagnosis Pathway Guidance⁶ mandates the introduction of new pathways for the management of patients with symptoms of breast pain. Community breast pain clinics in line with the East Midlands Breast Pain Pathway are the first dedicated breast pain clinics that have been successfully evaluated, demonstrating both safety and patient satisfaction, and may be more widely adopted across the NHS.

see all symptomatic breast referrals within 2 weeks of referral. This has resulted in flooding of the system with a significant percentage of women without a 'red-flag' symptom for breast cancer, such as those with breast pain alone, who are at no increased risk. Conversely, those with 'red-flag' symptoms who are reasonably suspected to be at increased risk may be delayed in being investigated and potentially diagnosed with breast cancer.

Referral levels for breast pain alone are relatively constant throughout the UK and Ireland and constitute on average around 20%.^{3–5} Recent Nation Health Service England (NHSE) guidance has stated that breast pain as a sole symptom is rarely a presenting feature of breast cancer and is not a sign of cancer.⁶ A recent literature review

on 'breast pain only' clinic attendees since 2000 also supports the NHSE guidance.³

Anxiety is common among patients referred on 2WW suspected cancer referral pathways.⁷ Patients with breast pain alone referred on a 2WW pathway are being over-medicalised by their attendance at cancer diagnostic clinics and inappropriately offered interventions, for example, imaging and biopsies. As a result, women with breast pain alone are not receiving the best care.

The Breast Cancer Faster Diagnosis Pathway Guidance⁶ recognises these problems, mandating triage of all new symptomatic breast referrals and diversion of patients away from one-stop clinics for those at low risk of a cancer diagnosis without red flag symptoms, such as those with breast pain alone. It suggests that such patients are seen in an appropriate setting to make the best use of one-stop clinic resources, reduce unnecessary and inappropriate imaging, and improve patient care. A recent statement from the British Society of Breast Radiology supports this strategy stating that ".patients presenting with breast pain (general or focal) ONLY should not be offered imaging".⁸

A pilot clinic in Mid-Nottinghamshire following the East Midlands Breast Pain Pathway (EMBPP) was the first of its kind to demonstrate that breast pain patients could be appropriately managed within a community setting.³ We now report the evaluation of community breast pain clinics (CBPCs) on a wider scale with 12-month follow-up outcome data regarding both safety and patient satisfaction, in line with Faster Diagnosis guidance on service evaluation⁶ to demonstrate an improvement in the quality of available services. This evaluation was conducted by the staff involved in the provision of the service, including clinicians, administrators, management and supporting

staff members, with governance oversight from Joined up Care Derbyshire (JUCD).

METHOD

The Derbyshire implementation of the EM Breast Pain Pathway was commissioned by JUCD and implemented by a project team with input from both primary and secondary care. The implementation included four important EM Breast Pain Pathway components:

1. Specialist breast pain clinics held in a community/primary care setting.
2. Reassurance that 'breast pain only' is not a symptom of cancer.²
3. Clinical examination by an experienced breast clinician.
4. Objective, reproducible familial breast cancer risk assessment.

The patient pathway is summarised in [figure 1](#).

Patients presenting with breast pain only as a symptom are managed in primary care as per NICE (National Institute for Health and Care Excellence) recommendations.⁹ The referral criteria to the clinic are patients presenting with breast pain only without red-flag symptoms or signs of cancer noted by the patient nor found by the referring clinician on examination. Excluded were (1) male patients, (2) patients under 16 years of age, (3) patients with a personal history of breast cancer who have an increased risk of a second breast cancer and (4) patients with breast implants, as they are more likely to require imaging or surgical opinion.

