OCTOBER 2024

FINAL REPORT

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Beaumont iPainCentre team win the Grunenthal Advancing the Standard of Care in Pain Management Award at the Hospital Professional Honours Ceremony (14th Sept 2024).

Acknowledgements

We would like to thank our senior management team in Beaumont Hospital for supporting and contributing to the success of the iPainCentre project. This includes Paddy Clerkin, David Sweeney, Prof Ger Curley, Siobhan Byrne and Anne Coyle.

We also thank the managers and staff in the anaesthesia, nursing, physiotherapy, psychology and clerical departments, and the primary care clinical staff and community workers in North Dublin.

Finally, thanks to our colleagues in the HSE, Pobal and Sláintecare for funding and supporting this important pilot project.

Introduction

Pain is an unpleasant sensory and emontional experience and is a danger signal generated in the brain to alert the sufferer to actual or potential harm to the body. It is an important mechanism to protect us from injury. However, if pain persists beyond the point of tissue healing and is not longer an effective danger signal, it is termed
"chronic pain".

Over 20% of the Irish population suffer with chronic pain. It is the most common reason people visit their GP with 3 of the top 10 reasons being low back pain, headache or osteoarthritic pain (St. Sauver 2013). Chronic pain, in particular low back pain and neck pain, is by far the leading cause of years lost to disability worldwide (Murray 2013). This means the economic cost of chronic pain is huge with an estimated cost of $635 billion per year in the USA and €5.34 billion
(2.86% of GDP) in Ireland (Raftery 2012).

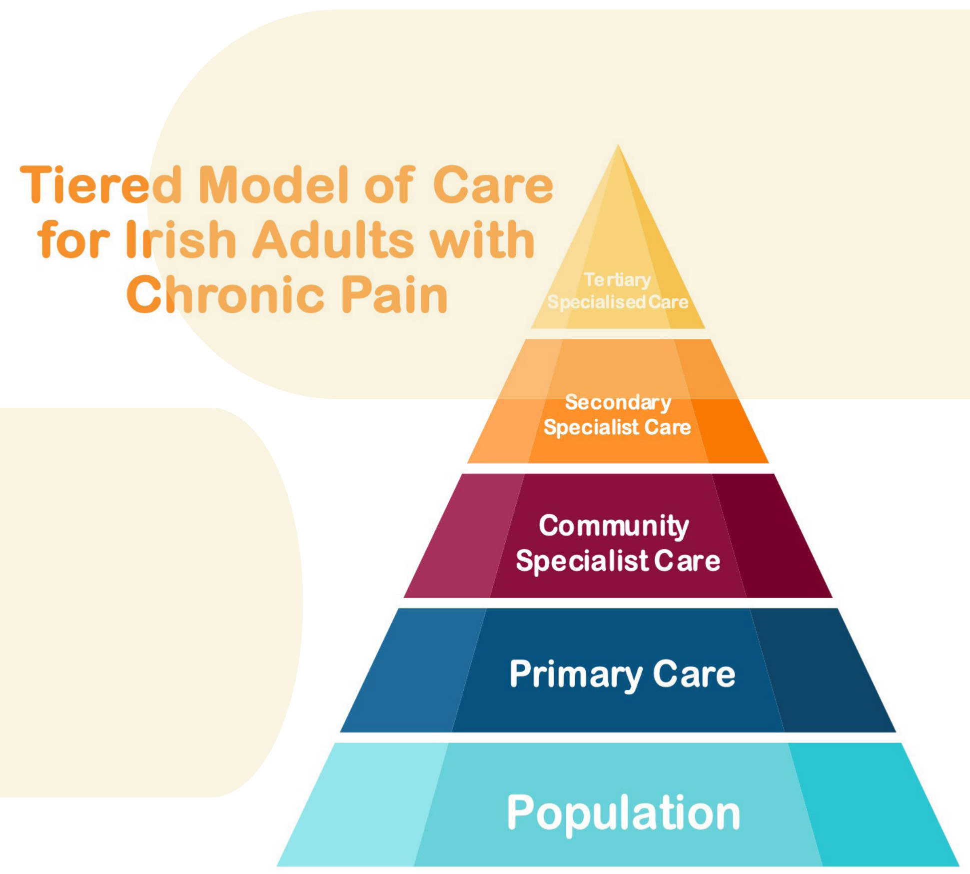
Considering the above information, the HSE and the Modernised Care Pathways group prioritised the development of 3 care pathways for the most common chronic pain conditions:

- Low back pain
- Radicular pain (sciatica)
- Chronic widespread pain (incl fibromyalgia)

The pain management team in Beaumont Hospital under the supervision of Dr David Moore were funded via the Sláintecare Integration Innovation Fund (SIIF) Theme 3B to test the above pathways in a 2-year pilot project.

