Final report

November 2017

Innovating for Improvement

Pre-operative psychology intervention for patients receiving hip or knee replacement

Royal Bournemouth Hospital

The Health Foundation

About the project

Project title:

Pre-operative psychological intervention for patients receiving hip or knee replacement

Lead organisation:

Royal Bournemouth and Christchurch Hospitals

Partner organisation(s):

Dorset Health Care University NHS Trust

Project lead(s):

Dr Elaine O'Shea

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Part 1: Abstract

Abstract

Does Preoperative Psychology intervention affect outcomes in total hip and knee replacement patients?

Objectives

To identify preoperatively those patients at risk of developing high levels of post-operative pain and offer them psychological support to improve anxiety, mood and expectations of surgery.

Method

Quality improvement methodology was utilised. A baseline period of data collection was followed by an intervention period where a psychological intervention was offered to identified patients.

In both periods, all total hip and knee replacement patients were screened preoperatively using the PROP score (Preoperative Risk of Pain) and patients were given a score 1-4. During admission patients pain scores, time to first mobilisation, GAD7 (anxiety score) and PHQ9 (depression score), patient satisfaction and length of hospital stay were collected.

In the intervention period, patients with a PROP score of 3 or 4 were offered preoperative psychological intervention. This was patient centred and consisted of a maximum of three sessions with a clinical psychologist, who used cognitive behavioural therapy (CBT), mindfulness and relaxation techniques.

Results

113 patients were screened; 66 within the baseline data group, and 47 within the intervention group. LOS in PROP 3 and 4 patients in the intervention group reduced compared with baseline mean LOS.

In the baseline group this was 142 hours compared with 108 hours in the intervention group (P =0.044). Pain as a reason for delayed mobilisation and delayed discharge also reduced, and patient feedback was very positive.

Conclusions

Providing a psychology intervention for high risk patients has been beneficial in improving patient experience and has led to reductions in length of stay.

Part 2: Progress and outcomes

Following an operation poorly managed pain can lead to further medical problems, increased length of stay and unsatisfactory patient and carer experience. Our project aimed to identify preoperatively patients at high risk of developing postoperative pain. We offered these high risk patients psychological support to improve their anxiety, mood and expectations of surgery. We envisaged that by offering this service it would help patients develop better coping strategies, aid self-management of pain and improve postoperative experience.

Psychologists from DHUFT delivered Cognitive Behavioural Therapy, Mindfulness and Relaxation techniques. The Psychologists became knowledgeable in operative and anaesthetic techniques used for Hip and Knee replacement surgery. They were also able to provide training to the Acute Pain Team.

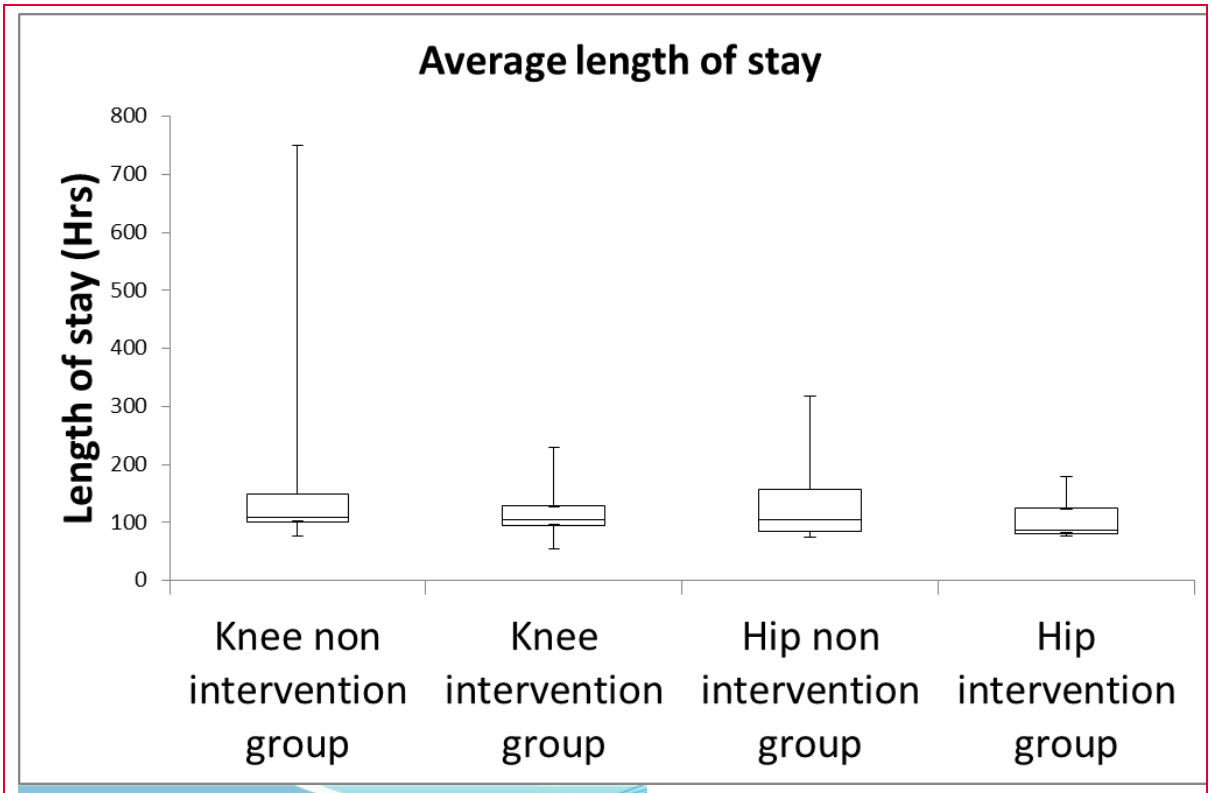
The Acute Pain Team and Project Manager telephoned high risk patients to offer the service and arranged the first appointment. We had a 75% uptake rate. The Psychologists arranged further appointments. (Maximum of 3 sessions preoperatively.) The Final appointment was arranged as close to patient's operation date as possible.