Before the implementation of the pathway, patients who were unable to be cared for in primary care by their

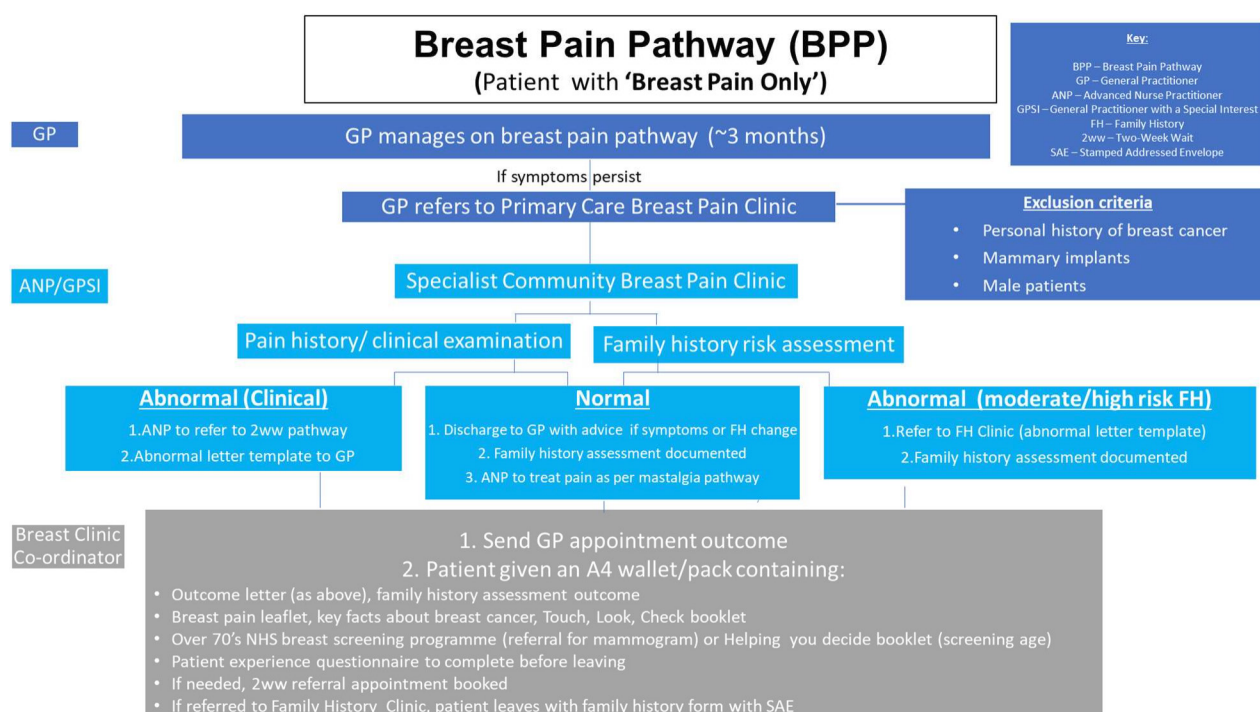


Figure 1 Patient pathway.

General Practitioner (GP) were sent to secondary care via a 2WW referral form. These patients were then seen in a 2WW clinic as part of urgent symptomatic breast referrals. After the implementation of the pathway, patients who were unable to be cared for by their GP were sent to the specialist breast pain clinic within the community, retaining the care of these patients within the community. This was done via a non-urgent referral form for this dedicated service.

Patients were referred via the National Health Service (NHS) electronic referral service, available only to the Derbyshire catchment population. Referrals to the breast pain clinic were vetted by an experienced breast clinician and any indicating additional symptoms were rejected and moved to a 2WW clinic. 2WW referrals received for breast pain alone were also triaged into the CBPC after discussion with the referring primary care practitioner.

Three clinic sessions were run weekly throughout the Derbyshire area: two sessions at the Florence Nightingale Community Hospital (Derby) in South Derbyshire and one session at Ashgate Medical Practice (Chesterfield) in North Derbyshire, to match the relevant catchment populations. The aim was to offer CBPC appointments within 2 weeks of referral, aiming to match 2WW pathway waiting times and that all women seen after 2 weeks should be due to patient choice, not lack of clinic access.

The patient was seen by an advanced nurse practitioner experienced in breast examination. If the clinical assessment was normal, reassurance was provided to the patient. Patients were advised on conservative management of their symptoms including advice on managing pain and bra-fitting. If the patient had a clinical abnormality, they were booked directly to a 2WW breast clinic without being referred back to their primary care referrer. The service was also staffed by a clinic coordinator who also acted as a chaperone, inputted the family history information for the patient's risk assessment and collected patient feedback via an anonymous questionnaire.

