International Association for the Study of Pain

MULTIDISCIPLINARY PAIN CENTER DEVELOPMENT MANUAL

IASP
INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN

Created by the IASP Multidisciplinary Pain Center Toolkit Advisory Group

www.iasp-pain.org/MPCManual

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THE NEED FOR MULTIDISCIPLINARY PAIN MANAGEMENT CENTERS

IASP

The International Association for the Study of Pain (IASP) is the world's largest association of scientists and clinicians dedicated to the study and treatment of pain with more than 7,000 direct members and a network of 95 chapters globally. As a multidisciplinary organization, IASP brings together scientists, researchers, clinicians, healthcare providers, policymakers, and others from diverse disciplines working together towards a shared goal of pain relief worldwide.

Project Mission/Vision

Thanks to an unrestricted grant from Pfizer's Independent Grants for Learning and Change, IASP assembled a diverse group of global leaders to develop this toolkit and training program.

The materials and samples provided in these materials are for the use of the pain community. IASP asks that those using these resources register their Center at the Association's website for the purposes of research and measurement. We also invite your feedback. While this manual was originally developed for South East Asian countries, the information is applicable to other countries with similar resource levels in other regions.

Pain—whether acute or chronic—is a multifactorial condition that has biological, psychological, and social contributors. This is referred to as the biopsychosocial framework.

Pain Clinic versus Center

This manual is focused on the creation of a Multidisciplinary Pain Center. Due to limited resources, the Advisory Group felt that the most efficient way for lower-resource countries to support the development of multiple pain clinics across the country is with the creation of a Multidisciplinary Pain Center that can serve as a "hub" and center of excellence. The Center will provide training and mentoring services that will facilitate the development of new clinical services across each country. Accordingly, this manual focuses on the creation of the Center as a first step towards the development of a network of multidisciplinary pain clinics in each country. (For details about the differences between Pain Clinic and Pain Centers, please see chapter 3, Table 3.1).

In Appendix 1, an example of a Model of Care from the state of New South Wales in Australia provides an illustration of the different levels of pain services that can be provided within a region or country. With this model it is recognized that most people with chronic pain can be managed at their local community level, while a smaller number will need a Multidisciplinary Pain Clinic, and an even smaller number will need the services of a Multidisciplinary Pain Center. This model also envisages that the Multidisciplinary Pain Center will act as a resource for training and research for the more numerous Pain Clinics and health professionals working in Primary Care.

What is pain?

IASP defines pain as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage" [26]. Pain is often described as either acute or chronic.

Acute pain is pain that lasts from a few seconds to three months, and is usually associated with actual or threatened tissue injury.

Chronic pain is pain that lasts or recurs for more than three months, and can last for several years.

Pain—whether acute or chronic—is a multifactorial condition that has biological, psychological, and social contributors. This is referred to as the biopsychosocial framework. How much each domain contributes to a particular patient's pain varies from one patient to another, and over time.

What is chronic pain?

Chronic pain has recently been classified by an IASP task force as either primary (where it is the main presenting problem) or secondary (where it is due to an identifiable underlying cause). This classification has been adopted by the World Health Organization (WHO) for the next version of the International Classification of Diseases (ICD-11). Access this edition and learn more about its development at the **WHO Revision website**. See also Treede 2019 [12] for a summary.

Globally, chronic pain is one of the biggest contributors to the non-fatal burden of disease experienced by populations, with musculoskeletal pain the leading global cause of disability.

Chronic Primary Pain may occur in one or more anatomical regions and it is associated with significant emotional distress (anxiety, anger/frustration or depressed mood) or functional disability (interference in daily life activities and reduced participation in social roles). The diagnosis is appropriate independent of identified biological or psychological contributors unless another diagnosis would better account for the presenting symptoms. That means it can have both biological and psychological contributors. Chronic primary pain is the most common form of chronic pain, and treatment should be focused on reducing pain-related distress and disability, as well as enhancing quality of life.

Examples include Chronic Widespread Pain (e.g. Fibromyalgia); Complex Regional Pain Syndrome; Chronic Primary Headache and Orofacial Pain; Chronic Primary Visceral Pain; and Chronic Primary Musculoskeletal Pain (e.g. low back pain).