The primary focus of the project was the creation of a community-based pain management team with a high level of clinial expertise. The team would interact across all levels of healthcare on behalf of the patients and would act as a fully integrated pain management centre - the **iPainCentre**.

The iPainCentre moves away from the "traditional" pain service model and focuses on service integration, optimising use of available resources, shifting to a rehabilitation model of care, using multidisciplinary treatment pathways and moving away from multiple interventions and investigations.



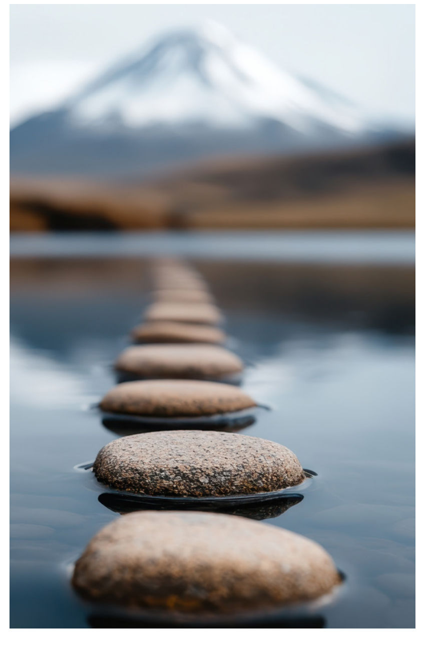
PAIN **MANAGEMENT**

Model of Care

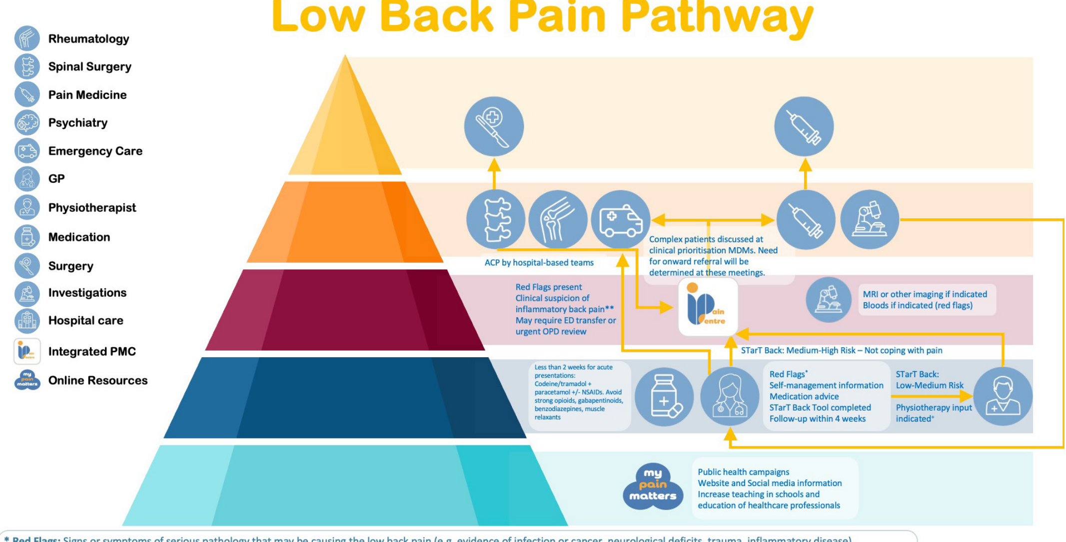
The Faculty of Pain Medicine and the National Clinical Programme for Anaesthesia (NCPA) initiated the development of a Model of Care for Pain Management services in Ireland. The project lead is Dr David Moore and 2 other iPainCentre team members (Dr Joanne O'Brien and Róisín Ormond) are on the steering group. The iPainCentre concept of an integrated pain team embedded in the community will be a key feature of the model of care. The centre piece of the tiered model of care (above) is the "community specialist care". All future pain management pathways will be mapped onto this model.