Breast cancer risk assessment was carried out according to NICE guidelines (CG164) for familial breast cancer in primary care.¹⁰ This was done using the Family History Risk Assessment Software (FaHRAS)¹¹ along with the supporting, validated Family History Questionnaire (FHQ) to gather the family history information. The FHQ and guidance were sent out to the patient with their appointment letter to complete and bring to their appointment. This was inputted into the FaHRAS tool which produced a management recommendation, as per the NICE Guidelines CG164,¹⁰ alongside clinical letter outputs.

Patients received clinical output letters detailing their risk assessment and were provided with an information pack about breast pain, including supplementary educational information, such as breast awareness leaflets, advice on National Health Service Breast Screening Programme (NHSBSP) for women between 50 and 70 years, and advice to patients over 70 years on how to access breast screening if they wished to continue to

attend. Patients were invited to submit anonymously a paper questionnaire to provide feedback on their CBPC attendance experience (table 1).

There was a prospective collection of data including (1) core demographic data obtained via local hospital systems, (2) CBPC outcome data collected on the day of attendance, (3) risk assessment data following input into FaHRAS at the clinic, (4) patient reported-outcome measures (PROMS) by anonymised questionnaires and (5) secondary care follow-up data relating to subsequent 2WW clinic attendance or cancer diagnosis.

Patient and public involvement

Although patients were not directly involved in the design and conduct of the study, we would like to thank the patients attending the CBPC for providing their feedback following their clinic visit.

RESULTS

A total of 1036 patients were seen between June 2021 and February 2023 (table 2). 706 (68%) patients attended the clinic in Derby, 330 were seen in Chesterfield. One patient attended the CBPC on two occasions. The median age of patients seen was 49 (range 16–88) years.

Clinic uptake and waiting times

Initial uptake of appointments at the CBPC during the first 4 months was relatively low (average 22 per month) as this new service was implemented across the summer period. This was identified as an area for quality improvement with an aim to increase the numbers attending the clinics. A plan was formulated to raise awareness of the clinic through educational events, proactive engagement with GPs and constructive feedback on 2WW referrals that would have met the referral criteria for this service. The results were examined and as awareness of the service grew, an average of 56 patients were seen each month from October 2021 onwards.

866 (84%) patients were seen in CBPCs within 14 days of their referral. All patients seen after 14 days were due to patient choice, achieving the stated aim for clinic access.

Clinic outcomes

The outcome data (table 2) show that 993 patients were discharged with management advice regarding their breast pain and no further action was required. 43 (4.2%) patients required further assessment after being seen at a CBPC and were booked directly into a 2WW breast diagnostic clinic. None of the patients seen within the CBPC were referred for imaging due to their breast pain alone.

1011 (98%) of 1036 clinic attendees completed the FHQ and had breast cancer risk assessment carried out. 25 patients did not complete an FHQ or declined a family history risk assessment. Of 1011 patients, 124 patients (12.3%) were assessed as at above population risk of breast cancer. 107 patients (10.6% of those undergoing risk assessment) of 124 were referred to FCS after a discussion