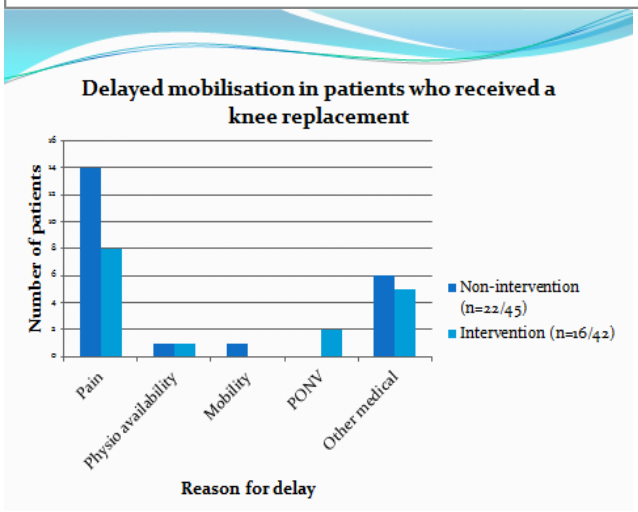
The Preoperative assessment team carried out screening and were on board with the project from the start. They saw the benefits of the service as they had previously spent much time counselling anxious and distressed patients. Now they are able to offer patients our service. We asked the Preoperative assessment team for regular feedback and provided them with regular project updates. We had regular team meetings and socials to help team morale.

Initially we planned to also see patients on the ward postoperatively, but this proved to be logistically challenging and not of great benefit to patients.

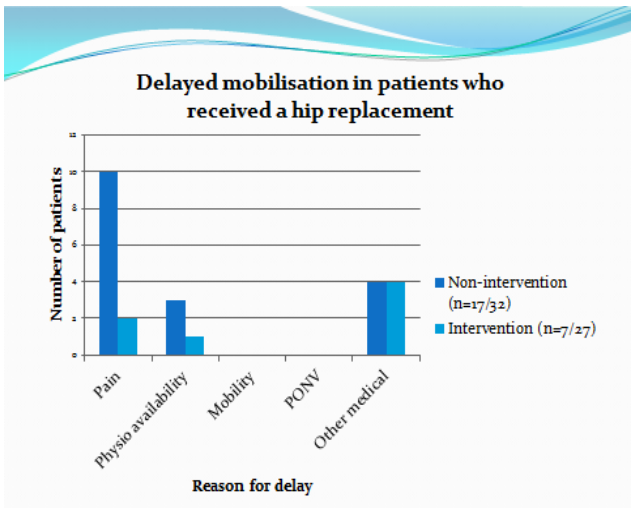
The primary intended outcome was to improve the care of those patients who are at risk of complicated pain management or psychological problems postoperatively.
Benefits to patients include improved recovery, better pain and psychological measures and a reduced length of stay in hospital.

Outcomes
The primary intended outcome was to improve the care of those patients who are at risk of complicated pain management or psychological problems postoperatively.
Benefits to patients included improved recovery, better pain and psychological support and reduced inpatient hospital admission.
Functional recovery was also enhanced, as measured by time to first mobilisation.
Improvements were analysed by looking at: -
•Length of stay
•Mobilisation during the postoperative period
•Pre and post intervention anxiety and depression scores
These were compared to baseline data collected pre intervention.





PONV = Postoperative nausea and vomiting



Reliability of the data, and information pertaining to the quality of baseline data
The initial baseline data was not sufficiently robust. Many data points were missing, and the sample size was small. I reviewed baseline data collected and created a new database at the start of project. This was vital to improve quality of data collected. I also tracked those who declined the service and added these patients to the baseline group. The total number in the baseline group is now >80. We also have more detailed information on postoperative mobilisation issues which relate to delayed discharges, by accessing the physiotherapy department database.