Clinical Pathway Design

The pathways for the pain management project are designed in a collaborative way. Key stakeholders contribute ideas on the pathways and this information is processed by the Modernsied Care Pathways group. The pathways are informed by international guidelines and research evidence. Representives in the area of Pain Medicine, Rheumatology, Spinal surgery, Physiotherapy, Psychology and Nursing have input.



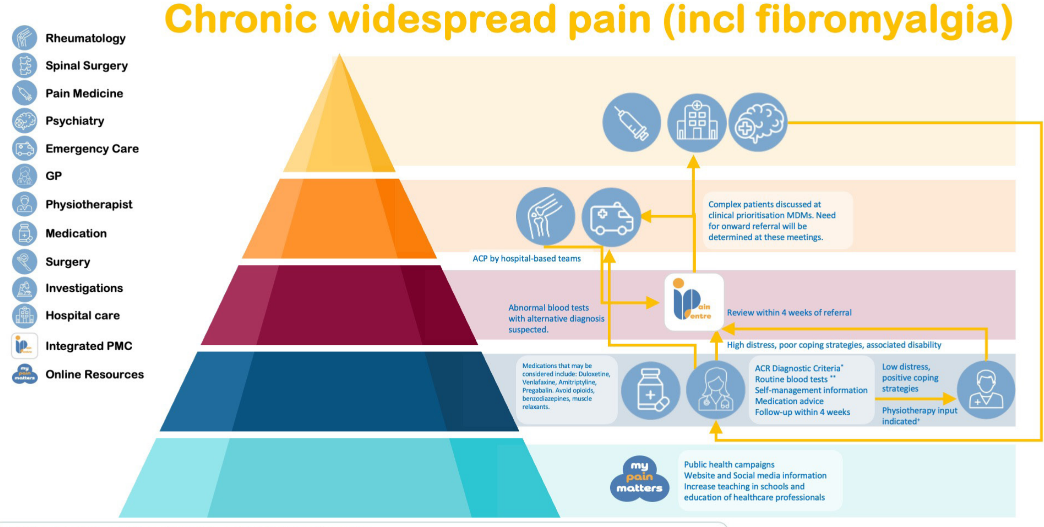
The pathways map neatly onto the tiers of the model of care. The lower levels of the pathways place a greater onus on the patient to self-direct their management and understanding of their pain. As the pathways advance to higher tiers, their is greater input and collaboration with clinicians.



*** Red Flags:** Signs or symptoms of serious pathology that may be causing the low back pain (e.g. evidence of infection or cancer, neurological deficits, trauma, inflammatory disease).
**** Consider inflammatory back pain:** Morning stiffness > 30 minutes, pain lessens with activity or exercise, buttock pain, age <40, insidious onset, pain wakens during the second half of night.
+ Indications for physiotherapy input: Lack of confidence in progressing with exercise, fear avoidance behaviours, boom/bust patterns.
Advanced clinical prioritisation (ACP): Process involves contacting referred patients by phone to determine best location for assessment and treatment.

Patients attend a “1st visit” group workshop to introduce them to the iPainCentre and our core pain management principles. They are then assessed by the Physiotherapist or the ANP. An individualised treatment plan is put in place. They may receive 1 to 1 treatment with the Physiotherapist and/or Psychologist. They may be enrolled in one of the group programmes, Moving Forward or Road Ahead. They receive advice on medication management, lifestyle optimisation and may be listed for injection treatment. The goal is to improve their function and quality of life in the presence of pain.

“THE PAIN IS OUT OF CONTROL. I CAN’T LIFT ANYTHING. I CAN’T LIFT MY BABY. I WORRY ABOUT THE FUTURE.” MELANIE, 32.