**Table 1** Breast pain clinic patient feedback (June 2021–February 2023)

Patient Experience Questionnaire (n=1036)		North Derbyshire	South Derbyshire	Total	%
Did your General Practitioner (GP) advise you that breast pain is not a symptom of breast cancer?	Yes	275	526	801	77.3%
	No	53	182	235	22.7%
How many times have you seen your GP for this episode of breast pain prior to being referred to this clinic?	1 Visit	212	438	650	62.7%
	2 Visits	77	177	254	24.5%
	3 Visits	23	58	81	7.8%
	4 Visits	4	13	17	1.6%
	five or more Visits	12	22	34	3.3%
Have you had any previous episodes of breast pain that required you to see GP?	Yes	151	295	446	43.1%
	No	177	413	590	56.9%
Did you find the breast pain advice you received helpful?	Yes	328	701	1029	99.3%
	No	0	3	3	0.3%
	Not sure	0	4	4	0.4%
Do you feel reassured by the breast pain advice you received?	Yes	326	692	1018	98.3%
	No	2	10	12	1.2%
	Not sure	0	6	6	0.6%
Did you find the information regarding your personal risk of developing breast cancer helpful?	Yes	318	663	981	94.7%
	No	0	11	11	1.1%
	Not Sure	10	34	44	4.2%
How easy was it to find the breast cancer information in your family?*	Very Easy	75	182	257	26.5%
	Easy	148	304	452	46.5%
	Not Easy	47	115	162	16.7%
	Difficult	23	42	65	6.7%
	Very Difficult	8	27	35	3.6%
Please rate how you found the Family History Questionnaire to complete?	Very Easy	83	194	277	26.7%
	Easy	191	372	563	54.3%
	Not Easy	36	106	142	13.7%
	Difficult	14	25	39	3.8%
How likely are you to recommend this service to friends and family if they had troublesome breast pain?	Very Difficult	4	11	15	1.4%
	Extremely Likely	283	574	857	82.7%
	Likely	43	122	165	15.9%
	Neither Likely nor unlikely	2	6	8	0.8%
	Unlikely	0	1	1	0.1%
	Extremely unlikely	0	1	1	0.1%
Don't Know	0	4	4	0.4%	

Overall Derbyshire totals and percentages highlighted in bold.

*Question added from September 2021.

Table 2 Community breast pain clinic outcomes

Patient audit	North Derbyshire	South Derbyshire	Total	%
Clinical assessment outcome, n=1036*				
Discharged	322	671	993	95.8
Referred to 2WW clinic	8	35	43	4.2
Total seen in clinic	340	706	1036	100
Risk assessment outcome, n=1011† (98%)				
'Near population risk'—no action required	283	604	887	87.7
'Above near population risk'	43	81	124	12.3
Referred to familial cancer services	38	69	107	10.6

Overall Derbyshire totals and percentages highlighted in bold.
 *5 patients were referred to both the 2WW clinic and familial cancer services.
 †25 patients did not complete the family history risk assessment.
 2WW, 2-week wait.

with the patient. A further 42 patients outside of the 124 identified at risk were also discussed with FCS due to other cancer family history. Of the 887 women assessed as at near population risk of developing breast cancer 253 (25%) listed a family member who had developed breast or ovarian cancer. Overall, 37% of the women attending the CBPC had a family history of breast or ovarian cancer.

Patient-reported outcome measures

The anonymous patient experience questionnaire had a 100% (n=1036) response rate with 99% of patients (n=1022) 'extremely likely or likely' to recommend the service. 98% (n=1018) of patients were reassured by the breast pain advice they received and 95% (n=981) found the information regarding their personal breast cancer risk helpful. The results of the patient feedback are summarised in [table 1](#).

At the end of the anonymised questionnaire, there were additional questions. Two of these questions were 'How did you feel before coming to the breast pain clinic?' and 'How did you feel after seeing the advanced nurse practitioner?'. The words and responses from patients have been used to construct the word clouds shown in [figure 2](#). In addition, there was a free-text box which provided further qualitative assessment by patients of the new service. The first 100 and the last 100 consecutive patient replies are shown in Supplementary Appendices S1a & S1b.

Secondary care follow-up data

Secondary care outcome data were obtained from the Chesterfield Royal and Royal Derby Hospital Breast Services.

9/1036 patients (0.9%) were referred by their primary care practitioner to a subsequent 2WW clinic within 3 months of their CBPC attendance, all with new breast symptoms in addition to breast pain. One of these was diagnosed with breast cancer.

Overall, seven patients seen at the CBPC during the evaluation period were diagnosed with breast cancer within 12 months of their clinic appointment, all were invasive ([table 3](#)).

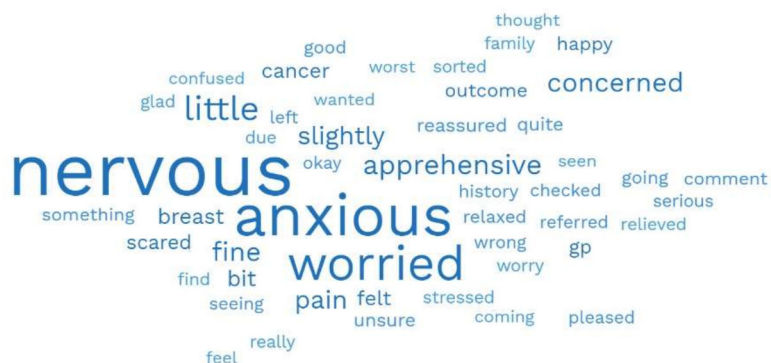
Two of these were direct referrals to a 2WW clinic following clinical assessment at a CBPC, one with clinical signs detected at the CBPC, the other due to having a previous history of breast cancer, an exclusion criterion for the clinic.