Initial data and patient feedback is very encouraging and we have shown not only a reduction in length of stay, but also a reduction in delayed discharges due to pain.
We have had valuable input on our data analysis from Bournemouth University.

Patient Quotes
"When I first went there I was extremely nervous. After two sessions my worries eased and after the third session felt no real worries about my surgery. There is little doubt in my mind that these sessions were extremely helpful and made me feel at ease with what was to happen. I am extremely grateful for the care and consideration I experienced."

"I was certainly put at ease and actually used some techniques to ease my pain".

"I went into my operation feeling totally in control and have done since"

Quote from Cognitive Behavioural Therapist
How do you feel it is benefiting patients?

"Patients attending find addressing their unique concerns a validating and reassuring experience, leading to a decrease in anxiety around their upcoming operation. They also find it useful for us to address common misconceptions and individualised issues about the operation and the aftercare / recovery period. Patients find it empowering that they know they can have a direct impact on their recovery and can take control over some elements of this. With a heightened awareness of this, clients then tend to make practical

plans on their own coping and start activating their interpersonal resources to assist their recovery. “

How you feel it has developed your practice?

“It has been an interesting experience to take what I know so well in terms of working with anxiety and depression to a medical setting. It has been fascinating to bring together knowledge and experiences from staff on the ward, alongside research into working with pain and recovery; then combining this with Psychological work to develop individualised sessions for patients. It has been satisfying to receive positive comments from patients about the sessions, and over time developing my knowledge in the field to advance the usefulness of sessions.”

Enablers and barriers for timely achievement of intended outcomes
Barriers were mainly due to time constraints and slow recruitment. I think any service which is such a new concept and in its infancy will take time to gather pace. Having such good results and positive feedback has really helped us to motivate and engage staff and patients. The communication department have been really helpful in giving us a profile within the hospital.

Part 3: Cost impact

- How is your service commissioned and paid for?

  A proposal is going to the 18/19 budget setting round to fund this initiative. However, without there being a clear source of funds, ongoing investment from the Health Foundation is the only way to ensure that this service continues at RBH categorically.

- Was there a financial evaluation of your project? e.g. by a Health Economist

  Our Director of Operations has agreed the financial analysis that for an annual cohort of 300 patients (though current service throughput is higher than this) that a length of stay reduction of 42 hours will save 525 bed days per year. This is a saving of at least £55,000.

- How did you calculate the existing and new costs (including implementation costs)? Are there any issues or limitations that need to be taken into account?

  The cost analysis of the new service are staffing costs: Psychologist, Project Manager, Acute Pain Nurse Band 6. It is quite difficult to compare costs as there

was no service available prior to our Project. Cost savings have been released through reduced length of stay and bed closures.

The cost implications beyond the term of the project will depend on whether funding can be secured to embed this work at RBCH. If the intervention is to be supported internally, then an evidence based business case will need to be produced. This will incur costs in analysing the data. This cost, as well as the ongoing clinician costs are the key ongoing financial implications identified by this project and are costed at £55,000 per annum.

RBH asks the Health Foundation whether all or part of this £55,000 could be funded by them.

Our main aim was to improve our patient experience and better prepare them for surgery, to give them some coping skills that would help them feel more relaxed and in control. What we found though that in addition to achieving this, our patients tended to have fewer delays in mobilising after surgery and that they left hospital sooner. This was obviously attractive to the Trust in terms of patient flow through the hospital and the cost savings released.

Part 4: Learning from your project

I have split this up into 2 sections :- 1. Planning, set up and implementation and 2. Spread and Sustainability.

PLANNING, SET UP AND IMPLEMENTATION

Aim to get the services you need in place quickly. Try to engage as many people as possible who have influence over the project. It is really helpful to map out the patient journey as this helps you to understand the process and clarifies everyone involved and their roles

Logistics-
Try to organise a cost code for the project relatively quickly as you will find most things require it. This will enable you to access services and most departments ask for a cost code upfront when you are setting up a service.

Service Level Agreements take much longer than anticipated. Pay attention to the fine detail and be clear with requirements. Human Resource involvement can take time, sometimes up to 6 weeks to organise contracts etc.

Clinic Space is at a premium. There is a complex booking system and you help may be needed to navigate it. Office space can also be challenging obtain. It's important to be flexible.

There are a lot of resources available to you. Quality Improvement teams, if your hospital has one are really helpful at facilitating new service.

Engage with other areas e.g. local universities. They can be really useful with data analysis and collection.

Always think ahead, plan your PDSA (plan,do,study,act) cycles and keep the timing tight on them. This will allow you to assess how things are running and make any necessary changes quickly.

Risk registers are a good thing to keep as it gives you an awareness of potential problems and plan for how to mitigate them.

Patient information leaflets/posters etc. are a great way of getting information out to lots of people quickly. The communication department will help with design and they will need to be passed by the PIG (patient information group) -make sure they are put in the right clinical areas though as ours mistakenly ended up in the maternity unit resulting in a few interesting phone calls from expectant mums enquiring if we did hypnobirthing !!