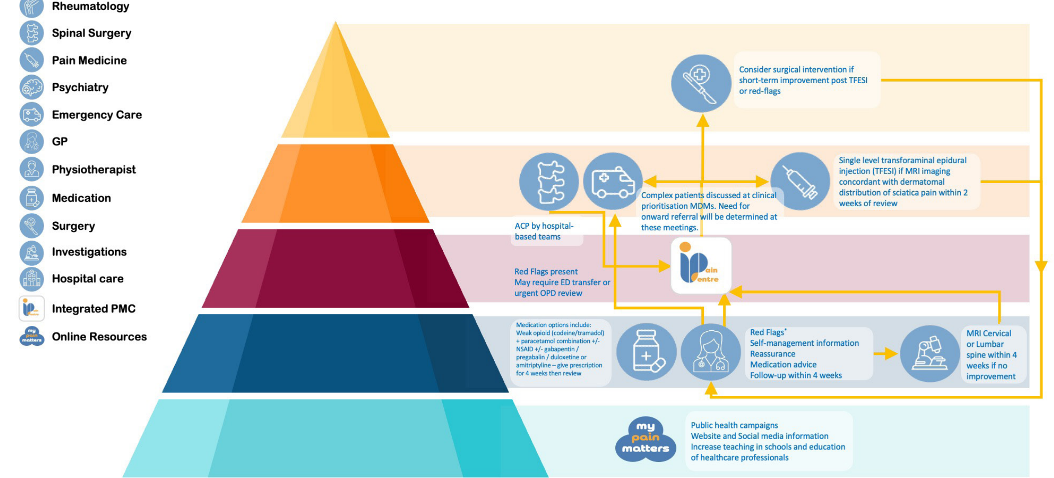


* ACR (American College of Rheumatology) Diagnostic Criteria for Fibromyalgia
** Recommended blood tests: FBC , ESR, CRP, renal liver bone profile, CK, TFTs, fasting glucose
\+ Indications for physiotherapy input: Lack of confidence in progressing with exercise, fear avoidance behaviours, boom/bust patterns.
Advanced clinical prioritisation (ACP): Process involves contacting referred patients by phone to determine best location for assessment and treatment.

Patients attend a “1st visit” group workshop to introduce them to the iPainCentre and our core pain management principles. They are then assessed by the ANP. An individualised treatment plan is put in place. A core part of their treatment is evidence-based education about fibromyalgia delivered via **mypainmatters.ie**. They may require 1 to 1 treatment with the Physiotherapist and/or Psychologist. They can attend an “Ask the Expert” session to discuss their pain and explore questions they have. They may be enrolled in one of the group programmes, Moving Forward or Road Ahead. They receive advice on medication management and lifestyle optimisation especially sleep hygiene and exercise routines. The goal is to improve their function and quality of life in the presence of pain.

“MY FAMILY TELL ME I LOOK FINE, BUT I FEEL SO BROKEN AND SICK INSIDE. SOMETIMES I’D PREFER TO HAVE CANCER THAN FIBROMYALGIA.”
LAURA, 30.

Radicular Pain (Sciatica) Pathway



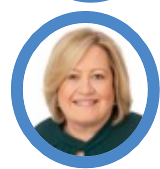
*** Red Flags:** Signs or symptoms of serious pathology that may be causing the sciatica pain (e.g. evidence of infection or cancer, neurological deficits, trauma, inflammatory disease).
Advanced clinical prioritisation (ACP): Process involves contacting referred patients by phone to determine best location for assessment and treatment.

Patients are referred by their GP or community physiotherapist for urgent assessment if sciatica is suspected. The patients may also be referred by the spinal surgery team via ACP. The patients are assessed by the iPainCentre Physiotherapist and are scheduled for urgent epidural injection if appropriate. Patient cases will be discussed at the weekly Spinal MDM if spinal surgery assessment is necessary. The duration of pain and the fast resolution in symptoms means that most patients will not require a group programme or prolonged treatment period.

“I’M OUT OF WORK OVER 4 WEEKS AND I CAN’T STAND OR WALK FOR MORE THAN 5 MINUTES. IT FEELS LIKE MY LEG IS ON FIRE.”
TONY, 48.

iPainCentre Team

DR DAVID MOORE **CONSULTANT PAIN SPECIALIST + CLINICAL LEAD**



DR JOANNE O'BRIEN **REGISTERED ANP**

RÓISÍN ORMOND **CS PHYSIOTHERAPIST**

TANYA CLARKE **CLERICAL OFFICER**

DR KOMAL HAMID **SNR PSYCHOLOGIST**

In addition, support staff in post:

- Dr David Devlin (Consultant Anaesthetist) - 0.35 WTE to backfill Dr Moore anaesthesia commitments.
- Deborah Evans (Pain CNS) - 1.0 WTE to support Beaumont Hospital clinical activity in Dr Moore's absence.

