TOWARDS A MULTIDISCIPLINARY TEAM APPROACH IN CHRONIC PAIN MANAGEMENT

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The burden of chronic noncancer pain

Bart Morlion, Joe Pergolizzi & Frank Huygen

Although as yet there is no common definition of what constitutes chronic (persistent) noncancer pain, the term is often used to describe continuous, long-term pain of more than 12 weeks duration or pain that persists beyond the expected period of healing after trauma or surgery [British Pain Society 2011]. However, due to its multidimensionality, basing the definition of chronic noncancer pain on duration alone has limited empirical support and chronic pain should be considered as a continuum rather than as a strict class or definition [von Korff & Dunn 2008]. Chronic noncancer pain is often the result of injury, disease or specific tissue damage. However, it can also occur in the absence of a specific underlying diagnosis; at the same time – making it even more difficult – patients with a specific diagnosis or the same etiology may or may not experience pain. For example, hip or knee arthritis can result in pain, but there are also patients with this condition that do not experience pain. The picture is often further complicated by the coexistence of several types of chronic pain in an individual patient, the multidimensionality of chronic pain and the fact that the pain is often therapy resistant. For example, back pain is one of the most common presentations of chronic noncancer pain and typically an amalgam of nociceptive and neuropathic components underlies its aetiology (Box 1) [Reid et al. 2002].

Other types of chronic noncancer pain, such as joint and neck pain, arthritis, headache and migraine, also occur, and, although the majority of pain patients are treated by general primary care physicians, there is a lack of knowledge about pain pathophysiology as well as a lack of implementation of existing knowledge, making it relatively difficult for primary care physicians to diagnose and manage the condition (Figure 1) [Langley 2011]. There is also a lack of a generally accepted system for definition and classification of chronic pain, and it is often not seen as a disease in its own right and it is not recognised as a major healthcare problem.

Box 1. Causes of chronic noncancer pain.

- Nociceptive pain: such as pain due to inflammation, osteoarthritis, visceral pain, ischemic pain, back pain (without nerve injury)
- Neuropathic pain: such as radiculopathy, postherpetic neuralgia, painful diabetic neuropathy, trigeminal neuralgia, HIV, CRPS II, phantom limb pain, poststroke pain, multiple sclerosis, spinal cord injury
- Mixed pain (nociceptive and neuropathic): such as chronic back pain (nerve lesion/dysfunction and nociceptive activation from ligaments, joints, muscles, tendons)
- Idiopathic pain: a term given to pain that has no apparent underlying cause
- Fibromyalgia: chronic pain characterized by widespread musculoskeletal aches, pain and stiffness, soft tissue tenderness, general fatigue and sleep disturbances
The burden of chronic pain

Recent data from the USA suggest that pain affects more patients than diabetes, cancer and heart disease combined (Figure 2) [American Pain Foundation 2011], while figures from Europe suggest that approximately one in four patients experience pain that affects the muscles, joints, neck or back and that lasts for more than 3 months [EC 2007].

Notably, wide variations currently exist in the management of chronic noncancer pain worldwide and inadequate pain management is a significant problem. In a recent European survey, more than a third of patients claimed that their pain was poorly managed and two thirds of those prescribed prescription medication believed that their pain was...
not always adequately controlled [Breivik et al. 2006]. Furthermore, more than two thirds of physicians at an expert summit on pain with participants from across Europe cited undertreatment of chronic pain to be a common problem in their countries (Figure 3).

Severe chronic noncancer pain is a considerable health issue, profoundly affecting not only the quality of patients’ social and working lives but also impacting on healthcare providers and society as a whole. Marked changes in sleep patterns, coping mechanisms and ability to exercise, undertake normal daily tasks, and attend work and social activities are associated with chronic pain, leading to a reduction in the physical, psychological and social wellbeing of the patient. The impact of chronic pain on the individual patient is also exacerbated further by an increase in prevalence of comorbidities such as anxiety, depression and decreased physical and mental functioning [Breivik et al. 2006; Gatchel et al. 2007; Langley 2011]. As a consequence, patients with chronic pain place a considerable burden on healthcare systems through an increase in utilization of health services (e.g., increased visits to primary care physicians and emergency rooms and hospitalization). In addition, the negative impact of chronic pain on work productivity and activity also places a significant financial burden on society [Langley 2011].

Numerous studies conducted in countries worldwide have shown chronic pain to be a prevalent and costly problem. For example, back pain has been reported to cost the UK £12.3 billion annually; with the vast majority of costs attributable to work days lost (Figure 4) [Maniadakis & Gray 2000]. In a very recent report from the NIH, the annual
economic cost of chronic pain in US adults, including healthcare expenses and lost productivity, has been estimated to be approximately US$560–630 billion annually [Institute of Medicine Committee on Advancing Pain Research 2011]. In comparison, in 1998, a NIH report concluded that the annual cost of chronic pain in the USA, including healthcare expenses, lost income and lost productivity, was in the region of US$100 billion; this figure will have increased significantly since then [NIH 1998].

### A multidisciplinary approach to management

Patients with chronic noncancer pain often require long-term care with frequent reassessment and adjustment of therapy. The biopsychosocial model of chronic pain recognises the condition as a combination of physical dysfunction, beliefs and coping strategies, distress, illness behaviour and social interactions (Figure 5) [Gatchel et al. 2007].

The multitude of factors that contribute to chronic pain often means that the condition fails to respond well to a single treatment approach. Since the introduction of the biopsychosocial model, treatment for chronic pain has become multimodal and multidisciplinary, with emphasis on a range of strategies aimed at maximising pain reduction, improving health-related quality of life, independence and mobility,
enhancing psychological wellbeing and preventing secondary dysfunction. In order to achieve these goals, successful long-term management requires the use of a range of specialist treatments (Box 2), which are administered by a multidisciplinary team to ensure delivery of treatment that is tailored to the individual patient needs [Fields 2011].

Complex, multidisciplinary evaluation and treatment is not necessary for all patients with chronic pain and it is not possible for every chronic pain patient to be managed in a multidisciplinary way as the numbers are too high and healthcare resources may not always be available; therefore, it is imperative to identify which patients will benefit from this multidisciplinary approach to care. Patients who have not responded to initial therapy, and with an uncertain diagnosis despite detailed medical evaluation, should be referred to and managed by a multidisciplinary team [Chen 1996]. Particularly, patients presenting with an important level of psychological, physical and/or socioprofessional dysfunction may profit from a referral to a multidisciplinary team as early as possible. Patient referral for chronic pain management usually falls under the remit of the patient’s family physician; however, in some cases, the patient may play an active role in their own referral (see Chapter 2).
Towards a multidisciplinary approach in…

**Central processes**
- Biological
- Cognitive
- Somatic
- Affective

**Peripheral processes**
- Autonomic
- Endocrine
- Immune systems

**Genetic predispositions**

**Biological**
- Genetic predispositions

**Psychological**
- Activities of daily living
- Environmental stressors
- Interpersonal relationships
- Family environment
- Social support/isolation
- Social expectations
- Cultural factors
- Medicolegal/insurance issues
- Previous treatment experiences
- Work history

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**Box 2. Multimodal treatment approaches for chronic noncancer pain.**

- Pharmacotherapy: paracetamol, NSAIDs, opioids, antidepressants, anticonvulsants, topical treatments and others
- Psychological approaches: psychological counselling, cognitive behavioural treatments, self-help strategies and behavioural medicine
- Physical approaches: exercise, physiotherapy/physical therapy, spa therapy, electrotherapy using transcutaneous electrical nerve stimulation and rehabilitation
- Practical approaches: patient education, vocational counselling and patient support groups
- Intervential procedures: nerve blocks, advanced technologies (e.g., implantable intrathecal pumps, drug administration systems and spinal cord stimulation systems/neurostimulation) and surgical procedures

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Figure 5. A conceptual model of the biopsychosocial interactions in chronic noncancer pain. Adapted with permission from [Gatchel 2004].
Importantly, a multidisciplinary approach to pain management provides benefits to patients, healthcare providers and society as a whole. The integration of multiple treatment modalities, including behavioural modification therapy, has resulted in considerable improvements for patients suffering from chronic pain in terms of a reduction in the use of medications, improved functional ability, increased likelihood of returning to work, improved quality of patient care and patient satisfaction, as well as reducing healthcare costs [Cassisi et al. 1989; Deardorff et al. 1991; Kames et al. 1990; Flor et al. 1992; Chen 1996; Luk et al. 2010].

The pain treatment continuum
In the context of chronic pain, failure to gain pain relief through self-medication usually initiates presentation of the patient to their doctor. Thereafter, depending on the severity and duration of pain, one or more treatment options may be initiated, with therapy becoming progressively more aggressive as required. Following an initial diagnosis, the physician may offer prescriptive medications that may more effectively control the patient’s pain. Referral to a physiotherapy, an occupational counsellor or a rehabilitation specialist may be useful if underlying physical causes of pain are suspected; referral to a psychologist or other behavioural specialist service may also be valuable if the patient can be aided by a psychological approach to their pain management.

Key learning points
- There is no common definition of what constitutes chronic (persistent) noncancer pain, although it has been described as a pain that persists past the normal time of healing
- Chronic pain is a debilitating and highly prevalent condition and is often complicated by the coexistence of other comorbidities
- European data suggest that approximately one in four patients experience pain
- Severe chronic noncancer pain is associated with severe physical and psychosocial impairment, profoundly affecting not only the quality of patients’ social and working lives but also impacting on healthcare providers and society as a whole
- Considering the biopsychosocial model, treatment of chronic pain should become multimodal and multidisciplinary, with the aim of maximising pain reduction and quality of life, independence and mobility

References
Towards a multidisciplinary approach in...


**Websites**


Role of the patient in referral pathways

Concepción Pérez Hernández & Cesar Margarit Ferri

Patients who are in chronic pain may take an active part in their own referral and treatment. In fact, the unprecedented expansion in access to medical information over the internet during the last 10 years has allowed many patients to take a main steering role in the referral process, as they are able to check their diagnosis and treatment and participate in more productive discussions with their doctor.

Patient request for referral to a pain specialist

Many patients with chronic pain may fail to be reassured by their primary care physician that they do not require referral to a pain specialist. Instead they may, for a variety of reasons, request a referral (Box 3).

Among patients with headache, patient anxiety and pressure have been cited as important in shaping referral decisions from primary to secondary care. In a UK survey of 20 primary care physicians, all the participants acknowledged that they had made referrals for a headache because of patient requests. This was particularly common if a patient was a frequent consulter, the doctor–patient relationship was tense or the consultation was particularly long [Morgan et al. 2007].

Box 3. Reasons why a patient with chronic pain may request a referral to a specialist.
- Need for a second opinion
- High level of anxiety about the diagnosis
- Complex patients that require a multidisciplinary approach
- Lack of efficacy with current treatments
- Unmet goal by primary care (e.g., psychological support or coping)

Other roles for the patient

Due to a lack of therapeutic options, lack of patient confidence and the need for a multidisciplinary approach to treatment, chronic pain patients should frequently take part in the referral process to different specialists. As well as requesting a specialist referral, patients may also be required to facilitate the communication process between primary care physicians and pain centres/clinics. Poor communication between healthcare services frequently exists (see Chapter 11) and it may take weeks for the results of a specialist appointment to be communicated to the primary care physician [Piterman & Koritsas 2005; McHugh et al. 2011; Raza et al. 2011]. The patient...
also plays an important role in helping the primary care physician make an appropriate referral. This can only be achieved if the patient undertakes to discuss all of their symptoms openly, to attend for diagnostic testing and to fill in questionnaires to the best of their ability.

Patients with chronic pain have also prepared self-help materials. For example, the Pain Tool Kit contains useful advice and coping strategies in a clear and uncomplicated format to help patients get started in the management of their chronic pain. News and useful links to patient organisations are also included on the site. The Tool Kit is available online at www.paintoolkit.org and also on www.change-pain.com. The Pain Tool Kit provides useful background information to support the patient in this role.