Writing large amounts whether it is a report or paper etc. can be very time consuming. You need to be in the right headspace to do it, and the right environment. A busy office is not the best place as you are constantly interrupted and once you lose your train of thought it can be difficult to regain it.

Learn to love your data, it can be frustrating and time consuming but it will ultimately help you towards making a business case.

People-
There are many difficulties in both service improvement and implementing change. Communication is key; both in imparting information and more importantly, when listening to others. Always try and initially meet people face to face as it builds a better relationship on which to move forwards. Start most emails with “I hope you can help”

Where possible give or ask for a realistic time for completion/action as this helps to keep things on track. It’s always good to keep in mind that although are yours will not be the only project that they will are working on.

Think of every aspect of your patient’s journey and how their paperwork follows them. Make sure ward staff know how to access and store the paperwork so that all data is captured. The nurses on the wards are extremely busy so anything you can do to make it easier and user friendly the better.

Finding out quickly when the best time of day to speak to staff on the wards was really important as there are pressure points for nurses -drug rounds, wards rounds, meal times which mean they just don’t have the headspace to listen to anything new, no matter how interested they are in a new service.

Self-motivation is really important especially when things aren’t going well or going too slowly-I found that by keeping the reason we started the service and the positive patient feedback we have received the forefront of my mind helps to motivate me.

Be clear with what is expected of staff, let them know their roles and responsibilities and also keep them updated on how their role impacts on the project as this will help to keep them motivated and feel valued. I found that by feeding back patient comments every few weeks the staff at pre-assessment were more on board and engaged with the new service.
Work on team dynamics and try to engage with all involved. Social get-togethers are important for morale and can really improve relationships.

Be careful not to overcommit yourself at the beginning of a project as these commitments can be difficult to fulfil as your project/service gathers pace.

Make a visual map of everyone involved, it doesn’t have to be complex just details of whom and what influence and requirements they have.

Be careful when it comes to taking things personally especially if you are working hard and getting nowhere. Doing the same thing over and over again won’t work- you need to regroup and move forward with a new plan.

Never be afraid to ask questions……the more you ask the more you realise most other people are winging it as well!

SPREAD AND SUSTAINABILITY

We are applying for a Spreading for Improvement award from the Health Foundation to enable us to involve other centres in our innovation.

Communication departments are a great resource for getting news out to the wider population.

Don't discount the late adopters as they can be a really useful resource in getting other people on board.

Charities can also become potential stakeholders. Involve and liaise with any that are relevant to your project.

Try to find relevant Patient Focus Groups. I'm currently attempting to set one up as apparently there are none at RBH.

Be prepared for things to take time within the NHS. Change can be very difficult to implement and getting people on board and keeping them motivated will help enormously.

In summary, as with most situations involving a large number of people, communication is the key to success. Speaking to people at the outset and on a regular basis really helped to motivate staff and helped the service to gather pace.

Part 5: Sustainability and spread

Our Trust has agreed to fund the service and have requested funds from the CCG to assist them with this. And the service has been recognised by our Chief Executive (Appendix 1). The Director of Operations has been completely on board from the outset which has really helped with our business case. He discussed our project at the Trust Management meetings and kept them updated on our progress. The Project Lead is also due to present to Trust Management Board shortly.