Four patients were diagnosed with screen detected breast cancers. Three of these were diagnosed within 2 months of CBPC attendance following a direct recommendation at the CBPC regarding eligibility to attend for screening mammograms. The fourth patient was diagnosed with an impalpable cancer, contralateral to her breast pain symptoms, 8 months following clinic attendance at her next scheduled breast screening appointment attendance for which had been recommended at the CBPC.

One patient was a subsequent new referral to the 2WW clinic having developed a new nipple retraction. This patient had a history of bilateral breast cancer treated by wide local excision and radiotherapy, not mentioned in the primary care referral, and in retrospect she did not fulfil the criteria for being seen in the CBPC. The new cancer diagnosed was mammographically occult.

Two of the seven CBPC attendees subsequently diagnosed with breast cancer were found to have a personal prior history of breast cancer. Excluding those who fulfilled the clinic exclusion criteria (previous breast cancer), 5/1034 who presented with 'breast pain only' were diagnosed with breast cancer within 12 months of their clinic attendance giving an incidence of 4.8 per 1000. Two of these cancers were diagnosed in the same breast as the breast pain symptoms, in three the cancer was contralateral to the breast pain.

“How did you feel before coming to the breast pain clinic?”



“How did you feel after seeing the advanced nurse practitioner?”



Figure 2 Word clouds.

After receiving referrals for these patients with a personal prior history of breast cancer, a plan to reduce the number of these referrals was established by refining the exclusion criteria for the clinic. Patients with a prior history of breast cancer, patients with mammary implants and male patients were all defined as exclusions for referral. Subsequently to this, no referrals of this nature were seen.

DISCUSSION

The pilot in Derbyshire (population ~1 million) has demonstrated implementation is feasible at scale in a larger catchment population. It has been delivered at multiple community sites, including a community hospital and a GP practice, which we believe to be an important factor in reducing these women’s anxiety regarding breast pain.

It has been delivered with consistent outcomes by a team of experienced clinicians (advanced nurse practitioners) rather than a single individual.

Patient safety

The Derbyshire evaluation provides evidence supporting the safety of the EM Breast Pain Pathway. No diagnostic cancer pathway is 100% accurate but it is reassuring there is no evidence that any patient would have had their breast cancer detected earlier if seen earlier in a 2WW clinic. Five out of seven breast cancers were diagnosed through attending the CBPC, either by direct onward referral to the 2WW clinic or through advice given at the CBPC to access NHSBSP mammographic screening. Mammographic screening advice is recorded by ANPs and screen-detected breast cancers diagnosed within

Table 3 CBPC patients diagnosed with breast cancer (BC)

Patient	Age	Clinic outcome	Referral source	Reason	Previous personal history of BC	Type of cancer	Side
1	70	Referral to 2WW	CBPC	Palpable lump, skin dimpling	No	Invasive	Ipsilateral
2	75	Referral to 2WW	CPBC	Exclusion criterion	Yes	Invasive	Ipsilateral
3	65	Discharged	Screening advised	5 years since last screening	No	Invasive	Ipsilateral
4	72	Discharged	Screening advised	Family history risk Eligible >70 years	No	Invasive	Contralateral
5	75	Discharged	General Practitioner : new red flag sign	Developed new nipple retraction	Yes*	Invasive	Not site specific
6	77	Discharged	Screening advised	Eligible >70 years	No	Invasive	Contralateral
7	57	Discharged	Routine screening	Screening age group	No	Invasive	Contralateral

*Previous history of bilateral BC.
CBPC, community breast pain clinic; 2WW, 2-week wait.