### Patient associations/support groups

Numerous associations exist worldwide to provide patients with advice on the causes of chronic pain, prevention and treatment (Table 1). These so-called ‘patient associations’ or ‘patient support groups’ exist in many guises and are encouraged centrally. They may run in conjunction with a pain clinic or centre, or may be linked to interested organisations (e.g., charities). Their role is to highlight the concerns and needs of patients with chronic pain and to ensure that patients are well informed and better equipped to make a decision about their management when a choice is offered. In addition, some groups offer self-management courses that focus on approaches for coping with pain and fatigue and methods for coping with the emotional aspects associated with living with chronic pain. By promoting patient empowerment, patient associations can encourage patients to make treatment decisions with the physician managing their chronic pain. Examples of patient associations for chronic pain include the German Pain League Association, The Pain Association Scotland, BackCare and The Pain Foundation Platform Netherlands (Table 1).

In an effort to bring together patient organisations from across Europe and to provide a strong voice for the chronic pain community, the European Pain Network was formed in December 2004 [EPN 2011]. This comprises a group of patients’ organisations from more than ten countries across Europe. Among its objectives, the European Pain Network aims to campaign for people living with chronic pain in Europe and to promote access to and availability of appropriate treatment options and facilities for the management of acute and chronic pain.
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<th>Association</th>
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<tr>
<td>BackCare</td>
<td>A UK national charity that aims to reduce the impact of back pain on society by providing information, support, promoting good practice and funding research. BackCare acts as a hub between patients, healthcare professionals, employers, policy makers, researchers and others with an interest in back pain.</td>
<td><a href="http://www.backcare.org.uk/455/About-Us.html">www.backcare.org.uk/455/About-Us.html</a></td>
</tr>
<tr>
<td>Pain Association Scotland</td>
<td>A national charity that offers support for people with chronic pain in the community. Their mission is to help all chronic pain sufferers, enabling them to achieve improvement in their quality of life. This is done through the development of local self-management groups offering pain management training and exercise.</td>
<td><a href="http://www.painassociation.com/">www.painassociation.com/</a></td>
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<tr>
<td>American Pain Foundation</td>
<td>An online resource for people with pain, their families, friends, caregivers and the general public. This site is devoted to patient information and advocacy, and provides many links to additional resources.</td>
<td><a href="http://www.painfoundation.org/">www.painfoundation.org/</a></td>
</tr>
<tr>
<td>National Pain Foundation</td>
<td>A US-based foundation providing patients with information on treatment options along with a personal pain inventory, personal pain journal, links, education and support.</td>
<td><a href="http://www.nationalpainfoundation.org/tools.php">www.nationalpainfoundation.org/tools.php</a></td>
</tr>
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<td>German Pain League Association (Deutsche Schmerzliga)</td>
<td>An organisation for patients with chronic pain. Committed to improving the quality of life of people with chronic pain by providing up-to-date information on pain management, helpful tips and useful publications.</td>
<td><a href="http://www.schmerzliga.de/dsl/">www.schmerzliga.de/dsl/</a></td>
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<td>Pain Foundation Platform Netherlands (platform pijn en pijn bestrijding)</td>
<td>Provides a platform for pain organisations and associations and a source of information about pain that is freely available to patients and healthcare professionals.</td>
<td><a href="http://www.pijnplatform.nl/">www.pijnplatform.nl/</a></td>
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### Table 1. Examples of associations providing advice to patients with chronic pain.

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<td>Finnish Association of Pain (Suomen Kipu ry)</td>
<td>The association supports pain research and rehabilitation activities, provides information about pain issues and is involved in the development of pain treatment peer support activities.</td>
<td><a href="http://www.suomenkipu.com/">www.suomenkipu.com/</a></td>
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<td>NHS Choice</td>
<td>Provides useful information from the NHS on the symptoms, causes, diagnosis, treatment and prevention of a wide range of medical conditions including back pain, neuropathic pain, rheumatoid arthritis and osteoarthritis.</td>
<td><a href="http://www.nhs.uk/Conditions/Pages/hub.aspx">www.nhs.uk/Conditions/Pages/hub.aspx</a></td>
</tr>
<tr>
<td>Arthritis Care</td>
<td>A UK-based charity with a mission to support all patients with arthritis. Provides background information on arthritis, advice on how to cope with the disease, information on local self-management programmes and social networking groups, useful factsheets and a quarterly magazine publication ‘Arthritis News’.</td>
<td><a href="http://www.arthritiscare.org.uk/Home">www.arthritiscare.org.uk/Home</a></td>
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Key learning points

- Patients with chronic pain should be involved in the referral decision, and are key in referring to specialists
- There should be clear referral pathways based on the patients’ illness
- Scientific tools are useful for patients with chronic pain
- Clear examples of the need and utility of these tools are the Pain Tool Kit and European Pain Network

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5. European Pain Network. A call to action
6. The Pain Tool Kit
   www.paintoolkit.org
7. International CHANGE PAIN® website
   www.change-pain.com
The core multidisciplinary team

Bart Morlion, Magdalena Kocot-Kępska & Eli Alon

True multidisciplinary management of chronic noncancer pain requires a core team of healthcare professionals. Each member should have appropriate knowledge of both the basic sciences and clinical practices relevant to patients with chronic pain and should be aware of the expertise of the other team members, without needing to master all the therapeutic techniques themselves. Together, the core members should be capable of assessing and managing the medical, physical, psychosocial, vocational and social aspects of chronic pain. The primary care physician usually plays a central key role in this team as a gatekeeper and coordinator of the treatment strategy. He or she is responsible for the long-term management and care of the patient with chronic pain according to the treatment plan, and refers the patient for further treatment and assessment as necessary. Therefore, communication among the members of the team and between the multidisciplinary team and the primary care physician is of paramount importance (see Chapter 11).

Multidisciplinary pain teams exist in many regions; however, they frequently vary in structure and emphasis to suit the needs of the patients they treat, the type of medical centre in which the team is based (e.g., university hospital, district hospital or out-patient department), the number of patients and the available healthcare providers. The core members of the team also vary accordingly but typically include members from three or more medical specialities (e.g., anaesthesiology, neurology, rheumatology, orthopaedics, neurosurgery, clinical psychology/psychiatry, nursing, rehabilitation and physiotherapy/physical therapy) [Chen 1996] (Figure 6). In many countries, in practice, the core team consists of three physicians (primary care physicians, anaesthesiologists and psychiatrists) and nonphysicians (psychologists, physiotherapists and nurses) [Peng et al. 2008].

According to the International Association for the Study of Pain (IASP) guidelines, if one of the physicians is not a psychiatrist, physicians from two medical specialities and a clinical psychologist are the minimum required. A director or coordinator of the team, ideally a physician, should also be appointed. If the appointed individual is not a physician, then there should be a nominated director of medical services who is responsible for monitoring the medical services provided to the patient [IASP 2011].

The inclusion of a wide range of specialities within the team allows patients to benefit from the integration of various treatment modalities. Within the multidisciplinary team, a coordinated approach is crucial to facilitate ongoing and effective regular communication between all team members and consistency of message. Ultimately, all team members should work together to meet the needs of the individual patient while
providing assistance to the primary care provider responsible for the ongoing management of the patient’s overall care. In practice, regular interdisciplinary meetings with all team members present to discuss patient cases can confer a host of benefits to the patient (see Chapter 12).

Below is a summary of the typical role(s) associated with each core discipline within the core multidisciplinary team. It should be noted that some treatments may be undertaken by one of several disciplines, if training is provided.

**Pain specialist:** an expert in assessing and treating pain and specialises in pain management. Different specialists, such as anaesthesiologists, may also have an additional specialisation in pain management (depending on local circumstances).

**Primary care physician:** usually plays a central key role as a gatekeeper and coordinator of the treatment strategy provided by the multidisciplinary team. The long-term management and care of the patient with chronic pain, in accordance with the treatment plan, is the responsibility of the primary care physician, who also refers the patient for further treatment and assessment as necessary.

![Figure 6. The core multidisciplinary team for the management of chronic noncancer pain.](image-url)
Anaesthesiologist/anaesthetist: uses his/her expertise to recommend and implement advanced pain management procedures ranging from peripheral or central nerve blocks to radiofrequency procedures, device implantation and other neurodestruction techniques. Anaesthesiologists have much experience using potent analgesic drugs as well as surgical or neural blockade and, in some countries, for example the UK, anaesthesia is the only specialty that incorporates advanced pain management within its training programme. As it is recommended that specialist chronic pain services should include consultants trained in and with the appropriate competencies in pain medicine, the majority of services are led by doctors whose primary qualification is in anaesthesia. Anaesthetists, therefore, play a central role in the assessment of pain and the formulation of management plans for patients [Royal College of Anaesthetists Guidelines 2009].

Orthopaedist: may be able to offer a patient corrective surgery to alleviate their chronic pain, although surgeons, other than those specialising in orthopaedics, may also be able to undertake this role. Examples include arthroscopic debridement for patients with post-traumatic arthritis after an injury, dislocation or ligament rupture who do not achieve an adequate response to pharmacological therapy, and surgical replacement of an affected joint for patients with rheumatoid arthritis or severe osteoarthritis with severe pain and disability who do not achieve an adequate response to pharmacological therapy and rehabilitation. An orthopaedist may also be responsible for performing a functional examination of the patient.

Rheumatologists: are experienced in managing patients with chronic pain associated with inflammatory disease of the musculoskeletal system and connective tissue, degenerative disease of the joints and spine, and soft tissue disorders. They are also able to investigate the patient for rheumatological processes [UEMS 1998; Cooper et al. 2003].

Neurologist: undertakes a comprehensive neurological examination of the patient and recommends appropriate therapeutic pain management options. With pain management now recognised as a subspeciality of neurology, increasingly, neurologists have become involved in the multidisciplinary treatment of patients with chronic non-cancer pain [Jacobson & Mann 2003; Lalani 2006].

Neurosurgeon: may perform spine surgery for discogenic pain treatment. In some countries, a neurosurgeon may implant CNS neuromodulation devices or perform neurodestruction procedures [Sponseller 2010].

Clinical nurse specialist: performs ongoing assessments of the patient’s pain and helps to establish treatment plans and assists in interventional procedures. He/she also answers patient’s questions and provides ongoing patient education by phone or e-mail and may assist in the titration of medication.

Clinical psychologist: responsible for the day-to-day psychosocial care of the patient. A patient may exhibit significant psychosocial barriers to recovery. These may be identified along with psychosocial strengths and weaknesses using comprehensive psychological evaluations. Many patients with chronic pain exhibit changes in
mood, poor coping mechanisms and learned behaviours (e.g., avoidance, resignation and passivity) related to pain. Through psychological assessment and counselling, the clinical psychologist can help the patient to realise that they are not alone in their struggle, provide them with emotional support and remove these learned behaviours. Implementation of cognitive behavioural therapy and other psychological therapies, such as autosuggestion, biofeedback techniques and hypnosis, can also be used to help patients manage their negative feelings due to pain in some diseases, to reduce the pain level and improve physical and emotional functioning.

**Psychiatrists:** play an important role in the management of patients with chronic pain who may also have a variety of recognised psychiatric disorders, including depression, analgesic overuse and addiction, and post-traumatic stress disorder. By undertaking a detailed psychiatric evaluation, the psychiatrist with his/her specialist skills can offer a high level of support to this patient group [Wallace & Panch 2001], including the formulation of suitable therapeutic interventions and appropriate prescribing regimens. Psychiatrists may also have a role in supporting other member of the team should this be needed.

**Physiotherapist (physical therapist):** helps to design a treatment recovery plan incorporating a programme of activities to treat the musculoskeletal conditions that are the cause of or the result of pain. Recommended activities may include various types of exercise, massage and transcutaneous electrical nerve stimulation therapy to encourage the patient to move more (to maintain or improve physical functioning) and to work with their body. The physiotherapist may also teach the patient how to reduce the severity of pain through the use of appropriate body mechanics and exercise pacing. The ultimate goal is to maintain or improve the mobility of joints and strengthen weakened muscles. In the setting of chronic back pain, physiotherapists can provide advice on exercise, posture and back care and have been cited as a major route of referral by primary care physicians for the treatment of chronic back pain according to a survey conducted in the Republic of Ireland [Cremin & Finn 2002].

**Rehabilitation doctor:** uses a behavioural therapy approach to help restore physical activities and improve the quality of life for people who have chronic pain conditions by encouraging them to learn how to manage their pain and any disability on a day-to-day basis. A major emphasis of rehabilitation is often the discontinuation of pain medications. A rehabilitation doctor often gives advice regarding rehabilitation techniques that may be implemented to reduce pain and improve mobility of affected parts of the body. These techniques include laserotherapy, magnetic field therapy, general or local heat or cold application, iontophoresis and others.