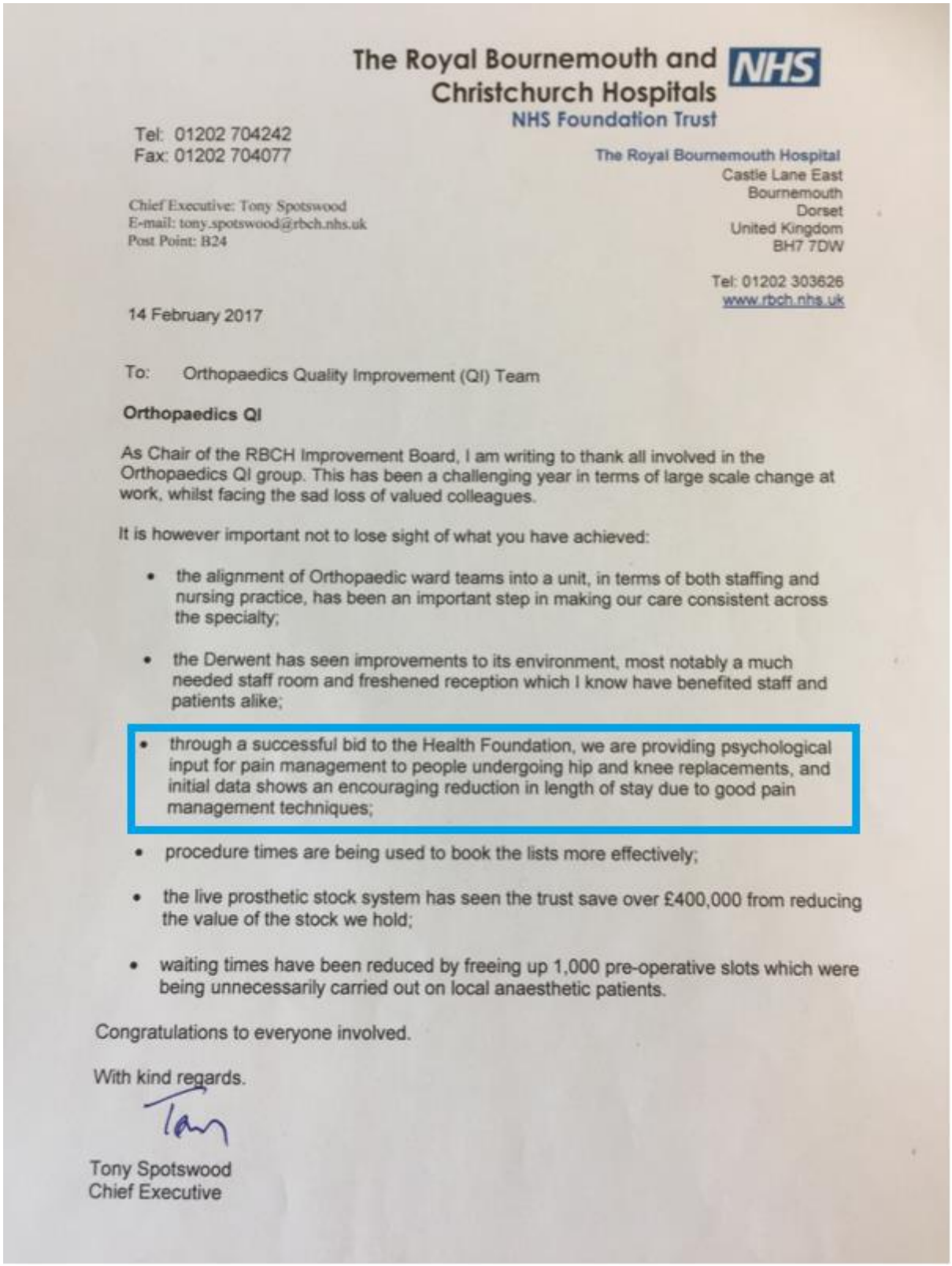
To streamline the service, we have changed the referral process so that our intervention is now offered by the Pre-assessment nurses directly. We have designed a Patient information leaflet (Appendix 2) which is given to patients, as well as increasing awareness of the service using posters and a patient story video.

A Regional BBC reporter came to RBH and filmed a piece for South Today a Regional News programme which was screened on 30th June 2017 and was very well received. We had quite a few patients refer themselves to the service after it was shown, quoting the show.

We have presented posters at both regional and national conferences (Appendix 3) and an oral presentation at the ERAS (Enhanced Recovery after Surgery) conference in Newcastle where we were nominated for The Ken Fearon award. We are planning to publish an article on our service and results, and have also been invited as a guest speaker at the National Acute Pain Symposium 2018. We also gave a poster presentation of our work at a local quality improvement event (Appendix 4).

We are very excited to have been selected to apply for a Spreading for Improvement award by the Health Foundation, which will greatly assist our ongoing work.

Appendix 1: Letter from Chief Executive of the Trust



The Royal Bournemouth and Christchurch Hospitals
NHS Foundation Trust

Tel: 01202 704242
Fax: 01202 704077

Chief Executive: Tony Spotswood
E-mail: tony.spotswood@rbch.nhs.uk
Post Point: B24

The Royal Bournemouth Hospital
Castle Lane East
Bournemouth
Dorset
United Kingdom
BH7 7DW

Tel: 01202 303626
www.rbch.nhs.uk

14 February 2017

To: Orthopaedics Quality Improvement (QI) Team

Orthopaedics QI

As Chair of the RBCH Improvement Board, I am writing to thank all involved in the Orthopaedics QI group. This has been a challenging year in terms of large scale change at work, whilst facing the sad loss of valued colleagues.

It is however important not to lose sight of what you have achieved:

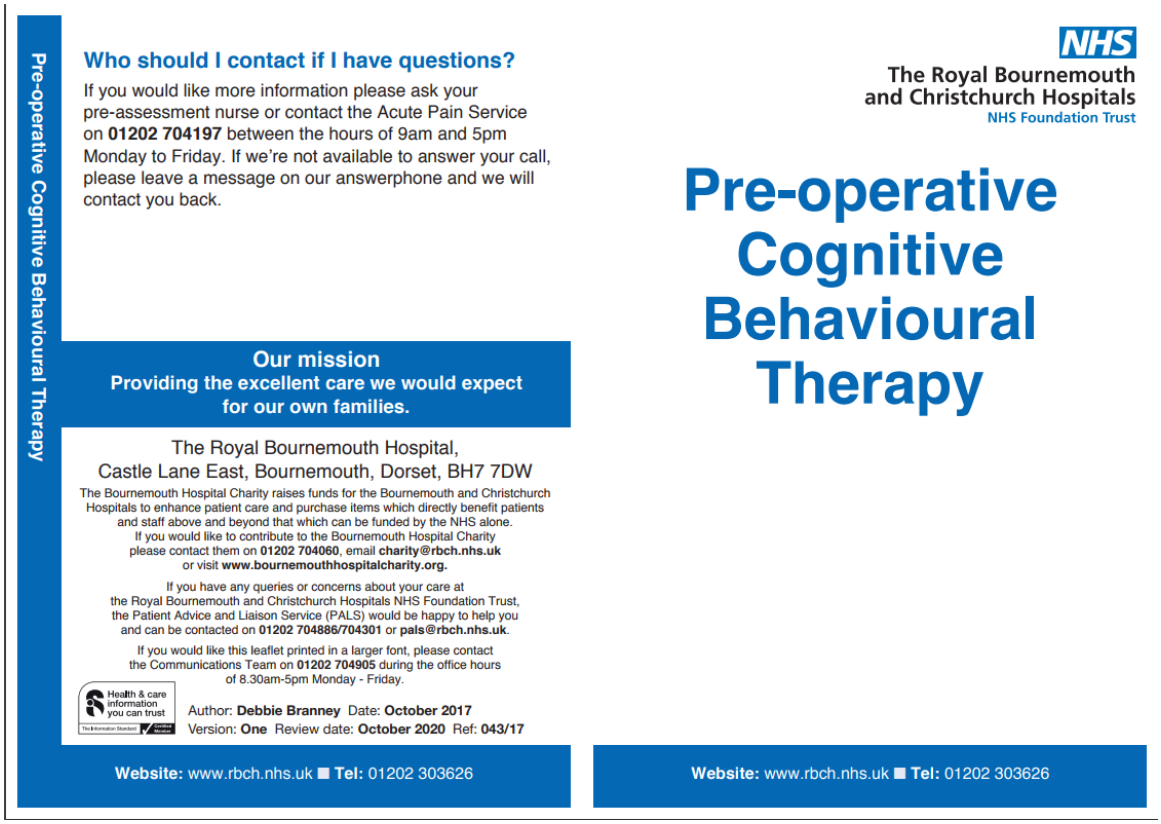
- the alignment of Orthopaedic ward teams into a unit, in terms of both staffing and nursing practice, has been an important step in making our care consistent across the specialty;
- the Derwent has seen improvements to its environment, most notably a much needed staff room and freshened reception which I know have benefited staff and patients alike;
- through a successful bid to the Health Foundation, we are providing psychological input for pain management to people undergoing hip and knee replacements, and initial data shows an encouraging reduction in length of stay due to good pain management techniques;
- procedure times are being used to book the lists more effectively;
- the live prosthetic stock system has seen the trust save over £400,000 from reducing the value of the stock we hold;
- waiting times have been reduced by freeing up 1,000 pre-operative slots which were being unnecessarily carried out on local anaesthetic patients.

Congratulations to everyone involved.

With kind regards.

Tony Spotswood
Chief Executive

Appendix 2: Patient Information Leaflet



Pre-operative Cognitive Behavioural Therapy

Who should I contact if I have questions?

If you would like more information please ask your pre-assessment nurse or contact the Acute Pain Service on **01202 704197** between the hours of 9am and 5pm Monday to Friday. If we're not available to answer your call, please leave a message on our answerphone and we will contact you back.

Our mission
Providing the excellent care we would expect for our own families.

The Royal Bournemouth Hospital,
Castle Lane East, Bournemouth, Dorset, BH7 7DW

The Bournemouth Hospital Charity raises funds for the Bournemouth and Christchurch Hospitals to enhance patient care and purchase items which directly benefit patients and staff above and beyond that which can be funded by the NHS alone. If you would like to contribute to the Bournemouth Hospital Charity please contact them on **01202 704060**, email **charity@rbch.nhs.uk** or visit **www.bournemouthhospitalcharity.org.**

If you have any queries or concerns about your care at the Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust, the Patient Advice and Liaison Service (PALS) would be happy to help you and can be contacted on **01202 704886/704301** or **pals@rbch.nhs.uk**.

If you would like this leaflet printed in a larger font, please contact the Communications Team on **01202 704905** during the office hours of 8.30am-5pm Monday - Friday.