2 months of the clinic visit are attributed to the clinic attendance. The other screen-detected cancer was an impalpable cancer, contralateral to her breast pain symptoms, detected at a scheduled screening appointment. The patient later referred with new symptoms (nipple retraction) would not have been diagnosed with a breast cancer at the time, even at a 2WW clinic, as when they were diagnosed the cancer was mammographically occult.

Two of seven breast cancers were in patients who had a prior personal history of breast cancer, a stated exclusion criterion for the CBPC due to their increased risk. Such patients should not be seen in the CBPC as they should be triaged to a 2WW clinic, but this was not mentioned in their referral information. Now, a patient found to have an unknown previous history of breast cancer when seen in the CBPC is automatically onward referred to the 2WW clinic, even if a clinical examination is normal.

Five out of 1034 patients with breast pain only who fulfilled the inclusion and exclusion criteria for the CBPC had a breast cancer diagnosed giving an incidence of 4.8 per 1000. These prospectively collected data are in keeping with a recently published literature review (4.6/1000).³ One of the five was found by an experienced breast clinician to have a lump while the other four were diagnosed through mammographic screening advised at the CBPC appointment. Two of these cancers were diagnosed in the same breast as the breast pain symptoms, in three, the cancer was contralateral to the breast pain. While numerically small, this is in keeping with the literature that the breast cancers diagnosed in patients with breast pain are almost equally divided between ipsilateral and contralateral breasts. Larger population-based evaluations of implementation will be reported in due course in the East Midlands (population ~5.5 million), supported by the EM Cancer Alliance and EM Academic Health Science Network, and nationally involving a number of other Cancer Alliances and services in England implementing the EM Breast Pain Pathway.

The Derbyshire pilot, therefore, not only provides important evidence of the safety of the EMBPP but also supports the literature that this population of women has an overall incidence of breast cancer below that of women invited for mammographic screening by the NHSBSP. It, therefore, seems entirely appropriate to see these women for their breast pain in a community/primary care setting, without routine imaging available. This is in keeping with the recommendations of the British Society of Breast Radiology,⁸ Getting It Right First Time¹² and Faster Diagnosis Guidance.⁶ At the same time, by performing an objective breast cancer risk assessment the EM pathway identifies younger women at increased risk of breast cancer who between 40 and 50 years may be eligible not just for one-off imaging, but for annual mammographic surveillance and assists in providing access to that. Attendance for NHSBSP mammograms is promoted in the 50–70 years age group, as is the continued availability of NHSBSP screening after age 70 years on request.

Patient Satisfaction

Quantitative data

99% of attendees indicated they would be likely or extremely likely to recommend the service to friends and family if they had troublesome breast pain. A further indicator of patient satisfaction is that only nine patients (0.9%) were re-referred to a 2WW clinic within 3 months of their CBPC appointment, all with new symptoms. The 20 min CBPC consultation slots allow time to advise patients thoroughly on management of their pain symptoms which is not feasible in the 2WW diagnostic clinics, reflected in the patient feedback with 99% finding the breast pain advice helpful.

Qualitative data

The word clouds summarise the qualitative responses of all the patients' replies to two questions—'How did you feel before coming to the breast pain clinic?' and 'How did you feel after seeing the advanced nurse practitioner?' The word clouds show that the significant changes in how patients felt before and after their clinic visits and support the very positive quantitative PROMS as described above. In addition, the free-text box responses in Supplemental Appendixes show the individual responses of the first and last 100 consecutive patients, avoiding any selection bias, which supports the word clouds and the very positive quantitative data.

All of the anonymised PROMs, quantitative and qualitative, together show excellent patient satisfaction with the various components of the EMBPP and also overall with the care patients received at and through the CBPCs.

Improvement of services

An audit of referrals at the University Hospitals of Derby and Burton (7-week period, January–February 2020) showed that 214 of 1063 women (20.1%) referred on a 2WW referral pathway were for breast pain alone. This is in keeping with the reported literature, including a 2WW clinic audit in Manchester, where 18% of women referred had breast pain only as their presenting symptom.⁴ During the Derbyshire evaluation period, only 43 patients (4.2%) were referred on from the CBPC for 2WW clinic assessment, potentially freeing up 993 2WW clinic appointments for other patients. This means that 96% of patients with breast pain only (who previously accounted for approximately 20% of all 2WW referrals) would not need a 2WW appointment. This could potentially amount to 19% of all referrals previously made directly to the 2WW cancer diagnostic clinic, which would make a significant impact on reducing 2WW clinic waiting times, with the potential to speed up both the diagnosis and start of treatment for those patients who have a breast cancer.