In addition to the core members described above, a gynaecologist, urologist or paediatrician may be included in the core team for the management of patients with pelvic and paediatric pain, respectively, and other appropriate specialists may be included when patients with other types of chronic pain present.
Towards a multidisciplinary approach in…

Key learning points

- Multidisciplinary management of chronic noncancer pain requires a core multidisciplinary team of healthcare professionals
- The primary care physician acts as gatekeeper and coordinator and has a central role in the long-term management strategy and refers the patient for further treatment as necessary
- Communication among the team and between the team and the primary care physician is extremely important
- The multidisciplinary team usually includes a primary care physician, anaesthesiologist, a rheumatologist, a neurologist, a psychiatrist or psychologist. Nevertheless, other specialists may also be included or available based on the individual patient’s needs

References


Websites

The wider team for the management of chronic pain

Magdalena Kocot-Kępska

Similar to the core multidisciplinary team, the wider team for the management of chronic pain could include representatives from a number of key medical and non-medical specialities, many of whom work in the community since chronic pain affects not only somatic aspects, but also social functioning, causing a marked loss of workdays, or even inability to work. The wider team will also vary according to the type of medical centre and the country in which the team is based. Members of the wider team should be specialists in supporting the patient with chronic pain in various aspects of daily living, ensuring the ongoing management of their treatment and rehabilitation. Some wider team members may also belong to the core team, but have no involvement in the day-to-day functioning of the multidisciplinary programme, while others may not be team members. Instead, their services may be requested on an ad hoc consultative basis. Members of the wider multidisciplinary team are listed in Box 4.

A summary of the typical role(s) associated with members of the wider multidisciplinary team is provided below.

Pharmacist: may consult with the patient and their primary care physician to either implement or recommend a medication management plan for patients with complex medication needs to avoid any drug–drug interactions, drug misuse or an overdose risk. This may reduce the risk of side effects and improve patients’ satisfaction with pharmacotherapy.

Occupational therapist: is involved in both the physical and vocational aspects of the patient’s rehabilitation. Many patients with chronic pain are unable to work and therefore the occupational therapist may help with vocational retraining and aid a smooth transition back to work.

Box 4. The wider multidisciplinary team.

- Specialist pharmacist
- Complementary therapist
- Dietician
- Educational therapist
- Occupational therapist
- Medical social worker
Medical social worker: provides community support and helps with the management of stress between patients with chronic pain and their immediate family and friends.

Complementary therapists: can provide a range of therapies including acupuncture, chiropracty, hypnotherapy, massage, reflexology, aromatherapy and herbal medicine [van Tulder et al. 2005; Chou et al. 2007]; however, the evidence base to support these interventions is limited. Despite a lack of evidence-based medicine, these methods are widely used in chronic pain treatment, are acceptable and are well tolerated by patients. Acupuncture is one of the most widely used methods in chronic pain treatment, and may be applied by a trained medical specialist – a member of a core team [Lee & Ernst 2011].

Dieticians: can offer advice on nutrition and provide dietetic support as chronic pain can cause appetite disturbances and limit the mobility of patients, resulting in obesity, which, in many cases, is a cause of chronic pain, especially back pain.

Educational therapist: educates the patient in skill enhancement to enable them to overcome disability associated with chronic pain. It has been confirmed that in patients with chronic pain, education on pain etiology, pain origin, treatment options and the negative impact on quality of life may improve treatment effectiveness and outcome, especially in patients with musculoskeletal disorders [Engers et al. 2008].

Key learning points
- Chronic pain affects all aspects of patients’ daily living
- Medical and non-medical specialist should be involved in pain management
- The primary care physician should recognise the patients’ needs and refer patients to other specialist if necessary
- Patients with chronic pain may benefit from the engagement of a wide array of non-medical specialists

References
Benefits of the multidisciplinary team for the patient

Philippe Mavrocoridatos, Frank Huygen & Patrick Sichere

Comprehensive multidisciplinary management of chronic noncancer pain (multimodal and multidisciplinary management with an emphasis on a range of strategies and specialist treatments administered by a multidisciplinary team) is a clinically effective and cost-efficient approach when compared with non-multidisciplinary treatment or usual care [Turk 2002; Scascighini et al. 2008; Cunningham et al. 2009; Dysvik et al. 2010]. Benefits specific to the patient are wide-ranging and can result in substantial respite from the ongoing effects of chronic pain (Box 5).

Patients referred for multidisciplinary care are more likely to benefit from early diagnosis and treatment, and early and accurate diagnosis – to enable the early initiation of treatment – is essential for a number of underlying conditions associated with chronic pain (e.g., rheumatoid arthritis). Moreover, inclusion within the

Box 5. Advantages of a multidisciplinary team.

- Allows a multidimensional diagnosis of chronic pain
- Avoids duplication of investigations
- Facilitates early and accurate diagnosis (if waiting times are short)
- Aids rapid initiation of treatment following diagnosis
- Ensures the availability of a wide array of treatment options (pharmacological and nonpharmacological)
- Treatment plans are individualised
- Care is delivered in a programmed and coordinated manner
- Provides continuity of interaction and care
- Treatment offered is up-to-date, evidence based and safe
- Treatment failure can be recognised early on
- Potential for improvement in patient’s quality of life, patient optimism and mood state
- Faster return to work
- Patients can have greater confidence in their treatment plan knowing that it has been developed by collaboration between different specialities
- Patients have the opportunity to discuss treatment options and ask questions of the different specialists involved in their care
- Opportunity for access to clinical trials and research programmes within the pain clinic
- Improved interdisciplinary knowledge
team of healthcare professionals from different medical specialities provides the patient with the opportunity to undergo a number of different treatment modalities (both pharmacological and nonpharmacological) specifically tailored to their needs. However, some chronic pain problems are too difficult to manage beyond primary care [Fields 2011]. Clinicians at multidisciplinary pain clinics should have an adequate infrastructure and tools to deal with such complex situations.

Improvements in pain intensity have consistently been reported in patients suffering from chronic pain conditions following a programme of multidisciplinary pain management [Flor et al. 1992; Carbonell-Baeza et al. 2011]. As with all pain management strategies, the benefits to the patient of a multidisciplinary approach are not solely confined to pain relief but also extend to improvements in physical functioning, quality of life, emotional distress and behavioural outcomes [Jensen et al. 2001; Patrick et al. 2004; Hurley et al. 2007; Luk et al. 2010]. This confers psychological advantages to the patient, giving him/her a sense of control over their own life and greater self-esteem.

Multidisciplinary programmes have also been shown to reduce the negative impact of pain on work productivity. In a meta-analysis of 65 studies evaluating the efficacy of multidisciplinary treatments for chronic back pain, Flor and colleagues concluded that a multidisciplinary approach is superior to no treatment or conventional unimodal treatment in terms of not only the patients’ subjective ratings of pain but also behavioural variables, such as return to work and use of the healthcare system. Of note, the likelihood of returning to work was twofold higher among patients treated in a multidisciplinary pain clinic versus untreated patients or single discipline-treated patients (68 vs 36%) [Flor et al. 1992].

The IASP recommends that members of a multidisciplinary team communicate with each other on a regular basis, both about specific patients and overall development. In so doing, continuity of interaction and care is ensured, care can be delivered in a programmed and coordinated manner, avoiding duplication of investigations, and instances of treatment failure can be identified early on in the care pathway [Chen 1996; IASP 2011].

All healthcare members of the multidisciplinary team should have appropriate knowledge of both the basic sciences and clinical practices relevant to the management and treatment of chronic pain and be familiar with all relevant treatment guidelines. This ensures that, collectively, they are able to deal with a wide range of chronic pain types and that the treatment delivered is up-to-date, evidence based and safe. Furthermore, the appointment of a director or coordinator for the team to monitor the medical services provided ensures that high standards are maintained [IASP 2011]. It is the authors’ belief that the incorporation of ongoing research and academic teaching activities within a multidisciplinary pain programme also contributes further to improving the quality of pain management; research activities enable advances to
be made in scientific knowledge relating to pain, while educational activities provide the opportunity to disseminate relevant information to patients, healthcare providers and organisations.

Since continuing efforts to improve education are necessary, the CHANGE PAIN® initiative is committed to improve patient outcome by developing solutions for daily practice. Based on the discussions and insights from the CHANGE PAIN® advisory board, a new educational programme for primary care physicians with so far four comprehensive eCME modules has been developed, which cover topics such as pain assessment and patient/physician communication, multimodal management of chronic pain, pharmacological management of chronic pain and treatment of chronic back pain. These modules are accredited by the European Union of Medical Specialists. This Pain Education programme is a structured educational tool for physicians involved in the treatment of chronic pain [www.change-pain.com].

### Key learning points
- Collaboration between primary care physicians and specialists will always benefit the patient
- A biopsychosocial approach is essential to understanding the patient
- A multidisciplinary approach allows realistic and patient-focused evaluation and therapy
- Patient outcomes are improved with a multidisciplinary approach compared with a single-discipline approach or with untreated patients

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**Websites**


   www.iasp-pain.org/AM/Template.cfm?Section=Home&Template=/CM/HTMLDisplay.cfm&ContentID=9218

14. International CHANGE PAIN® website

   www.change-pain.com
Collaboration between the primary care physician and the pain medicine specialist

Joe Pergolizzi, Chris Monella & Frances Cole

The primary care physician is usually the first healthcare professional to see a patient with chronic noncancer pain, so he/she is ideally placed to screen patients for likely causes of their pain and to refer appropriately. As pain is a sensory, emotional, cognitive and behavioural disorder, improved care will occur with improved primary care skills and access to multidisciplinary teams [Keefe et al. 2008]. The role of the primary care physician in managing chronic pain includes the following:

› Assessment leading to diagnosis
› Pain associated with other long-term health issues (which also need management)
› Pain relief management
› Support self-management skills
› Treat depression and/or anxiety
› Medication reviews (assessing changes in pain relief, physical activity, sleep, moods, quality of life, side effects of medicines and consideration of reducing or stopping medication if there is no useful benefit or risks are increased)
› Setback or pain flare-up management
› Decisions regarding return or stay in work

Referral from primary care may be either to clinical specialists or to other healthcare professionals in the hospital or community. Referral from or treatment within primary care will be dependent on the type and nature of the chronic pain that the patient is experiencing (Box 6). For example, some chronic pain conditions, such as herpes zoster or musculoskeletal back or neck pain, can be managed within primary care using relevant networking or referral to physiotherapists or other therapists to address reduction in disability and distress; whereas some pain conditions, such as emerging complex regional pain syndrome, need early referral and more specialist intervention

Box 6. Typical urgent referrals from primary care physicians.

- Orthopaedics: spinal ‘red flag’ (emergency referral); joint instability; giving way; true locking; deformity associated with trauma
- Rheumatology: inflammatory disorder ‘red flag’; onset <40 years; marked morning stiffness; night sweats; peripheral joint involvement; iritis; skin rashes (psoriasis, colitis, urethral discharge); family history, for example connective tissue disorders
- Pain specialists: intractable pain; cancer pain
to reduce disability and distress [DTB 2011]. Referral by a primary care physician to a physiotherapist is a common route for patients with chronic back pain in Ireland [Cremin & Finn 2002]. In a postal survey of 293 Irish primary care physicians, physiotherapy was cited by 59% as their first preference for the treatment of chronic back pain and almost half cited advice on exercise, posture and back care, but not pain relief, as the main reason for this [Cremin & Finn 2002]. In a German survey, while primary care physicians do see many patients first presenting with headache and neuropathic pain, those patients with low back pain more often self-refer to a specialist orthopaedic surgeon when first seeking help for their condition. Of the German patients surveyed, 40% saw a primary care physician (headache: 39%; low back pain: 41%; neuropathic pain: 40%) on a regular basis [Schulte et al. 2009]. However, a separate study showed that when the primary care physician initiated a referral rather than the patient, the patient experience was more positive due to the improved diagnostic certainty and because the consultants/specialists were better informed, supporting the important role of the primary care physician in chronic pain management [Rosemann et al. 2006].

**Ethics**

The primary care physician is an invaluable source of information in the biopsychosocial model of pain that is at the very core of a multidisciplinary management approach (Box 7). They must consider ethical best practice when treating chronic pain patients or referring them to secondary care management (Box 8).