Health & care information you can trust

Author: **Debbie Branney** Date: **October 2017**
Version: **One** Review date: **October 2020** Ref: **043/17**

Website: www.rbch.nhs.uk ■ **Tel:** 01202 303626

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Pre-operative Cognitive Behavioural Therapy

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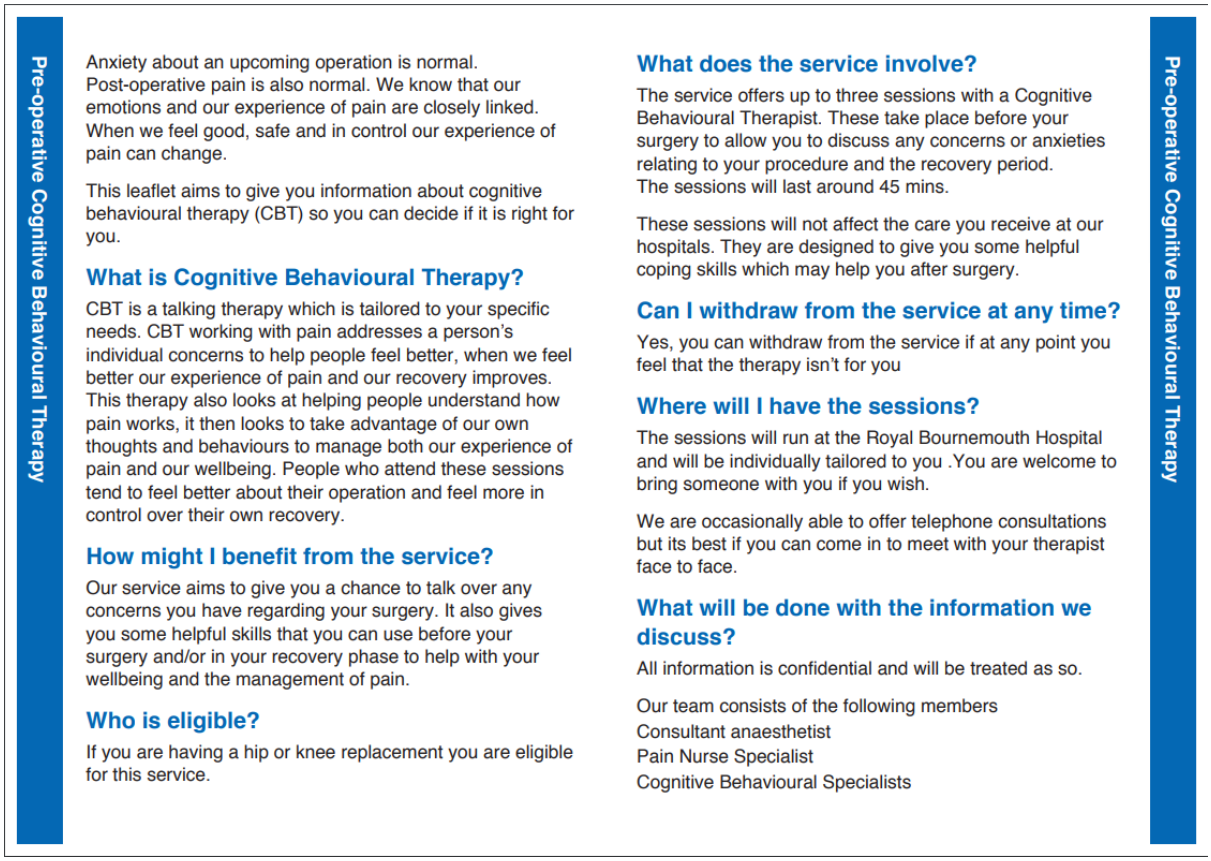


Pre-operative Cognitive Behavioural Therapy

Anxiety about an upcoming operation is normal. Post-operative pain is also normal. We know that our emotions and our experience of pain are closely linked. When we feel good, safe and in control our experience of pain can change.

This leaflet aims to give you information about cognitive behavioural therapy (CBT) so you can decide if it is right for you.

What is Cognitive Behavioural Therapy?

CBT is a talking therapy which is tailored to your specific needs. CBT working with pain addresses a person's individual concerns to help people feel better, when we feel better our experience of pain and our recovery improves. This therapy also looks at helping people understand how pain works, it then looks to take advantage of our own thoughts and behaviours to manage both our experience of pain and our wellbeing. People who attend these sessions tend to feel better about their operation and feel more in control over their own recovery.

How might I benefit from the service?

Our service aims to give you a chance to talk over any concerns you have regarding your surgery. It also gives you some helpful skills that you can use before your surgery and/or in your recovery phase to help with your wellbeing and the management of pain.

Who is eligible?

If you are having a hip or knee replacement you are eligible for this service.

What does the service involve?

The service offers up to three sessions with a Cognitive Behavioural Therapist. These take place before your surgery to allow you to discuss any concerns or anxieties relating to your procedure and the recovery period. The sessions will last around 45 mins.

These sessions will not affect the care you receive at our hospitals. They are designed to give you some helpful coping skills which may help you after surgery.

Can I withdraw from the service at any time?

Yes, you can withdraw from the service if at any point you feel that the therapy isn't for you

Where will I have the sessions?

The sessions will run at the Royal Bournemouth Hospital and will be individually tailored to you .You are welcome to bring someone with you if you wish.

We are occasionally able to offer telephone consultations but its best if you can come in to meet with your therapist face to face.

What will be done with the information we discuss?

All information is confidential and will be treated as so.