Governance

The iPainCentre is a relatively novel concept for the Irish healthcare system. Therefore, the governance structures required some consideration to safeguard staff and patients, and also to optimise efficiency.

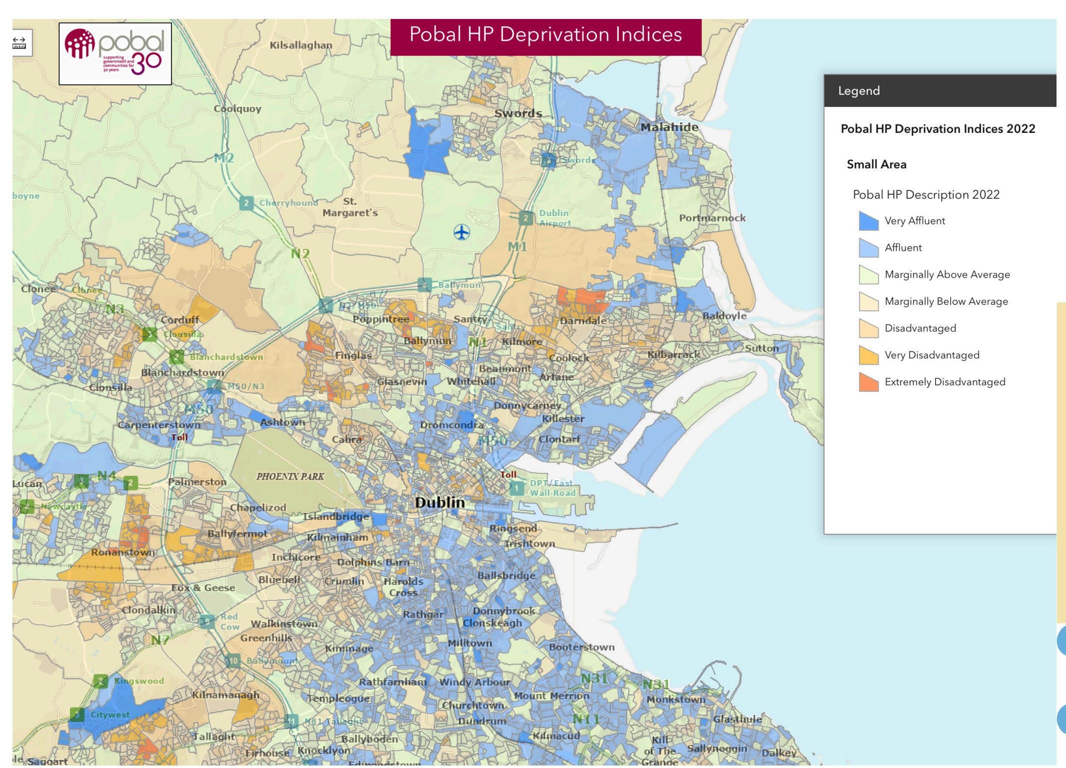
Corporate governance rests with Beaumont Hospital. Risk assessments were completed for all off-site locations including the OMNI centre and Glin Road gym. All staff are paid employees of Beaumont Hospital and fall under the clinical indemnity scheme within the hospital.

Clinical governance rests with the Clinical Lead for the team Dr David Moore. This is an important point. The team is made up of different members from different departments. It is crucial that the team works as a coherent unit with a common goal. All team decisions are discussed by the team to facilitate a democratic result.

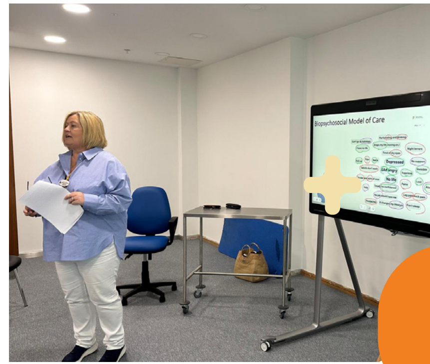
Professional governance rests with the head of each clinical department. This involves continued educational responsibilities, teaching and research activities within departments, mentoring, etc.