Common **Chronic Secondary Pain** conditions have been grouped into six major categories:

1. **Chronic cancer-related pain** is chronic pain that is due to cancer or its treatment, such as chemotherapy.
2. **Chronic post-surgical or post-traumatic pain** is chronic pain that develops or increases in intensity after a tissue trauma (surgical or accidental) and persists beyond three months.
3. **Chronic neuropathic pain** is chronic pain caused by a lesion or disease of the somatosensory nervous system. Peripheral and central neuropathic pain are classified here.
4. **Chronic secondary headache or orofacial pain** contains the chronic forms of symptomatic headaches (those termed primary headaches in the International Classification of Headache Disorders (ICHD-3) are part of chronic primary pain) and follows closely the ICHD-3 classification. Chronic secondary orofacial pain, such as chronic dental pain, supplements this section.
5. **Chronic secondary visceral pain** is chronic pain secondary to an underlying condition originating from internal organs of the head or neck region or of the thoracic, abdominal or pelvic regions. This pain can be caused by persistent inflammation, vascular mechanisms or mechanical factors.
6. **Chronic secondary musculoskeletal pain** is chronic pain in bones, joint and tendons arising from an underlying disease classified elsewhere. It can be due to persistent inflammation, associated with structural changes or caused by altered biomechanical function due to diseases of the nervous system.

Who is affected by pain?

Globally, chronic pain is one of the biggest contributors to the non-fatal burden of disease experienced by populations, with musculoskeletal pain the leading global cause of disability. The **Global Burden of Disease Study** has estimated that during the period from 2006 to 2016, the number of estimated years lived with disability for low back and neck pain together rose by 19.3 percent, a major increase driven by aging of the world's population (see Appendix 2, graphical representations of these data).

Chronic pain is seen in almost all age groups and is strongly linked to older age. The consequences of aging populations as a driver of population pain burden is a particular challenge for the countries of Asia, since the rate of population aging in this region is forecast to be much faster than in developed countries. Asia is predicted to have the greatest increase in numbers of older people in the next few decades. Current estimates suggest that by 2050, around two-thirds of the world's population aged 65 years and over will reside in Asia.

What does the burden of disease from pain look like?

For patients, chronic pain can have wide-ranging negative physical, psychological, and functional effects that leave them unable to participate fully in life. The experience of these effects by patients may be influenced by many factors such as age, gender, education, economic position, cultural factors, and religious and health beliefs.

In addition to the impact of pain on individuals, chronic pain also affects families, communities, workplaces, health systems, and the economy as a whole. Despite very strong and consistent evidence of the impact of pain burden globally, there is a mismatch between burden and resources allocated to acting on the causes of the problem and improving timely access to effective treatments.

In addition to the impact of pain on individuals, chronic pain also affects families, communities, workplaces, health systems, and the economy as a whole.

This mismatch is evident in the lack of availability of or access to comprehensive, multidisciplinary pain management services. In contrast, access to more narrowly-focused attempts to relieve significant and disabling pain through procedures such as nerve blocks and drugs is often easier even though they may do little to ease the burden of persisting pain experienced by patients, communities, and health systems. **Without the necessary training and support, the vision of more comprehensive services will remain unrealized. This toolkit project is intended to address this key obstacle.**

What is multidisciplinary pain management?

Multidisciplinary pain management (MDPM) refers to an integrated approach in which multimodal treatment is provided by a multidisciplinary team collaborating in assessment and treatment using a shared biopsychosocial model and goals. An example is the prescription of an antidepressant medication by a physician alongside an exercise plan from a physiotherapist and training in pain self-management skills from a psychologist. All team members work closely together by participating in regular meetings (in person or online) and agreeing on diagnosis, therapeutic aims, and plans for treatment and review.

More recently, the term **"Interdisciplinary pain management"** has been introduced [27], but we have retained the "Multidisciplinary pain management (MDPM)" throughout the Toolkit as most clinicians are familiar with it and we want to avoid confusion.

MDPM is mostly delivered in outpatient settings, but if resources permit, it can also be employed in inpatient settings. While it is most often used for chronic, non-cancer pain conditions, patients with other types of pain (for example, certain acute pain conditions and cancer pain) can also benefit from multidisciplinary pain management if assessed as suitable.

What problems can be addressed by MDPM?