Our team consists of the following members
Consultant anaesthetist
Pain Nurse Specialist
Cognitive Behavioural Specialists

Pre-operative Cognitive Behavioural Therapy

Appendix 3: Poster for National Acute Pain Symposium

Does Preoperative Psychology intervention affect outcomes in hip and knee arthroplasty patients?

Dr E O'Shea, Dr A Nash, Debbie Branney, Lauren Anstee, Samantha Gibson, Dr Marina Malaffo, Ieuan Hopper.

providing the excellent care we would expect for our own families

The Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust

Objectives

To identify preoperatively those patients at risk of developing high levels of postoperative pain and offer them psychological support to improve anxiety, mood and expectations of surgery.

Method

A quality improvement methodology was utilised. A baseline period of data collection was followed by an intervention period where psychological intervention was offered to identified patients.

In both periods all total hip and knee arthroplasty patients were screened preoperatively using the PROP score (Preoperative Risk of Pain) and patients were given a score 1—4. During admission, patients' pain scores, time to first mobilisation, GAD7 (anxiety score) and PHQ9 (depression score), patient satisfaction and length of hospital stay were collected.

In the intervention period, patients with PROP score 3 or 4 were offered preoperative psychological intervention. This was patient centred and consisted of a maximum of three sessions with a Clinical Psychologist who used cognitive behavioural therapy (CBT), mindfulness and relaxation techniques.

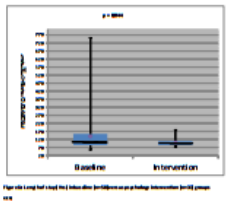
Results

91 patients screened. 58 patients baseline group; 33 patients intervention group.

Length of stay (LOS) in PROP 3 and 4 patients in intervention group reduced compared with baseline group.

In baseline group LOS was 142 hours compared with 108 hours in the intervention group (p=0.044)

Pain as a reason for delayed mobilisation and delayed discharge also reduced. Patient feedback has been very positive.



Conclusions

Providing psychology intervention for high risk patients has been beneficial in improving patient experience and has led to reductions in length of stay.

References

1. Perioperative Medicine– The pathway to better surgical care Royal College Anaesthetists 2015
2. Kalkman CJ, Visser K, Moen J et al Preoperative prediction of severe postoperative pain. Pain 2003; 105: 415-23
3. Janssen K, Kalkman CJ, Grobbee DE et al The risk of severe postoperative pain: modification and validation of a clinical prediction rule. Anesth Analg 2008; 107: 1330-9

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Appendix 4: Poster for local quality improvement event

Quality Improvement at Royal Bournemouth and Christchurch Hospitals NHS Foundation Trust

Communicate - Say it, hear it, do it! | Improve - Change it! | Teamwork - Share it! | Pride - Show it!

Pre-operative psychological assessment and management to improve pain experience following surgery

Define

- Aim: Within one year, to improve the post-operative pain experience of patients having hip or knee replacement surgery
- A screening tool was developed to pre-operatively identify patients at increased risk of developing high levels of post-operative pain
- These patients were offered a psychology service to improve their pain experience

Multi-disciplinary Team

Improvements

- Post-operative psychology intervention was challenging to deliver, so efforts were re-focused on pre-operative psychological support only
- To gain a rounded understanding of the patients' experience the following were measured: pain scores, time to first mobilisation, patient satisfaction and quality of life, and length of stay
- Statistical comparisons were made between two groups:
  1. Baseline group (PROP score 3 or 4 with no psychology intervention);
  2. Intervention group (PROP score 3 or 4 with psychology intervention);

  PROP, pre-operative predictor of pain

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Measurements

- Emerging results are encouraging with a reduction in length of stay
- Very positive patient feedback
- Over 75% of patients said they felt better prepared for their surgery after receiving the psychology intervention

"I feel that the psychology service before the operation really helped me and took some of the anxiety away. I also had quite a lot of depression with other life situations and the first appointment changed that. I walked away feeling much better"

Outcomes & Lessons Learnt

- **Lesson learned so far…**
- Service Level Agreements take much longer than anticipated. Pay attention to the fine detail and be clear with requirements
- Clinic Space is at a premium. There is a complex booking system and you will need help to navigate it
- Try to organise a cost code for the project relatively quickly as you will find most things require it
- Don't be afraid to ask questions……the more you ask the more you realise most other people are winging it as well
- Learn to love your data, it can be frustrating and time consuming but it will ultimately help you towards making a business case
- Don't discount the late adopters as they can be a really useful resource in getting other people on board
- Aim to get the services you need in place quickly. Try to engage as many people as possible who have influence over the project
- Having such good results and positive feedback has really helped us to motivate and engage staff and patients
- Engage early with your communication team. They have been really helpful in giving us a profile within the hospital
- Preliminary results are very encouraging with reduced length of stay and positive patient feedback

For more details, contact:
Debbie Branney, Project Manager
Email: debbie.branney@rbch.nhs.uk

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