Location

The iPainCentre is integrated into the North Dublin community. This is the ideal location to pilot and develop the first iPainCentre. Both Ballymun and Prioswood/Kilmore have been identified by Sláintecare as priority areas where people are at risk of poor health and wellbeing and need targeted interventions due to social determinants of health. In our catchment 40% of the population are ‘below average’ on Pobal HP deprivation index with pockets of extreme disadvantage in areas like Darndale, Ballymun and Finglas. These areas are highlighted as dark orange on the map below. There are important links between deprivation and developing chronic pain and opioid dependence. Our catchment area is probably the area with the greatest need for a community-based integrated pain service.



Location



The iPainCentre team are based in the OMNI Shopping centre in Santry, Dublin 9. This is in close proximity to Beaumont Hospital but is located and integrated into the community. The team run clinics and workshops in 2 separate units in the shopping centre. The team also use primary care centre space in the local area for clinician and patient meetings. Our physiotherapist also leads a workshop in the local community gym in Glin Road.

Location

The environment we assess and treat our patients in is a vital part of the therapeutic experience. Remember, chronic pain is a danger signal generated in the brain based on information the body is collecting for the brain. If the patient finds themselves is a stressful, threatening environment their pain is likely to increase. The idea of "therapeutic architecture" was pioneered by the Finnish architect Alvar Aalto when he created the Palmio Sanatorium. This was a space that generated a sense of calm and wellbeing in it's patients. We have endevoured to create a positive, calm and welcoming enviorment for our patients in the OMNI centre. One example is the Psychology space in the picture below. All medical equipment has been removed and replaced with comfortable chairs, plants and coffee cups.

Pain Education

"I think it is because of Injections in the spine when I had 2 C-sections." Natalia, 39.

"I've been sleeping on my side for years and this has damaged my spine." Catherine, 72.

One of the most important therapeutic interventions in chronic pain is patient education. Empowering patients with a better understanding of their pain and where it is coming from is proven to improve coping strategies and enhance quality of life scores.

Sláintecare Health Literacy Report 2024 identifies that 40% of the population in Ireland have poor health literacy. This impacts their ability to effectively manage their health and interact with healthcare services especially when it comes to some of the more complex concepts in pain management. The patient comments above highlight some of the popular myths that exist about back pain. This emphasises the importance of delivering education and support to people with chronic pain in their community.

Patients are asked on entry to the iPainCentre what they believe is causing their pain. Most patients (92%) identify a physical problem as the cause of their pain (e.g. disc bulge, degenerative spine, etc.) and 40% are specifically looking for a cure or fix to pain. We understand that the cause of chronic pain is more complex with biological, psychological, and social factors mixed together and there is rarely a fix or cure available.

Our team have developed **mypainmatters.ie** - this website along with social media channels will allow patients early access to reliable information about their pain and information about treatment pathways they can discuss with their primary care clinician.

Other treatments

The diverse set of skills and knowledge in the team means we can offer a wide range of treatments in our team, in the community setting.

We run a number of group workshops and programmes. Over 60% of our patients have attended at least one of the programmes.

Introductory workshop: 2-hour workshop that all patients attend before 1st assessment.
Ask the Expert: RANP led 2- hour workshop that facilitates open discussion with a Pain Consultant present to answer patient questions about their condition in an open and safe space.
Moving Forward: A physiotherapy led 6-week programme to help patients build confidence in moving and exercising and help them get back into the activities that they miss.
Road ahead: A psychology led 6-week programme to support patients with psychological barriers that are preventing their rehabilitation.
MBSR: A mindfulness-based stress reduction programme is in development and will be an 8-week programme for patients living with high levels of stress.

Individual treatment options include:
Psychology therapy
Physiotherapy
Injection therapy

Following MDM discussion with the Pain team, Spinal Surgery and Rheumatology teams, patients may be referred on. We have only done this on 12 occasions with over 350 new patients (3% of cases). This is a huge reduction in waiting list burden for these other teams.

Baseline Data

Prior to the development of the iPainCentre, we competed 2 large audits of our service to gather baseline data on our patients.