### Box 7. Diagnostic and prognostic contributions from primary care physicians.

- The individual: for example, culture, health beliefs, past medical history/treatments, intolerances, allergies
- Psychological: mood, anxiety, depression, expectations, passive role, fear avoidance behaviours
- Social: interaction with society, work, social support at home and at work
- Safety net: ability to integrate and facilitate discharge and follow-up in society

### Box 8. Ethical principles for the primary care physician to consider.

- Non-maleficence: actions intended not to harm or bring harm to the patient and others
- Beneficence: actions intended to benefit the patient or others
- Autonomy: respect for the individual and their ability to make decisions with regard to their own health and future
- Justice: being fair or just to the wider community in terms of the consequences of an action


Importance of early diagnosis

For some patients, the cause of chronic pain is attributable to an underlying chronic illness, and in some cases it is important that the primary care physician refers the patient as soon as possible with all appropriate information to allow early diagnosis and early effective treatment of the underlying condition (e.g., diabetic neuropathy). This avoids unnecessary diagnostic procedures and inappropriate treatment. It is also important to enable patient engagement wherever possible as worse outcomes are associated with passive patient roles (see Chapter 2). Unfortunately, the early symptoms of many painful conditions can be nonspecific and inconclusive, resulting in a delay in accurate diagnosis while the primary care physician treats the nonspecific symptoms or refers the patient inappropriately. All patients whose diagnosis is in doubt should be referred to an appropriate hospital specialist, while patients with pain that is likely to deteriorate should be considered for early referral rather than late. By adopting this approach, the patient and pain care specialist have an opportunity to develop a rapport before the patient’s clinical situation deteriorates. In some healthcare systems, early referral and diagnosis may be hampered by long waiting times of several months or more for specialist pain services. In this situation, the primary care physician should continue to see the patient waiting for referral and adjust their treatment regimen as appropriate.

Accurate, timely diagnosis can be very difficult in patients with ankylosing spondylitis (AS) and other axial spondyloarthritis (SpA), as can be seen from recent data, which suggest that there can be delays from the onset of back pain to a confirmed diagnosis for the whole group of axial SpA or of AS in particular (Figure 7) [Brandt et al. 2007].

Among patients with rheumatoid arthritis, early diagnosis and treatment is essential given that 90% of patients with the disease have a disability within 20 years of onset [Buckley 1997]. However, reluctance on the part of the patient to seek medical advice, together with a delay in referral from primary to secondary care, as a result of the often nonspecific and inconclusive symptoms of the disease, often leads to a delay in early diagnosis and treatment and ultimately a poorer long-term outcome for the patient [Emery et al. 2002]. The findings of several studies have suggested that patients with rheumatoid arthritis who are managed by rheumatologists have reduced functional disability over the duration of the disease and better health outcomes [Ward et al. 1993; Solomon et al. 1997; Yelin et al. 1998].

Prescribing

Prescription drugs may be beneficial but can have side effects and there is a need for the primary care physicians to increase their knowledge base in order to prescribe effectively and safely. To assist clinicians, advice is available to rationalise prescribing (Box 9) [Stephenson 2004], but for particular conditions, guidelines exist at either local or national level.
Neuropathic pain & the primary care physician

Neuropathic pain is a heterogeneous group of conditions with pain caused by a lesion or disease of the somatosensory nervous system [Bennett et al. 2007]. There is no single known mechanism to explain neuropathic pain [Forde 2007] and it has been reported that 8% of the UK population is affected [Torrence et al. 2006], with a typical primary care physician list including between 35 and 75 patients [Hall et al. 2006]. Typical examples

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Box 9. Good prescribing guidelines for primary care physicians.

- Is the drug necessary?
- Is the drug effective?
- Is the drug safe?
- Is therapy economical?
- Do you and your patient agree on the management plan?
- Do you or your patient understand how and when to take medication?
- Does your patient understand how and when to take medication?
- Is there a long-term plan?

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Figure 7. Mean disease duration from the onset of chronic back pain until a definite diagnosis of axial SpA. Results are presented for all patients with axial SpA and separately for the preradiographic and radiographic axial SpA subgroups. SpA: Spondyloarthritis. Reproduced from [Brandt et al. 2007] with permission from BMJ Publishing Group Ltd.
of neuropathic pain in general practice include painful diabetic neuropathy (PDN), post-
herpetic neuralgia (PHN), trigeminal neuralgia (TN) and neuropathic pain associated
with prolapsed intervertebral disc.

Up to 24% of shingles patients develop PHN and a third of all diabetics progress to painful diabetic neuropathy [Kirby 2003]. This has a major impact on primary care. Using self-reporting pain inventory questionnaires and physician prescribing data, van Severen reviewed 84 PHN patients and demonstrated suboptimal prescribing, increased pain interference in all domains (p < 0.001), and increased health resource utilization (p = 0.008).

Analysis of UK primary care computer records by Hall et al. (2006) identified neuropathic pain incidences of 28 (PHN), 27 (TN) and 21 (PDN) per 100,000 patient-years. Treatment was initiated for between 50 and 74% of patients. After compound analgesics, it was seen that tricyclic antidepressants (TCAs) and anticonvulsants were prescribed in only 75% of TN, 63% of PDN and 57% of PNH cases. In addition, great variation in initial drug and dosage was noted.

### Key learning points

- Early referral for some conditions, such as rheumatological conditions, with appropriate information is essential to prevent persistent pain
- Referral is usually dependent on the type, nature and severity of the impact of the pain and on the individual’s wellbeing and functioning
- Symptoms in the early stages of some pain-related conditions can be nonspecific and inconclusive, defying easy diagnosis
- Primary care physicians need to both manage the pain relief and enable the patient to manage their own condition, with referral where relevant
- All patients whose diagnosis is in doubt should be referred to an appropriate hospital specialist, and all patients whose pain is not well controlled or those whose pain is likely to deteriorate should be considered for early referral rather than late. This allows pain specialists to develop a rapport early on and provides clarity of diagnoses and a greater experience of a wider range of pain relief medications (including their benefit/risks in more complex cases)
- Waiting times for specialist pain services may be several months, so primary care physicians need to be able to modify treatment where appropriate according to local or national pain medicines management guidance

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Factors that affect the decision to refer from primary to secondary care

Joe Pergolizzi & Frank Huygen

There are a variety of reasons why a primary care physician might refer a patient with chronic noncancer pain to a secondary care specialist, and the decision to refer is a complicated process (Box 10).

Most commonly the reasons relate to diagnosis or investigation, treatment and reassurance of the primary care physician and/or patient. For some patients, the diagnosis may be unclear and therefore the primary care physician passes the patient to the specialist. Alternatively, the primary care physician may be concerned that they have missed a diagnosis or may be unwilling to tolerate uncertainty about a diagnosis and therefore refer to a specialist. Referral from primary to secondary care for reassurance or to obtain a second opinion is common among primary care physicians [Donohoe et al. 1999]. The doctor–patient relationship and response to patient pressure are also important factors in determining whether a referral is made. Armstrong and colleagues reported a significantly higher perceived pressure to refer among primary care physicians with high referral rates [Armstrong et al. 1991]. In addition, it is also important that

<table>
<thead>
<tr>
<th>Box 10. Reasons for primary care physician referral to a secondary care specialist.</th>
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<tr>
<td>Diagnosis is clear and referral to a specialist is the next step</td>
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<tr>
<td>Diagnosis is unclear and the primary care physician has concerns about missing a diagnosis and therefore the next step is to refer to a specialist</td>
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<tr>
<td>Primary care physician consultation time is too short for an accurate diagnosis and referral provides the opportunity for a longer consultation</td>
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<td>Patient has failed on treatment</td>
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<td>Patient may be a complex case with a range of comorbidities</td>
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<td>Patient requires specific tests that are not available in primary care</td>
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<td>Patient requires access to restricted medication or an interventional treatment</td>
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<td>Patient requests a second opinion, is highly anxious or persistently requests a referral</td>
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<tr>
<td>Primary care physician believes the patient has a ‘right’ to a referral</td>
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<td>Patient has repeatedly taken sick leave and requires diagnosis and treatment by a specialist for further sick leave to be permitted</td>
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<td>Transfer of budgetary responsibility for the patient from the primary to secondary care setting</td>
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<td>Patient may be involved in a medico–legal case</td>
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the primary care physician is educated on the benefits and services provided by a multidisciplinary team.

Both under-referral and over-referral can affect the quality of medical care. It is important to note that under-referral may occur because a primary care physician is not confident in their diagnosis and delays sending a patient to the specialist. In a survey of 153 US primary care physicians, knowledge about managing chronic low back pain varied widely and the majority of physicians did not feel very confident in their ability to diagnose any of the contributors of chronic low back pain (<50% for all items) (Figure 8). Specifically, a third were not at all confident in their ability to diagnose myofascial pain of the piriformis muscle or tensor fascia lata/iliotibial band. The authors suggested that this could result in over-reliance on imaging results to guide treatment approaches and possibly lead to unnecessary surgical procedures [Cayea et al. 2006].

![Figure 8. Knowledge and attitude item scores of US primary care physicians (n = 153) questioned about chronic low back pain in older adults.](image)

1Four questions relating to sacroiliac joint pain were included in the calculation.

Data from [Cayea et al. 2006].
In a qualitative interview study of 40 primary care physicians’ referral behaviour for headache in the UK, several factors were cited as influencing a GP’s willingness to refer for headache. These included the GPs’ perceptions of patient anxiety and pressure, particularly when associated with time pressures and problems in the doctor–patient relationship [Morgan et al. 2007]. The characteristics of the individual GP also played a role, including their clinical confidence and concerns about missed diagnosis, personal tolerance of uncertainty, views of patient’s rights to referral and attitude towards the therapeutic right to referral. Lastly, the local availability of services was also an influencing factor for referral practice and response to patient pressure (Figure 9).

Figure 9. Major influences on primary care physician’s referral behaviour (primary to secondary care) for headache in the absence of clinical indicators. Adapted from [Morgan et al. 2007].
In the case of chest pain, referral rates from primary to secondary care appear to be influenced by the initial diagnosis and the degree of certainty about the initial diagnosis. In a recent observational study of patients with chest pain in Europe, the relationship between referral rate (no, nonurgent or urgent) and the primary care physician’s diagnosis and certainty of the initial diagnosis was investigated. Notably, referral rates for patients with chest pain were influenced by the initial diagnosis, with a suspected diagnosis of serious heart disease associated with an increased referral rate: 85% of patients in this category were referred irrespective of the primary care physician’s certainty of the diagnosis. Uncertainty about a diagnosis by a primary care physician (for all initial diagnostic categories including serious and nonserious heart and lung disease and other disease) was also associated with a high referral rate (54% nonurgently, 18% urgently), and this was possibly attributable to fear of missing a serious diagnosis [Bruyninckx et al. 2009].

Together, the findings from these studies highlight the importance of adequate education of primary care physicians to ensure accurate and timely referral of patients with chronic pain from primary to secondary care. Several surveys have examined primary care physician’s perceived adequacy of training in chronic pain and suggest that many feel inadequately trained and with insufficient knowledge to cope with the demands of chronic pain management in everyday clinical practice [Darer et al. 2004; Weiner et al. 2005].

Key learning points

- Primary care physicians should accurately evaluate the patient to choose the correct specialist for referral in order to avoid delayed diagnosis
- There are a variety of reasons why a primary care physician might refer a patient with chronic noncancer pain to a secondary care specialist and the decision to refer is a complicated process
- Referral from primary to secondary care for reassurance or to obtain a second opinion is common among primary care physicians
- The local availability of specialty services and response to patient pressure are influencing factors for referral practice

References


The pharmacological management of chronic pain

Bart Morlion, Joe Pergolizzi & Andrew Nicolaou

Inadequate or inefficient pharmacological treatment of chronic pain is a common problem and discontinuation of treatment as a result of adverse effects is a frequent occurrence [Chou et al. 2003; Kalso et al. 2004; Moore & McQuay 2005]. Balancing adequate pain relief with acceptable tolerability is a significant challenge for physicians caring for patients with chronic noncancer pain. Many patients are trapped in a ‘vicious circle’ in which they alternate between adequate pain relief and unacceptable tolerability, and inadequate pain relief and acceptable tolerability (Figure 10) [Varrassi et al. 2010]. Tolerability issues during the pharmacological management of chronic pain are common. In particular, the management of opioid-related side effects, which include central nervous system and gastrointestinal effects, pose a major clinical challenge, often necessitating a dose reduction and limiting the effective analgesic dose that can be achieved [Manchikanti et al. 2010].