It is important that patients seen in CBPCs represent a low-risk population for a breast cancer diagnosis. This was achieved through a combination of triaging out those at known increased risk (prior personal breast cancer history) and identifying those at increased familial risk at the clinic. The primary aim of the risk assessment was not

to deliver family history clinics in the community but to use the assessment as a method of triage. The use of the NICE Familial Breast Cancer guidelines for Primary Care¹⁰ was deemed to be the most suitable form of risk assessment as these patients were not identified at increased risk by nature of their presentation. The software had been validated in the primary care setting¹³ and had been used to support the previous breast pain clinic pilot.³

The familial risk assessment identified a significant proportion of women (12.3%) potentially at above population risk of developing breast cancer, facilitating the offer of onward referral to secondary care services. 24% of the women reported a family history of breast or ovarian cancer that did not significantly raise their personal breast cancer risk. The 36% of women attending CBPCs reporting a family history of breast or ovarian cancer is a higher rate than you would expect and may be due to those with a family history being more likely to present due to anxiety around their symptoms. Anxiety and poor understanding of breast cancer risk are likely the reasons why 95% of patients found the risk assessment helpful.¹⁴

Quality improvement

While improvement of the quality of available services was the primary aim, the ongoing evaluation of the service was able to capture various points of quality improvement within the development of the pathway itself. By implementing ongoing evaluation, shortcomings were able to be identified, addressed and the resulting outcomes measured. The methods used were compatible with Plan, Do, Study Act methodology and resulted in measured, specific quality improvement, that was realistically achievable in a timely manner.

The quality of the service provided was primarily improved through increasing the number of patients benefiting from the pathway. This increase in numbers was dramatic and facilitated the ongoing viability of these clinics. The refinement of referral criteria was also a significant quality improvement in order to maintain patient safety and reduce ongoing referrals from the clinic. Patients with prior history of breast cancer were excluded due to the increased incidence of breast cancer in this population which would make management within the community inappropriate and potentially unsafe. Patients with mammary implants were excluded due to being unable to fulfil the imaging requirements for these patients within the community.

Feedback on the availability of family history information highlighted an area for future quality improvement as 5.2% of patients found this information difficult/very difficult to obtain. While it can be difficult to provide increased availability of information, particularly where this is due to adoption, family disconnects or cultural taboos to the sharing of health information, other avenues could be explored to promote the availability and accessibility of this information. These measures could include more frequent recording of family history information on existing patient systems, better collection

techniques, improved data sharing protocols between health records and dedicated resources for collection of accurate family history information. The following areas were highlighted as opportunities to improve the quality of the service with corresponding actions:

- ▶ Improve breast pain literature by working with key stakeholders to develop a bespoke leaflet.
- ▶ Improve collection of family history information by working with FaHRAS to digitise the collection of family history information.
- ▶ Improve education available for breast examination to upskill staff.
- ▶ Improve support network for other breast pain clinics through workshops and site visits to share learning and improve adoption of pathways in other areas.

CONCLUSION

CBPCs have been successfully introduced at multiple sites in Derbyshire, a catchment population of just over 1 million people. The evaluation results confirm that the EMBPP can safely manage women with breast pain alone in a community setting with high levels of patient satisfaction, at the same time freeing up much-needed capacity in secondary care diagnostic breast clinics. It is the first breast pain pathway to demonstrate this, in keeping with NHSE Faster Diagnosis Pathway Guidance.⁶

Contributors Conception and design: MS, VR, LM, IA, JP, TB and JR. Collection and assembly of the data: MS, VR, DS, KC and JR. Data analysis and interpretation: MS, VR, KC, TB and JR. Manuscript writing and revising: MS, TB, VR and JR. Guarantor: MS.

Funding This project received funding from the East Midlands Cancer Alliance (no grant number applicable).