One audit looked at 50 patients assessed and treated by our Physiotherapist on the team between 2020-2022. All patients were diagnosed with low back pain and resembled a large cohort of the iPainCentre patients. This data has served as a valuable reference for our new data.

The second audit was a review of 180 patients who attended the pain service between 2021-2023 as new patients. We reviewed their medication usage and the pain treatments they received.

Combining the data, we learned that the above patients:

- Mean duration of pain before review was 8.5 years
- Visit GP on average 5 times every 3 months
- 65% of our patients classed themselves as unemployed
- 38-60% were using regular opioids
- 27-30% were using gabapentinoids
- 4% were using benzodiazepines
- 76-85% completed MRI scanning pre-assessment
- 32% of the low back pain patients had spinal surgery in the past
- 47-69% received injection treatment
- 69% received physiotherapy
- 15% had further MRI scans
- 2% psychology review

Our Patients

Since our team started collecting data in September 2023, the iPainCentre has assessed and treated over 350 patients. Before their first assessment, patients are invited to complete a comprehesive questionnaire on the Qualtrics platform. We ask them details about their pain, previous investigations and treatment, and the complete measures to estimate their pain levels, quality of life, depression and anxiety levels, catastrophisation, self-efficacy and pain acceptance.

Every 3-months patients are asked to complete a follow-up questionnaire. The response rate for follow-up questionnaires was low with only 35% of patient completing follow-up data at one or more time points.

Demographic information

The mean age is 51 years old.
Over 70% of patients are female.
The pain has been present for approximately 6.3 years.
89% MRI scan

The following table explains the outcomes measures of interest in the questionnaires.

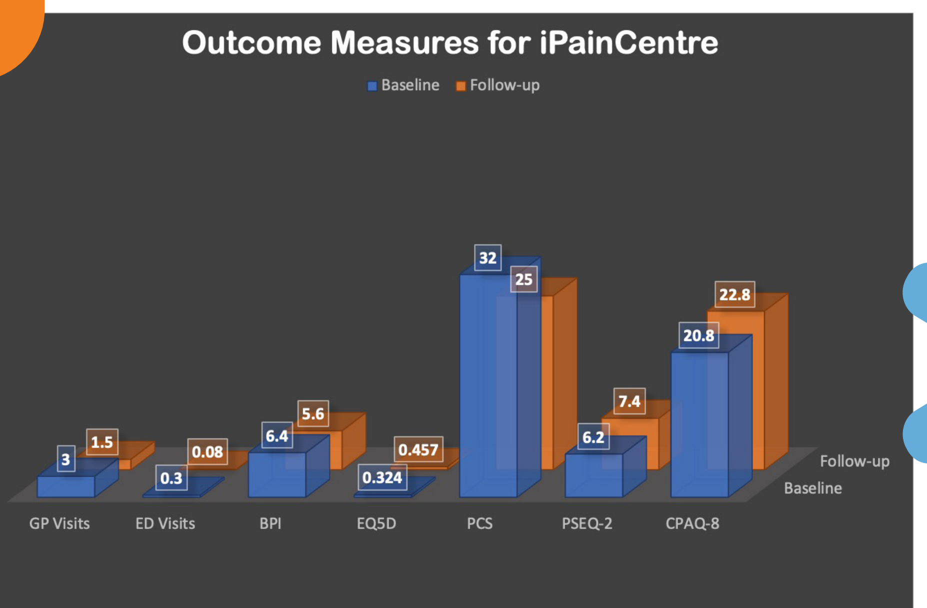
Score	Full Name	Description
BPI	Brief Pain Inventory (Severity)	Severity of pain graded out of 10 – reduction of 2 or more points is clinically significant.
EQ5D	-	Quality of life score – maximum for perfect QoL is 1.0 – a score increase of 0.1 is clinically significant.
PCS	Pain Catastrophisation Scale	Graded out of a maximum of 52, measures level of amplification, rumination and hopelessness present – a score above 30 is clinically significant for higher distress.
PSEQ-2	Pain self-efficacy questionnaire	Self confidence in ones own ability to manage their life.
CPAQ-8	Chronic Pain Acceptance Questionnaire	Level of acceptance of the situation and ability to move forward.