In addition to side effects and lack of efficacy, analgesic tolerance may also drive the ‘vicious circle’. An approach often adopted to address this problem is to switch drugs or to increase the dose of drug; however, this frequently increases the potential for drug-related adverse effects [Benyamin et al. 2008; Varrassi et al. 2010] and the use of a standard protocol to rotate between opioids is not supported by widespread studies. The published conversion tables are mainly based on equianalgesic doses calculated from short-term studies in acute pain models in animals and humans [Vissers et al. 2010]. Ultimately, the ‘vicious circle’ often results in poor patient compliance and/or discontinuation of treatment. Avoiding the ‘vicious circle’ requires regular monitoring and continuous reassessment of the patient, a good understanding of pharmacological treatment options and good communication between physicians and patients to agree on individual treatment goals and differing expectations of treatment success. Only if the physician has a clear and accurate picture of the patient’s condition and expectations can the patient be prescribed the most appropriate pharmacological therapy and thereby have the chance of achieving the ultimate goal of efficient pain management [Müller-Schwefe et al. 2011].

Pharmacotherapy for chronic pain (Box 11)

Several international guidelines have been published on the management of chronic pain, along with guidelines from national pain societies and working groups [WHO 1996; Chou et al. 2007; ASA 2010; Attal et al. 2010]. By recommending treatment options for different pain conditions, the guidelines aim to aid clinicians in the effective management of chronic pain. Among available guidelines, those produce by WHO, although originally developed for cancer pain, are the most widely used [WHO 1996].
Chronic Pain Management

Figure 10. The ‘vicious circle’ showing interaction of influencing factors.

Inter-relation between influencing factors. Once underway, a vicious circle results in inefficient pain management and higher costs.
Box 11. Current pharmacological options for chronic noncancer pain.

Prostaglandin synthesis inhibitors (NSAIDs, selective COX-2 inhibitors): NSAIDs act on the COX-1 and COX-2 enzymes, inhibiting prostaglandin synthesis. COX-2 inhibition blocks production of proinflammatory prostaglandins, while COX-1 inhibition blocks production of gastroprotective prostaglandins. Traditional NSAIDs inhibit both COX-1 and COX-2, while selective COX-2 agents inhibit COX-2 only. Traditional NSAIDs are therefore associated with dyspepsia, ulcers and subepithelial haemorrhage and are thus less suitable for patients at risk of gastric complications, such as the elderly.

Paracetamol (acetaminophen): Possesses analgesic and antipyretic activity but not anti-inflammatory activity. It is thought to inhibit prostaglandin synthesis by acting on the COX enzymes. In addition, paracetamol reinforces descending inhibitory pain pathways.

Opioid analgesics: Mediate pain relief via binding at opioid receptors distributed throughout the brain, spinal cord and peripheral nervous system. Mainly effective in managing nociceptive pain and partially effective in the management of neuropathic pain. Opioids represent the mainstay of treatment for long-term chronic pain, primarily cancer pain but also have a role in the management of noncancer pain (e.g., neuropathic pain and low back pain). Side effects such as constipation, nausea and vomiting, and central nervous system effects (e.g., sedation) frequently result in patients discontinuing opioid treatment. Dependence or tolerance may result following repeated administration. Examples include tramadol, codeine, dihydrocodeine, buprenorphine, morphine, oxycodone and fentanyl.

MOR-NRI: A proposed new class of centrally acting analgesic which combines two mechanisms of action in one molecule: µ-opioid receptor (MOR) agonism and noradrenaline-reuptake inhibition (NRI). The first representative of this class is tapentadol, which has been shown to be effective for the management of severe chronic pain and has a superior gastrointestinal tolerability profile compared with oxycodone HCl controlled release.

Anticonvulsants: Inhibit neuronal excitation and stabilise nerve membranes. Used for the treatment of neuropathic pain, primarily that caused by diabetic polyneuropathy, postherpetic neuralgia and trigeminal neuralgia. The newer anticonvulsant agents pregabalin and gabapentin exert their analgesic effects by binding to the α2-δ subunit of N-type voltage-gated calcium channels, thereby modulating pathologically enhanced neuronal excitation. The main side effects with these agents include somnolence, dizziness, weight gain and peripheral oedema, and caution is advised in patients with renal insufficiency. The old anticonvulsant carbamezepine stabilizes nerve membranes but is only recommended as a first-line drug for the treatment of trigeminal neuralgia.

Antidepressants: Effective for the treatment of neuropathic pain and also complex regional pain syndrome and tension headache. Primarily achieve analgesia by increasing neurotransmitter (noradrenaline, serotonin) concentrations, which intensifies activity in the descending pain inhibitory pathways. Side effects typically observed with tricyclic antidepressants are linked to their anticholinergic actions and include sedation, dry mouth, blurred vision, weight gain and urinary retention.

Topical analgesia: Used for the local treatment of chronic pain. Topical analgesics include rubefacients, which are traditional formulations based on salicylate and nicotinate esters, and capsaicin, NSAIDs and miscellaneous agents (e.g., benzydamine, mupopolysaccharide polysulphate, salicylamide and cooling sprays). Topical preparations such as the lidocaine 5% plaster are recommended for the management of localised peripheral neuropathic pain such as postherpetic neuralgia and diabetic polyneuropathy.

Adapted from [Varrassi et al. 2010; Ablbeck 2011; Morlion 2011; Lange et al. 2010].
The WHO guidelines advocate a three-step approach to the use of analgesics, starting with simple nonopioid analgesics (e.g., paracetamol and nonsteroidal anti-inflammatory drugs [NSAIDs]) and then moving on to weak opioids followed by strong opioids if the pain increases or is persistent. At each step of the analgesic ladder, nonopioid analgesics form the basis of pain management combined with adjuvant drug therapy (e.g., anticonvulsants and tricyclic antidepressants) as needed.

Regardless of the severity of the chronic pain, the analgesia should be delivered ‘by the clock’ rather than ‘on demand’, and preferably by oral or transdermal delivery [WHO 1996]. However, chronic pain is related to multiple physiological causes or pathways, so it is rational to base pain management decisions not only on the severity of pain, but also on the underlying mechanisms responsible. This requires the patient’s clinician to identify the specific causative mechanisms underlying an individual patient’s pain symptoms and to then prescribe the most appropriate therapy, thereby providing a mechanism-orientated approach to pain treatment. Unless these underlying mechanisms are addressed, analgesic therapy is likely to prove ineffective [Müller-Schwefe 2011].

Importantly, patients suspected of having multiple causative pain mechanisms are usually best managed by using a combination of therapeutic strategies that may include both pharmacological and nonpharmacological approaches. Because most analgesic drugs have a single mechanism of action (i.e., are monomodal), many patients with chronic pain are inadequately controlled by a single agent; instead, effective and safe pain management can often only be achieved through careful dose titration of several analgesic drugs administered in combination. When used concomitantly, analgesics may produce their pharmacological effects independently or, alternatively, interact to potentiate or antagonise one another, affecting both efficacy and tolerability. Combining different analgesic agents may, in some circumstances, be associated with a higher risk for adverse events and increase the likelihood of the patient becoming trapped in the ‘vicious circle’ [Varrassi et al. 2010]; however, conversely, in some cases, side effects from the individual agents may be limited through the ability to use lower drug doses when employing combination versus single-agent therapy. Currently, a promising avenue of research in the field of analgesia is to combine two mechanisms of action in a single molecule to produce a synergistic effect. One such example is tapentadol, which has a dual mode of action as an opioid receptor agonist and noradrenaline-reuptake inhibitor. Tapentadol has recently been licensed in Europe for the management of severe acute and chronic pain in adults [Tzschentke et al. 2007; Pergolizzi et al. 2011].

The option to combine drugs with different mechanisms of action is particularly important for mixed pain syndromes that comprise both nociceptive and neuropathic components, as in the case of some patients with low back pain. As a consequence of the underlying mixed pathology, patients with chronic low back pain can benefit from treatment with paracetamol, an NSAID or COX-2 inhibitor to target the nociceptive
component, and an antidepressant to target the neuropathic component. By targeting the nociceptive and to a lesser extent the neuropathic component, opioids can also play an important role in the management of chronic low back pain, although high doses are often required and their long-term efficacy in this setting is unclear [Sng & Schug 2009; Morlion 2011]. For those patients with chronic low back pain that is solely nociceptive based, adequate pain management may be achieved with a single pharmacological agent [Morlion 2011].

Neuropathic pain (e.g., trigeminal neuralgia and postherpetic neuralgia) is typically characterised by a more intense and prolonged course with greater comorbidity and poorer quality of life compared with nociceptive pain [Freynhagen & Baron 2009]. Available first-line treatment options include tricyclic antidepressants, dual reuptake inhibitors of serotonin and noradrenaline (e.g., duloxetine), gabapentin, pregabalin and topical lidocaine. Second-line options include the opioids, although they may be considered for first-line use in selected clinical circumstances (e.g., acute neuropathic pain or neuropathic cancer pain) [Dworkin et al. 2007].

Key learning points

- Drugs do have a role in the management of chronic pain, but their effects can be limited
- Pharmacotherapy of chronic pain always needs to be placed in a broader therapeutic framework, including nonpharmacological strategies
- Pharmacotherapy itself remains a challenge
- The indication for starting and continuing pharmacological agents for chronic pain should be guided by the pain mechanisms and evaluated on a regular basis to avoid a ‘vicious circle’ of discontinuation
- Combining drugs with different mechanisms of action represents a rational approach to the management of chronic pain

References


Potential restrictions on referrals

Joe Pergolizzi, Concepción Pérez Hernández & Cesar Margarit Ferri

A number of factors may restrict patient referral to a multidisciplinary pain management team (Box 12) and the ease with which a primary care physician can refer a patient to a pain specialist varies from country to country depending on the arrangements for provision of healthcare. Many countries lack a systematic referral process with no direct referral pathway or clear guidelines on which patients should be referred to which specialist and the benefits of a multidisciplinary treatment in a pain unit; in some countries, primary care physicians cannot refer directly to pain specialists (Table 2) – instead they must refer to another disease specialist. In addition, restrictions on service provision may be in place based on the limits of the patient’s health insurance. Long waiting lists are also a significant barrier to pain clinic referral for consultation with a pain specialist. Long wait times to access a pain specialist are common in many countries and, by denying appropriate treatment to some members of the population, can result in decreased patient satisfaction, and increased morbidity and mortality rates [Davies 1999; Prentice & Pizer 2007]. In developing countries, severe budgetary constraints make it difficult or impossible to set up a multidisciplinary pain centre, denying patients with chronic pain any chance of receiving adequate pain relief [Bond 2011; Fields 2011].