Competing interests MS is a Breast Surgeon who has provided Breast Cancer Educational Services and attended Advisory Boards for Roche Products Ltd. TB is a GP with special interest in Cancer Services, Clinical Lead for Mid Nottinghamshire Placed Based Partnership. JR is a Breast Surgeon with an interest in early cancer detection and has consulted for AstraZeneca, Bayer, Carrick Therapeutics & Cullinan Oncology. He also has provided expert testimony for AstraZeneca. He holds shares in Oncimmune Holdings, FaHRAS Ltd and Carrick Therapeutics. JP is a GP who works as the cancer clinical lead for Derby and Derbyshire Integrated Care Board (DDICB). Further implementation of the Breast Pain Clinic Model beyond Derbyshire has been facilitated through a collaborative agreement between Roche Products Limited and HITS – Health Improvement Transformation Strategies Limited a Community Interest Company. Roche Products have provided funding to support implementation of clinics.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement All data relevant to the study are included in the article or uploaded as online supplemental information. Not Applicable.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been

peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iD

Mark Sibbering <http://orcid.org/0000-0002-2202-0956>

REFERENCES

- 1 Nuffield Trust. Cancer waiting time targets. Nuffield Trust; 2021. Available: <https://www.nuffieldtrust.org.uk/resource/cancer-waiting-time-targets>
- 2 NHS Providers. Understanding cancer performance in the NHS. NHS Providers; 2020. Available: <https://nhsproviders.org/news-blogs/blogs/understanding-cancer-performance-in-the-nhs>
- 3 Jahan M, Bartholomeuz T, Milburn N, *et al*. Transforming the 2-week wait (2WW) pathway: management of breast pain in primary care. *BMJ Open Qual* 2022;11:e001634:1.
- 4 Dave RV, Bromley H, Taxiarchi VP, *et al*. No association between breast pain and breast cancer: a prospective cohort study of 10 830 symptomatic women presenting to a breast cancer diagnostic clinic. *Br J Gen Pract* 2022;72:e234–43.
- 5 Joyce DP, Alamiri J, Lowery AJ, *et al*. Breast clinic referrals: can mastalgia be managed in primary care? *Ir J Med Sci* 2014;183:639–42.
- 6 NHS England. Faster diagnostic pathways: implementing a timed breast cancer diagnostic pathway: guidance for local health and social care systems. 2024. Available: <https://www.england.nhs.uk/long-read/faster-diagnostic-pathways-implementing-a-timed-breast-cancer-diagnostic-pathway-guidance-for-local-health-and-social-care-systems>
- 7 Rowlands C, James P, and DL, *et al*. *Patient Worry and Concern Associated with Referral on the Two-Week Suspected Head and Neck Pathway*. *Br Dent J*, 2022.
- 8 Gibson E. British society of breast radiology. 2023. Available: <https://www.breastradiology.org/media/1294/bsbr-update-on-breast-pain-feb-23.pdf>
- 9 National Institute for Health and Care Excellence (NICE). Breast pain - cyclical. 2021. Available: <https://cks.nice.org.uk/topics/breast-pain-cyclical>
- 10 National Institute for Health and Care Excellence (NICE). Familial breast cancer: classification, care and managing breast cancer and related risks in people with a family history of breast cancer. 2013. Available: <https://www.nice.org.uk/guidance/cg164>
- 11 FaHRAS. FaHRAS - online. n.d. Available: <https://www.fahras.co.uk/fahras-online>
- 12 Getting It Right First Time (GIRFT), NHS England. Best practice timed diagnostic cancer pathways summary guide. Available: <https://getitrightfirsttime.co.uk/wp-content/uploads/2023/08/Best-Practice-Timed-Diagnostic-Cancer-Pathways-Summary-Guide-Aug-2023.pdf> [Accessed 5 Mar 2024].
- 13 Qureshi N, Dutton B, Weng S, *et al*. Improving primary care identification of familial breast cancer risk using proactive invitation and decision support. *Fam Cancer* 2021;20:13–21.
- 14 Evans DG, Burnell LD, Hopwood P, *et al*. Perception of risk in women with a family history of breast cancer. *Br J Cancer* 1993;67:612–4.