Our Patients

The bar graph below compares the outcomes measured at baseline and at follow-up over the course of 12 months. The measures show a high level of complexity in our patients with over 60% demonstrating high levels of psychological distress associated with their pain. The "traditional" pain clinic is not equipped to manage these type of patients.

The graph shows a universally positive outcome for the patients who completed the follow-up questionnaires. While their pain is still present in most cases, there is over 50% reduction in GP and ED visits, their is reduction in pain scores and increase in quality of life scores. There is reduction in catastrophisation and improvements in self-efficacy and pain acceptance.

It is important to note that 65% have not completed follow-up data yet. In our experience, patients with chronic pain who are making progress normally disengage from the service and re-engage when the pain is problematic again. As such, we would postulate that the 35% respondents are the patients who have not done as well and our outcomes may be even better than the positive results below.



Cost-analysis

When comparing improvements between the baseline data from 2020-2022 and the iPainCentre data, it is possible to apply monetray values to some of the outcomes. We believe that the efficiencies the iPainCentre will generate with optimal flow of patients, reduced duplication, improve clinician and patients eduction would be substantially more than the cost of the project. However, some of the data like more efficient waiting lists is hard to quantify. Below are numbers we can quantify - the monetary value assigned is based on published data by Gannon et al 2013 and applied to 350 patients in a one-year period.

- Reduced unemployment from 65% to 58% = €288,231 per year in state benefit payments and recovery of lost productivity.
- Reduced GP visits from 5 down to 3 in a 3-month period -= €164,056
- Reduced surgical intervention 32% to 3% = €272,484
- Reduced MRI scanning from 85% to 16% = €108,054
- Reduced interventional treatment from 47% to 18% = €95,874

Conservative estimate of €930,000 in savings in 1st year of iPainCentre

Future Developments

Increasing Capacity

Our recent experience shows a maximum capacity in our centre of 800-900 new patients reviews per year. To increase this capacity within our service we will have to grow the team and continue to utilise the community teams and supports available.

Our hospital team receives 3,500 new referrals per year (2,200 iPainCentre suitable), our Neurosurgical colleagues receive 8,000 referrals per year (2,700 iPainCentre suitable) and our rheumatology colleagues are referred 2,200 new patients per year (400 iPainCentre suitable). We could potentially divert 5,000 new patients to the iPainCentre every year, offer earlier access to evidence-based care with a full MDT, and reduce the pressure on the other services. We are conscious that to deliver on the volumes required we will have to grow our team and we will also have to be creative in how we work with community and hospital teams, and how we interact with patients (e.g. more group work over 1:1 work).

IT Development and Patient Data

The data we have gathered so far on 350 chronic pain patients is the first data set of it's kind in this country. It is very valuable for future projects and service planning. We need to develop our ability to gather patient data and to improve our follow-up rates. We need to explore other IT solutions including the PathPoint software. Qualtrics software cannot offer the level of flexibility and automation we require at this point.

Future Developments

Online educational material

The team have developed the **mypainmatters.ie** website to delivered evidence-based pain education content for patients and clinicians in the community to use. In 2025, further social media content will be developed to support patients and their carers in understanding and managing their pain syndromes.

Social Support

We have encountered a number of challenging cases where we have required the input of a social worker. In our future business plan we will include a social worker post. Our catchment area has high levels of deprivation and some of the challenges we face with our patients is difficult to manage without a social worker.

Develop a patient engagement group

Feedback from patients throughout the design of our workshops and website has been extremely beneficial. We will increase the input from patients to help with co-designing further services. We will include expert patients in the future on some of our workshops and programmes. This is a very popular element in the Living Well programmes and in the Arthritis Ireland and Chronic Pain Ireland programmes. We will also advance the development of the **mypainmatters.ie** website with patient input and guidance.

Future Developments

Public Health/Community Integration
We are engaging with our local Health Promotion Officer to develop a workshop on chronic pain in a community setting. We are conscious that we need to work harder to get the right messages out into the community. We want to generate a ripple effect of positive, empowering information for people living with chronic pain.

Further integration with community services
We are focused on using local community resources, knowledge and strengths to improve the health of the community. We will further develop links and create programmes with community groups that we have worked with:

- Coolock Running Club
- Dublin City Sports Partnership
- Local Development Officer
- Social Inclusion Officer
- Dublin City Council Recreation Centre

GET IN **TOUCH**

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