Restrictions on the reimbursement of medicines for the treatment of chronic pain are also an issue in some countries. A situation may be imposed whereby certain pharmacological agents can only be prescribed by specialists (with or without detailed information) while other interventions are only reimbursed after evaluation in a recognised reference centre for pain management. Furthermore, the decision on whether or not to use a multidisciplinary team is often not

Box 12. Factors that may restrict patient referral to a multidisciplinary pain management team.
- A lack of clinical referral pathways from primary care physician to pain specialist
- Long wait time to access a pain specialist
- Budgetary constraints preventing the set-up of a multidisciplinary pain centre/team
- Third-party payer difficulty in reimbursement of a multidisciplinary pain treatment programme
- Knowledge of which patients should be referred
- Knowledge of the benefits of a multidisciplinary pain clinic
<table>
<thead>
<tr>
<th>Country</th>
<th>Systematic referral process in place?</th>
<th>Specialists responsible for treatment of patients with chronic pain</th>
<th>Specialists responsible for patient referral to pain specialist</th>
<th>Specialists responsible for follow-up treatment</th>
<th>System in place to monitor patient outcome?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>No</td>
<td>Primary care physician, orthopaedist, neurologist, physical therapist</td>
<td>Primary care physician</td>
<td>Primary care physician</td>
<td>No</td>
</tr>
<tr>
<td>France</td>
<td>No</td>
<td>Primary care physician, rheumatologist, neurologist, pain centre</td>
<td>Rheumatologist, neurologist</td>
<td>Rheumatologist, neurologist</td>
<td>Yes (pain network and pain clinic)</td>
</tr>
<tr>
<td>Germany</td>
<td>Yes</td>
<td>Primary care physician, orthopaedist, physiotherapist, neurologist, pain specialist (anaesthetist)</td>
<td>Primary care physician, orthopaedist, physiotherapist, neurologist, pain specialist (anaesthetist)</td>
<td>Pain medicine specialist, rheumatologist, primary care physician</td>
<td>Yes</td>
</tr>
<tr>
<td>Italy</td>
<td>Yes (when patient treatment becomes problematic)</td>
<td>Primary care physician, orthopaedist, physiotherapist, neurologist, pain specialist (anaesthetist)</td>
<td>Primary care physician, orthopaedist, physiotherapist, neurologist, pain specialist (anaesthetist)</td>
<td>Primary care physician</td>
<td>No (patients should return to the pain specialist in 2–4 weeks)</td>
</tr>
</tbody>
</table>

Data based on a report from CHANGE PAIN® Advisory Board Meeting, November 2010.
<table>
<thead>
<tr>
<th>Country</th>
<th>Systematic referral process in place?</th>
<th>Specialists responsible for treatment of patients with chronic pain</th>
<th>Specialists responsible for patient referral to pain specialist</th>
<th>Specialists responsible for follow-up treatment</th>
<th>System in place to monitor patient outcome?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poland</td>
<td>No (dependent on availability of pain management centres)</td>
<td>Primary care physician, rehabilitation therapist, orthopaedist, neurologist</td>
<td>Primary care physician, rehabilitation therapist, orthopaedist</td>
<td>Pain medicine specialist, primary care physician</td>
<td>Yes (every 1–2 months for patients receiving strong opioids); other patients monitored for exacerbation of pain and side effects</td>
</tr>
<tr>
<td>Spain</td>
<td>Yes (in certain areas)</td>
<td>Primary care physician, orthopaedist, rheumatologist, anaesthesiologist, rehabilitation practitioner, neurosurgeons</td>
<td>Primary care physician, orthopaedist, rheumatologist, anaesthesiologist, rehabilitation practitioner, neurosurgeon</td>
<td>Primary care physician, anaesthesiologist, pain unit</td>
<td>Sometimes (e.g., for patients with low back pain)</td>
</tr>
<tr>
<td>Sweden</td>
<td>Yes (relatively standardised but waiting times and priorities vary depending on the type of funding for the specialty, e.g., state or private)</td>
<td>Primary care physician</td>
<td>Primary care physician (referral to pain specialist is uncommon and waiting times are too long)</td>
<td>Primary care physician, orthopaedist</td>
<td>No</td>
</tr>
</tbody>
</table>

Data based on a report from CHANGE PAIN® Advisory Board Meeting, November 2010.
### Table 2. Current status on multidisciplinary care in Europe and the USA for patients with back pain.

<table>
<thead>
<tr>
<th>Country</th>
<th>Systematic referral process in place?</th>
<th>Specialists responsible for treatment of patients with chronic pain</th>
<th>Specialists responsible for patient referral to pain specialist</th>
<th>Specialists responsible for follow-up treatment</th>
<th>System in place to monitor patient outcome?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switzerland</td>
<td>No</td>
<td>General physician, rheumatologist, physiotherapist, psychologist, pain specialist, anaesthetist, neurosurgeon</td>
<td>General physician, rheumatologist</td>
<td>Pain specialist and referring doctor</td>
<td>No</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>No (random and often at the patient’s request)</td>
<td>Primary care physician, neurologist, orthopaedist, neurosurgeon, pain specialist, rehabilitation doctor, radiologist, psycholo-gist, physiotherapist</td>
<td>Primary care physician, neurologist, orthopaedist, rehabilitation doctor</td>
<td>Pain specialist, nurse practitioner</td>
<td>No</td>
</tr>
<tr>
<td>UK</td>
<td>Yes (local triage and some private models)</td>
<td>Primary care physician, orthopaedist, rheumatologist, physiotherapist</td>
<td>Primary care physician, orthopaedist, rheumatologist, physiotherapist</td>
<td>Primary care physician, physiotherapist, pain specialist</td>
<td>Sometimes (includes questionnaires and telephone follow-up)</td>
</tr>
<tr>
<td>USA</td>
<td>No</td>
<td>Primary care physician, rehabilitation therapist, pain management team</td>
<td>Primary care physician</td>
<td>Primary care physician, rehabilitation therapist, pain management team</td>
<td>Yes (patients on extended-release opioids may remain under pain clinic, others monitored 3 monthly as necessary)</td>
</tr>
</tbody>
</table>

Data based on a report from CHANGE PAIN® Advisory Board Meeting, November 2010.
solely the remit of the primary care physician and patient. Instead, healthcare insurance companies and large hospitals may decide on which services to fund. In some situations, third party payers may refuse to provide reimbursement for a multidisciplinary pain treatment programme in the misguided attempt to reduce costs. Also, under some circumstances, a multidisciplinary pain centre, which is traditionally a less lucrative source of income generation, may be lost in favour of a more profitable centre (e.g., cosmetic surgery).

**Key learning points**

- A number of factors may restrict patient referral to a multidisciplinary pain management team and these vary from country to country depending on the arrangements for provision of healthcare
- The decision on whether or not to use a multidisciplinary team is often not solely the remit of the primary care physician and patient
- There are still major restrictions on patient referrals to a multidisciplinary pain management team
- There are no referral criteria or guidelines about which specialist or unit chronic pain patients should be referred to and when

**References**

The implementation of referral guidelines tailored to meet the needs of and demands on primary care physicians could potentially assist with the earlier diagnosis of some painful conditions such as axial SpA and rheumatoid arthritis. Guidelines for primary care physicians on when to refer a patient with chronic pain should be straightforward and, importantly, enable the majority of patients requiring referral to be identified.

Although there has been progress in some areas of chronic noncancer pain (for example, anaesthesiologist pain specialists in The Netherlands have recently developed referral guidelines for patients with chronic pain), as yet, good clinical prediction rules that help physicians identify patients who require diagnostic tests, treatment and/or referral have yet to be developed in many areas of pain management. As a consequence of this, primary care physicians are often uncertain about when and when not to refer a patient with chronic noncancer pain. Both under-referral and over-referral have important consequences: under-referral may result in patients being diagnosed too late for effective treatment while over-referral places an increased burden on secondary care services. Headache is a common area of over-referral and has been reported to account for approaching a third of all new specialist neurology appointments in the UK [Patterson & Esmonde 1993]. Possible reasons for the over-referral of patients with headache include a combination of patient pressure, primary care physician characteristics (e.g., clinical uncertainty), organisational factors and service availability [Morgan et al. 2007]. This suggests that further support in the diagnosis and management of headache may be needed by some physicians; for example, the preparation of good clinical prediction rules could help reduce clinical uncertainty.

In the absence of clear referral guidelines for primary care physicians, the general principle should be to refer patients for pain management if they have not improved under the care of a primary care physician within 6–12 weeks. The pain management team should then provide patient education and onward referral for rehabilitation with or without interventional techniques. Direct referral to a surgeon should only be initiated for patients in urgent need of surgery.
Key learning points

- There is a strong need for referral guidelines for primary care physicians who are evaluating patients with chronic pain
- The pain management team should then provide patient education and onward referral for rehabilitation with or without interventional techniques

References

Communication between patients, primary care physicians and specialists

Joe Pergolizzi, Andrew Nicolaou & Ana Cristina Mangas

Successful management of a patient with chronic noncancer pain is dependent on effective three-way communication, involving the adequate and timely exchange of information between patients, primary care physicians and specialists.

## Expectations for communication

The expectations of patients and physicians with respect to the communication process are often very different. Patients expect clear communication and explanation of their diagnosis (including the cause of their chronic pain), treatment and follow-up requirements from both the primary care physician and specialist. They also require that the treating clinician is sensitive to and aware of the patient’s needs and concerns, and these are addressed in a timely fashion. Communication ideally should be as rapid as possible; patients are often intolerant of anything but a few days delay, highlighting the importance of rapid (e-mail) communication of specialist reports [Dawn et al. 2003; Piterman & Koritsas 2005a].

For primary care physicians, it is important that they receive a prompt, clear, succinct response from the pain specialist on the diagnosis and management as well as justification for the course of action [Scott et al. 2004]. In turn, specialists expect the primary care physician to provide sufficient clear information about the problem and an adequate pain history [Piterman & Koritsas 2005a]. A common complaint from specialists is that referral letters fail to include enough information (statement of the problem, current medication and reason for referral) to adequately address the problem [Gandhi et al. 2000]. Unsurprisingly, primary care physician and specialist perceptions of communication regarding referrals and consultations often differ [Berendsen et al. 2009; O’Malley & Reschovsky 2011]. In a recent US-based survey of more than 4000 physicians, 69% of primary care physicians reported “always” or “most of the time” sending notification of a patient’s history and reason for consultation to specialists, but only 35% of specialists said they “always” or “most of the time” received such notification. Similarly, 81% of specialists said they “always” or “most of the time” send consultation results to the referring primary care physician, but only 62% of primary care physicians said they received such information [O’Malley & Reschovsky 2011].
Importance of adequate pain assessment

The main objectives of chronic pain management are maximising pain reduction, improving health-related quality of life, independence and mobility, enhancing psychological wellbeing and preventing secondary dysfunction. The degree of pain relief required to achieve a clinically significant improvement in health-related quality of life and psychological wellbeing varies according to the individual patient. Therefore, to ensure the effective management of chronic pain, it is important that physicians have a good understanding of their individual patient’s pain and how it impacts on their daily life. Existing standardised methods for the assessment of pain (e.g., Visual Analogue Scale and Numerical Rating Scale) are typically based on a subjective assessment of pain severity and often lead to a mismatch between the physician’s and patient’s rating of pain severity, most notably an underestimation of pain on the part of the physician [Glajchen 2001]. In addition, the assessment of quality of life involves the use of questionnaires, which are very time-consuming for primary care physicians (e.g., Western Ontario and McMaster Universities Osteoarthritis Index and EuroQoL). Moreover, patients may often use pain descriptors that might have overlapping or confusion meanings and their descriptions of pain may not actually be related to the pain but might be more influenced by their prevailing emotions and or behavioral attitudes. Taken together, this means that many physicians have difficulty quantifying the level of pain experienced by their patients. This results in a poor understanding by the physician of the patient’s situation and treatment expectations and, ultimately, poor communication between physicians and patients. This negative sequence of events is considered to be one of the main reasons for inadequate pain control among patients with chronic pain [Müller-Schwefe et al. 2011].

In an effort to improve physician–patient communication, the international CHANGE PAIN® advisory panel devised the CHANGE PAIN® scale (Figure 11) [Müller-Schwefe et al. 2011]. This simple, user-friendly tool permits the assessment of a patient’s chronic pain during a short consultation and facilitates collection of not only details of pain intensity but also of the patient’s quality of life and their expectations of treatment. Thus, the physician is able to use the CHANGE PAIN® tool during the initial assessment to identify the key factors likely to drive a successful outcome. The tool has been designed specifically for ease of use. Thus, on its front is an 11-point numerical rating scale (NRS) that is used to assess the patient’s perceived current pain level and the level of pain that might be tolerable and, therefore, an acceptable and realistic target. On the back of the tool are six recognised key quality-of-life parameters. Clinicians discuss with each patient the levels of improvement needed in each parameter. This can then be used to help the physician select the most appropriate therapy for the patient. The tool can be used at subsequent visits to monitor progress towards attainment of therapeutic goals.
Reasons for poor communication

Poor communication during the referral process can arise for several reasons (Figure 12). A common cause of communication breakdown is the inadequate transfer of information from the primary care physician to the specialist and vice versa. Use of a standardised referral form can help to ease the communication process by highlighting the information sought by the specialist. This has improved further in recent years with the use of computer-generated letters [Piterman & Koritsas 2005a; Berendsen et al. 2009]. By adopting this approach and ensuring that the referral letter is complete, it should be possible to avoid a situation arising in which a specialist does not provide an answer or provides incomplete information to the patient and primary care physician. Including a clearly demarcated, prominent place on the referral letter for the specialist’s answer and advice is also useful [Berendsen et al. 2009].

Importantly, communication between the patient and the primary care physician or specialist may be hampered by a reluctance on the part of the patient to report pain due to low expectations of obtaining effective analgesia or fear of treatment-related adverse events [Glajchen 2001]. Many patients also complain that their pain is not taken seriously enough and is inadequately managed [Breivik et al. 2006].

Figure 11. CHANGE PAIN® scale. Adapted from [Müller-Schwefe et al. 2011]. ©2011, Informa Healthcare. Reproduced with permission of Informa Healthcare.
<table>
<thead>
<tr>
<th>Inadequate information provided by PCP to specialist for referral</th>
<th>Patient reluctance to report pain due to low expectations of treatment</th>
<th>Failure of specialist to provide an answer because of incomplete referral letter</th>
<th>Lack of understanding by patient and PCP regarding what to expect of pain specialist or surgeon and what is achievable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of understanding of each other’s goals for treatment (PCP vs specialist)</td>
<td>Absence of interdisciplinatory structures (e.g., interactive clinical multidisciplinary sessions)</td>
<td>Use of complex language/specialist jargon</td>
<td>Incomplete information/explanations from specialist to patient and PCP</td>
</tr>
</tbody>
</table>

**Figure 12. Reasons for poor communication.**
PCP: Primary care physician.
The use of medical jargon can also contribute to poor communication and presents a significant barrier to understanding. Although medical jargon can be a useful tool when everyone understands the terminology, it can intimidate when used inappropriately. Good communication requires the use of common terms that are clearly understood by all parties. The use of complex medical language not only creates barriers and social distance between the treating physician and patient [Sevinc et al. 2005] but may also hinder communication between the specialist and primary care physician who may not understand specialist jargon. According to NICE for England and Wales, communication between healthcare professionals and patients should be supported by evidence-based written information tailored to the patient’s needs. Furthermore, it should be culturally appropriate and accessible to patients with additional needs such as physical, sensory or learning disabilities and to people who do not speak or read English [NICE 2009]. Language barriers, cultural traditions, cognitive impairment or misunderstanding may influence communication between physicians and patients.

Other sources of poor communication include a lack of understanding by the patient and primary care physician regarding the specialist’s or surgeon’s role in pain management or what they can and cannot achieve, and a lack of understanding of each other’s treatment goals. Traditionally, primary care physicians tend to be patient-focused, seeking to understand the individual patient and the context of his/her disease. By contrast, specialists are more focussed on diagnosis, treatment and management rather than the individual patient as a whole, with the emphasis of their expertise on disease management [Piterman & Koritsas 2005b]. Ultimately, these differing roles can sometimes lead to a lack of appreciation of each other’s treatment goals.

A lack of interdisciplinary structures, in particular interactive clinical multidisciplinary sessions, can also present a communication barrier as there are a host of benefits to conducting entire clinical team sessions, including the establishment of interpersonal relationships between the team members, the immediate sharing of data in a face-to-face setting (which can reduce the potential for transliteration errors in information exchange) and the ability to make more timely decisions with team consensus. The concept of a ‘tumour board’, which includes the entire multidisciplinary team to discuss the patient management plan, has been effectively used in oncology for a number of years.

Consequences of poor communication
If the lines of communication between the primary care physician, patient and specialist are poor, this will adversely affect the referral process and have a direct effect on patients (Box 13).
Box 13. Consequences of poor communication.

- Poor diagnostic process
- Inadequate pain control
- Additional specialist visits
- Redundant testing leading to increased costs
- A more time-consuming process for patients and clinicians
- Poor continuity of care
- Polypharmacy
- Unrealistic expectations
- Patient dissatisfaction and loss of confidence in medical practitioners
- Official complaint from patients

The impact on the patient is wide-ranging and may include delays in diagnosis and inadequate pain control, resulting in additional clinic visits or trips to the emergency room/accident and emergency department, unnecessary investigations (e.g., x-rays), increased costs, polypharmacy with an increased risk of drug-induced side effects and even increased litigation risk [Epstein 1995; Gandhi et al. 2000; Piterman & Koritsas 2005a; Müller-Schwefe et al. 2011]. Ultimately, the entire treatment process becomes prolonged and time-consuming for clinicians and patients and continuity of care is poor. Such negative experiences lead to a loss of confidence by patients in the healthcare system and may result in some patients withdrawing from a treatment plan [Kaplan et al. 1996].

Key learning points

- Communication between the stakeholders is essential for successful management of a chronic pain patient
- The expectations of patients and physicians with respect to the communication process are often very different and can lead to less-than-adequate care; therefore, these expectations must be managed effectively
- Primary care physician’s and specialist’s perceptions of communication regarding referrals and consultations often differ, and this is one of the main reasons for inadequate pain control
- To ensure the effective management of chronic pain it is important that physicians have a good understanding of their individual patient’s pain intensity and how it impacts on their daily life, as well as adequate tools for this

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Models for secondary care pain referral services

Joe Pergolizzi

Not every patient with chronic noncancer pain requires complex multidisciplinary evaluation and treatment and most clinic or in-patient programmes are likely to treat patients who have pain as one of their underlying problems. However, if a patient has failed on conventional therapy and has an uncertain diagnosis despite multiple medical evaluations and treatment, they should be referred (Figure 13).

A pain programme model is a term used to refer to clinics or programmes developed specifically for patients with complex pain problems who cannot be managed by a primary care physician or as a part of another hospital clinic, as in the case of patients with...
pain and other comorbidities. According to the IASP, several different pain programme models currently exist, including unidisciplinary (single consultant) pain practices, pain consultation teams, multidisciplinary programmes and pain services (Figure 14).

A ‘triage system’ can also be used, whereby, on initial examination, if it is felt that a patient has a high likelihood of their acute pain progressing to chronic pain, the decision is to provide management strategies to deal with the chronic pain potential early on in the management of the patient. The pain consultant can be included early on to provide instructions to the primary care physician on how best to manage the patient with the chronic pain condition.

All of these models offer specialist treatment approaches specifically tailored for the management of chronic pain. Syndrome-oriented clinics may also exist within a model, such as headache clinics and low back pain centres.

By definition, patients referred to secondary care pain services will be those with more complex pain problems that have not responded to treatment in other centres. The type of model implemented in a particular setting depends on the medical needs of the patient, the patient’s requirement for access to hospital services, available resources and the expertise of the staff in managing pain.

![Figure 14. Models for secondary care pain referral services.](image-url)
Pain practice
Unidisciplinary pain practices involving a single consultant and based in an out-patient hospital or private clinic environment have traditionally accounted for the majority of secondary care pain referral services, probably because they require the fewest resources of all the models (Figure 15).

The majority of unidisciplinary pain practices are anaesthesiology focused, followed by psychology-based practices. To ensure a high standard of care, it is essential that the provider is knowledgeable about the biological, psychological and social/environmental factors associated with pain. The treatment and management of pain in this setting is from the perspective of the discipline involved; for example, at an anaesthesiology clinic, a patient may be evaluated for appropriateness for a nerve block. Other services may be provided, but are undertaken on a referral basis rather than from within an organised team (e.g., referral to a physiotherapist).

It is important that the single consultant running the unidisciplinary pain practice has a good working knowledge of what other disciplines can offer and has the facility to consult as needed with healthcare workers from other specialities. Furthermore, if diagnostic or therapeutic issues arise that exceed the provider’s level of expertise, the patient should be referred to a multidisciplinary pain centre or clinic (IASP 2011).

Pain consultation team
A pain consultation team comprises two or more individuals who act in an advisory capacity for the treatment of difficult pain cases. The team members may simply meet and review the patient’s records or they may meet with the patient collectively or individually. By definition, they act in a consultative capacity only and do not provide ongoing treatment (Figure 16).

Figure 15. Model of a single discipline out-patient pain practice.

Figure 16. Model of a pain consultation team.
Multidisciplinary in-patient & out-patient programmes

Intensive pain treatment services that cut across specific discipline lines are termed multidisciplinary in-patient and out-patient programmes. They vary considerably in their scope and focus and may involve as many as eight or more healthcare specialists all working together under one roof. Multidisciplinary teams may be based in specialised pain centres or clinics (Box 14). A multidisciplinary hospital-based service with in-patient and out-patient facilities is typically referred to as a pain centre and ideally exists as a component of a medical school or teaching hospital. By contrast, a pain clinic is usually set in an out-patient hospital clinic or nonhospital setting, such as the physician’s office, but may have in-patient facilities [Chen 1996; IASP 2011]. Multidisciplinary pain centres also differ from clinics in that, in addition to patient care, they offer research and academic teaching. This has two advantages. First, the clinical trial populations can encompass patients who are referred to the centre, thereby making the research relevant to clinical practice. Second, patient outcome is improved as ongoing teaching and research at a multidisciplinary pain centre promotes rigorous clinical thinking and an evidence-based approach to patient care [Fields 2011].

Where multidisciplinary pain centres and clinics exist, they should be the primary point of referral offering evaluation and treatment of both acute and chronic pain disorders. At this level of care, the major goal is no longer limited to pain relief but efforts are also focused towards increasing activity levels and muscle strength, decreasing pain-related behaviours, eliminating reliance on certain medications (e.g., narcotic analgesics or muscle relaxants), and reducing depression and social isolation. Importantly, multidisciplinary pain centres and clinics should be capable of treating any type of pain problem and, for this reason, there should be a system
Box 14. Key features of a multidisciplinary pain centre or clinic.

- Comprises a broad range of clinical staff plus other healthcare disciplines with expertise in pain management
- Patient assessment and treatment is multidisciplinary
- Able to diagnose and treat both the physical and psychosocial aspects of a patient’s problem
- Aims of treatment include improvement of pain and/or pain management and improvement in patient’s physical, psychological and social functioning
- Care is patient centred and delivered in a coordinated manner
- Ability to treat any type of pain problem
- Must be a system in place for obtaining consultation as needed from other specialities not included on the staff
- Clinicians are familiar with all relevant treatment guidelines
- Existence of a designated space for the clinic/centre activities (i.e., all staff work together under the same ‘roof’)
- Centre staff routinely collect and summarise data on the characteristics and outcomes (e.g., pain intensity and quality of life) for the patients treated and evaluated
- Provision for healthcare professionals to communicate with each other on a regular basis both about individual patients and the programmes offered by the pain treatment facility
- Clinical activity is supervised by an appropriately trained and licensed clinic director/coordinator
- Affiliated with a higher education and/or research institution and engaged in research and academic teaching in chronic pain†

†Multidisciplinary pain centre only.
Adapted from [IASP 2011].

in place to facilitate consultations as needed with healthcare professionals from disciplines not included on the multidisciplinary team.

**Pain service**

A pain service is an organised group of clinics, programmes and chronic pain services capable of providing a broad range of interventions and therapies and the highest level of care. In addition, pain services may also offer regional/national patient or programme consultation and staff training. The disadvantage of such a set-up is that it is highly resource intensive.

**Pain networks**

Although a relatively new undertaking, several countries have witnessed the emergence of professional pain networks in recent years. By promoting the development
of partnerships between primary care physicians and other healthcare professionals with expertise in the management of chronic pain, the networks aim to provide community physicians with support and training and improved access to specialists who can assist in patient management. Examples of pain networks include the Nova Scotia Chronic Pain Collaborative Care Network in Canada, the Réseau Douleur in France, the Association of Chronic Pain Patients [ACPP] and Let’s Combat Pain [LCP]. The Nova Scotia Chronic Pain Collaborative Care Network, which began as a pilot project in 2008, enables chronic pain management experts to be teamed up with primary care practitioners to provide clinical expertise and mentoring [NSCPCCN 2011]. The French network, Réseau Douleur, links primary care physicians with physiotherapists, psychologists and nurses [Réseau de la douleur l’ouest]. The ultimate goal of pain networks is to increase the capacity of healthcare systems to manage chronic pain, thereby providing improved pain management to patients.

Key learning points
- There are different models for secondary care pain referral services (see IASP models: unidisciplinary pain practices, pain consultation teams, multidisciplinary programmes and pain services)
- All of these models offer specialist treatment approaches specifically tailored for the management of chronic pain
- Promoting the development of partnerships between primary care physicians and other healthcare professionals with expertise in the management of chronic pain, the networks aim to provide community physicians with support and training and improved access to specialists who can assist in patient management

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   http://communitypainnetwork.com/about/

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   www.reseaudouleurouest.com/
Glossary of terms

- Autosuggestion: A process of suggestion in which the person unconsciously supplies or consciously attempts to supply the means of influencing his own behaviour or beliefs

- Biopsychosocial: Relating to, or concerned with, the biological, psychological and social aspects, in contrast to the strictly biomedical aspects of disease

- Cognitive behavioural therapy: A psychotherapeutic therapy that pays particular attention to a patient’s behaviour and thinking processes rather than underlying psychological causes of an activity

- Communication: A two-way process of reaching mutual understanding, in which participants not only exchange information but also create and share meaning

- Evidence-based guidelines: Systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances

- Healthcare reimbursement: A pay-out made by healthcare insurance companies to policyholders or directly to their healthcare provider for expenses incurred for medical treatment

- Neuropathic pain: Pain initiated or caused by a primary lesion or dysfunction in the nervous system

- Nociceptive pain: Pain that is caused by the presence of a painful stimulus, natural or chemical, able to activate nociceptors (free nerve endings)

- Tolerance: A decrease in susceptibility to the effects of a drug due to its continued administration
Author biographies

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Publication history: Dr Pergolizzi has over 100 scientific papers and projects either presented or published, and is the Editor-in-Chief of The Clinical Researcher, an editorial board member/reviewer for many scientific journals including JAMA, Pain Practice, Experimental Medicine, The Scientific World Journal of Anesthesia, Journal of Medicine, and the American Journal of Managed Care, and an invited feature editor of Pain Medicine.

Societal responsibilities: Dr Pergolizzi is the co-founder and Chairman of the Board for the Association of Chronic Pain Patients, serves on the board of directors for the Coalition for Pain Education (COPE), is co-founder of the International Pain Research and Treatment Foundation, and a member of the board of directors of the National Institute of Pain. He is a faculty member of The Primary Care Institute’s pain medicine educational initiative, Chairman of the Working Group in Pain Medicine and a steering committee member of the FDA’s Safe Use Initiative focusing of drug safety in the elderly.

Expertise: Dr Pergolizzi is an internationally recognised expert in pain medicine, anaesthesia, internal medicine, clinical research and drug discovery.

Frank Huygen

Affiliation: Erasmus MC University Hospital Rotterdam, The Netherlands.

Publication history: Dr Huygen has published 65 peer-reviewed Pubmed-indexed full papers and more than 100 published nonpubmed-indexed abstracts, articles and book chapters. He is also a co-editor of four books. He is a regular reviewer for international journals and is a member of the editorial board for Pain Practice.

Societal responsibilities: Dr Huygen is appointed as Extraordinary Professor in anaesthesiology and pain medicine at the Erasmus University of Rotterdam. He is the past elected president of the Dutch Anaesthesia Pain Society and Chairman of a national disease management pro-
gramme on neuropathic pain. He is Chairman of the Dutch Guideline Commitee on Mechanical Low Back Pain, is also a member of several national and international advisory boards on pain and pain treatment and has been and is currently involved in the organisation of several national and international symposia and congresses on pain.

**Expertise:** Dr Huygen is Head of the Pain Treatment and Research Center, a multidisciplinary pain clinic specialising in acute, chronic noncancer and oncologic pain and palliative care. He is certified for complex invasive pain treatment modalities such as neuromodulation and epiduroscopy and is especially interested in complex regional pain syndrome from a clinical and scientific point of view.

**Bart Morlion**

**Affiliation:** University Hospitals Leuven, Katholieke Universiteit, Leuven, Belgium; Director of the Leuven Centre for Algology & Pain Management.

**Publication history:** Dr Morlion has authored a number of primary manuscripts, reviews, books and book sections, and is a regular reviewer for several international journals. He has given more than 300 international and national invited lectures and seminars on pain management and clinical nutrition.

**Societal responsibilities:** Bart Morlion is President of the Belgian Pain Society – the Belgian Chapter of the International Association for the Study of Pain (IASP) and represents Belgium as councillor in EFIC – the European Federation of IASP Chapters. He steers the Organizing Committee of the Belgian Interuniversity Course of Algology and is also an active member of several committees in international scientific societies.

**Expertise:** All aspects of multimodal chronic pain management, analgesics and quality management. Dr Morlion’s clinical research focuses on the pharmacological treatment of chronic pain and organisational aspects of multidisciplinary pain management.

**Magdalena Kocot-Kępska**

**Affiliation:** Poradnia Leczenia Bólu, Szpital Uniwersytecki, Kraków, Poland.

**Publication history:** Dr Kocot-Kępska has over 20 articles published in scientific journals and has given over 30 lectures at congresses. She is also a co-author of the textbook ‘Medycyna bólu’ published in 2011.
Societal responsibilities: Dr Kocot-Kępska is a secretary of the Polish Pain Society (Polish Chapter of IASP). She is also a member of national advisory boards and foundation on pain and pain treatment and is involved in the organisation of several national and international symposia and congresses on pain.

Expertise: Dr Kocot-Kępska works in the Department of Pain Research and Treatment, a multidisciplinary pain clinic specializing in acute, chronic noncancer and cancer pain, cooperating with Institute of Pharmacology of Polish Academy of Sciences. She has a special interest in neuropathic pain treatment, and experimental studies of pain mechanisms and treatment.

Andrew Nicolaou

Affiliation: St Georges Hospital, London, UK.

Publication history: Dr Nicolaou has lectured both nationally and internationally on a variety of topics, in particular evidence-based pain practice and pain education and training. He has authored a number of articles and abstracts and also reviewed pain material for a number of journals.

Societal responsibilities: Dr Nicolaou is a regional advisor (Pain) to the Royal College of Anaesthetists, Chairman of the Pan London Pain Advisory Group, Assessor for the Board of the Faculty of Pain Medicine of the Royal College of Anaesthetists, and Trustee of the Specialists in Pain International Network charity. He also represents pain medicine as a board member of the London Academy of Anaesthesia.

Expertise: He is lead clinician for the Chronic Pain Service and heads pain research. This is in a multidisciplinary pain centre, with its own in-patient pain management programme, in a large teaching hospital. He has a special interest in interventional pain techniques, particularly using ultrasound guidance.

Eli Alon

Affiliation: University of Zurich, Pain Control Unit, Zurich, Switzerland.

Publication history: Dr Alon is author of 10 books and proceedings, 58 original articles, 29 review articles, 45 book chapters and over 130 abstracts. He is Editor of Schmerz and former Editor of European Journal of Pain, Obstetric Anesthesia Digest, Pain Clinic, Acta Anaesthesiologica...
Societal responsibilities: Dr Alon is the Professor of Anaesthesiology and Pain Medicine at the University of Zurich, Director of a multidisciplinary pain control unit, Executive Board Member (Honorary Treasurer) of EFIC, former Chairman of the Anaesthesia Department in Lugano, Past President of the Swiss Association for the Study of Pain, and former President of the European Society of Obstetric Anaesthesiology. He has been an invited speaker at over 100 national and international congresses and has organised 25 national and international congresses and meetings.

Expertise: Dr Alon specialises in anaesthesiology and pain management, including pharmacological, interventional and interdisciplinary management. He treats acute and chronic, cancer and noncancer pain.

Philippe Mavrocordatos

Affiliation: Clinique Cecil, Lausanne, Switzerland; University Hospital, Geneva, Switzerland; Mahidol University, Thailand.

Publication history: Dr Mavrocordatos has over 40 scientific papers and projects either presented or published and is a reviewer for *Pain Practice* and *Neuromodulation*. He has given over 60 lectures at congresses and his pain management center received, in 2011, the Excellence in Pain Practice Award for Multidisciplinary Clinical Pain Practice.

Societal responsibilities: Dr Mavrocordatos is President of the Swiss Society of Interventional Pain Management, Chairman of the World Institute of Pain for Switzerland and President of the Pain Foundation. He is also a member of several national and international advisory boards on pain and pain treatment. Since 2009, he has been the organiser and chairman of the Swiss National Congress on interventional pain management and has been involved in the organisation of several national and international symposia and congresses on pain. He is a Fellow of Interventional Pain Practice (FIPP) and examiner of the FIPP since 2007.

Expertise: Dr Mavrocordatos is an expert in chronic pain management with a special interest in interventional treatments. Among other studies, computerised multidisciplinary patient assessment and follow-up is currently the main ongoing project of his group.
Towards a multidisciplinary approach in…

Patrick Sichere

Affiliation: Hôpitaux de Saint-Denis, France; Private Practice, Paris, France.

Publication history: Dr Sichere has over 200 published articles on pain, rheumatic diseases and rheumatology.

Societal responsibilities: Dr Sichere is a member of the CEDR Circle for the Study of Pain in Rheumatology, member of the Société Française de Rhumatologie, Member of The French Association for the study of Pain (SFETD) and teacher for Pain Diploma of CHU Lariboisière-Saint-Louis in Paris, France. Dr Sichere is past President of the French Syndicat National des Médecins Rhumatologues and past member of UEMS.

Expertise: Rheumatology and pain.

Giustino Varrassi

Affiliation: General Manager of ASL_TE, Italy, a public company providing healthcare services to citizens.

Publication history: Prof Varrassi has authored approximately 400 papers published in international and national scientific journals, as well as 43 chapters of books, mainly on obstetric anaesthesia and pain management. Furthermore, he is the editor of 28 books and congress proceedings.

Societal responsibilities: Prof Varrassi is founder of the European Society of Obstetric Anaesthesia (ESOA) and a founding member and immediate past president of the European Federation of IASP Chapters (EFIC), as well as a member of other medical societies. He is a Fellow of Interventional Pain Practice (FIPP) and a Trustee of the World Institute of Pain Foundation.

Expertise: His major field of interest is pain management.

Ana Cristina Mangas

Affiliation: Unidor, Unidade de Tratamento de Dor do Hospital de Santo André, EPE, Leiria, Portugal.

Publication history: Dr Mangas is an author of various papers on pain control, both acute and chronic, and has participated and lectured at several congresses.
**Frances Cole**

**Affiliation:** Part time GP and pain rehabilitation specialist working in West Yorkshire, UK.

**Publication history:** Dr Cole is a co-author of a cognitive behavioural therapy (CBT) self-help guide and is also a co-author of the Pain Toolkit.

**Societal responsibilities:** Dr Cole is currently the chair of the British Pain Society Pain Management Programme Special Interest Group whose current focus is on measuring patient outcomes and Pain Management Programme guidelines review. She also developed a pain health needs assessment tool that won a NHS Modernisation award in 2005.

**Expertise:** Education of primary care practitioners in CBT techniques for both mental health, chronic pain and long-term health condition self management.

**Chris Monella**

**Affiliation:** Dr Monella is Senior Partner and GP with Specialist Interest (GPwSI) at Medwyn Surgery, Dorking, Surrey, UK, providing comprehensive primary care services, back pain service and chronic pain management clinics.

**Publication history:** Dr Monella has published articles in clinical governance, orthopaedic medicine, acupuncture, pain and for GPs with Specialist Interest (GPwSI). He is also currently a member of the Editorial Board for *Clinical Focus in Primary Care*.

**Societal responsibilities:** Continued membership and previous board member of the British Medical Acupuncture Society and the Society of Orthopaedic Medicine. He also plays an active role in the Dorking clinical commissioning group for patient pathway design, service provision and commissioning of services in Surrey, UK.

**Expertise:** The primary care provision includes GP training, health promotion, medical treatment and ongoing follow-up for over 9400 patients, allowing the development of innovative cost-effective, high-quality, community-based pain services seeing over 900 new patients every year.
Cesar Margarit Ferri

Affiliation: Hospital General Universitario de Alicante, Spain, public health system hospital.

Publication history: Dr Margarit Ferri has over 15 articles published in scientific journals and two chapters in medical textbooks, and has given over 50 lectures at national and international pain medicine meetings.

Societal responsibilities: Dr Margarit Ferri belongs to the Spanish Chapter of IASP and ESRA, and has organised the national meeting of ESRA in Spain.

Expertise: Chronic pain treatment with a special interest in opioids and neuropathic pain.

Concepción Pérez Hernández

Affiliation: Hospital Universitario de la Princesa, Madrid, Spain.

Publication history: Dr Pérez Hernández has authored over 100 national and international conference papers, 48 book chapters/monographs and 13 Pubmed-indexed articles in acute and chronic pain.

Societal responsibilities: Dr Pérez Hernández is an active participant in representative pain forums such as SED, SEDAR and ESRA, and is a past secretary of SMD.

Expertise: Chronic pain, particularly neuropathic pain, as well as interventional pain management.