Specifically, MDPM services can help patients with a range of functional disabilities and suffering associated with pain. These include disrupted activities of daily living, inability to work or care for family members, psychological distress, and sleep disturbance, as well as unhelpful medication dependence.

What are the benefits of MDPM?

MDPM services offer a greater range of options for the health system than any single specialist doctor can provide alone.

MDPM is one of the most efficient and effective ways of helping patients with chronic pain reduce the severity of their pain and its impact on their lives. That is, it can significantly reduce pain-related suffering and disability. There is good evidence that if patients apply the skills learned at an MDPM service they will become much more functional in their daily lives, experience much improved mood, confidence, and sleep. Because MDPM typically promotes self-management of pain by the patient, it can also reduce the likelihood of patients becoming dependent on unhelpful long-term medications as it offers the patients alternative ways of managing their pain.

What evidence supports the use of MDPM?

Evidence supporting MDPM treatments comes from a range of sources published since the 1970s. These include randomized controlled trials comparing MDPM treatments with single discipline treatments [8; 23; 24; 25; 17]. Broader support has been summarized in systematic reviews and meta-analyses [4; 5; 10; 21]. There is also supporting evidence from evaluations of MDPM in primary care [3; 7; 11; 13; 20] as well as from narrative reviews [18; 6; 12; 19]. Consistent with the philosophy underpinning these interventions that aim to enable patients with chronic pain to self-manage their pain, there is an expectation (and some evidence) that those who regularly apply the self-management strategies taught in MDPM treatments improve more than those who do not [15]. There is also evidence that these differences can last at least a year [16]. While most of the published studies have been conducted in Europe, North America, and Australia, these methods have also been shown to be effective in other regions, including Southeast Asia. Cardosa et al [1] reported significant improvements among 70 chronic pain patients who were monitored for one year post-treatment. This study was conducted in Kuala Lumpur (Malaysia), describes the work of local health professionals, and was delivered in multiple local languages.

Purpose and Scope of the Toolkit

VISION: To improve the lives of people affected by pain in Southeast Asia and beyond

MISSION: To increase capacity in delivering interdisciplinary pain management and treatment in Southeast Asia

GOALS: To provide local clinical leaders in pain management with the knowledge, skills, and training to establish Multidisciplinary Pain Centers (MPCs) based on interdisciplinary models of care in Indonesia, Myanmar, and Vietnam by late 2020.

PROJECT HISTORY: In 2017, IASP launched a multi-year project to develop a “toolkit” and related training that would encourage and help health care providers in Southeast Asia develop multidisciplinary pain centers to better assess and manage chronic pain. The healthcare systems of the three targeted countries— Vietnam, Indonesia, and Myanmar — historically have not widely adopted multidisciplinary approaches to pain, which IASP and pain researchers have concluded are most effective for pain management and treatment.

With funding from Pfizer’s Independent Grants for Learning and Change, IASP formed an international Multidisciplinary Pain Center Toolkit Advisory Group that included two representative leaders from each country’s pain communities. In 2018, the group first gathered in Malaysia to learn more about the countries’ pain management needs, challenges, opportunities, and health care environments. The greater local understanding enabled them to create a toolkit framework, assign further development tasks to small groups, and organize the project phases of this multi-year project.

The group communicated virtually and met again in person in September 2018 at the World Congress on Pain to identify content gaps, continue drafting the toolkit, and receive updates on multidisciplinary pain management progress from the country representatives. In January 2019, a subgroup met in Malaysia and produced the first draft of all Phase 1 content. IASP edited the draft and coordinated preliminary review by external pain experts. After additional collection of appendices and another edit, the draft was shared for review by the full advisory group.

In April 2019, the full advisory group met at the Association of South-East Asian Pain Societies (ASEAPS) Congress in Kuching, Sarawak, Malaysia, to discuss and finalize the beta version of the toolkit to be used for training health providers in Vietnam, Indonesia, and Myanmar. Training took place in Myanmar in August 2019. Trainings in Vietnam and Indonesia were to take place in 2020 but have been put on hold due to the COVID-19 pandemic.

Phase 2 content development will continue after the initial training, when testing with local providers allows for more refinement and expansion. Pending toolkit sections include working with patient

advocacy groups, revising strategies for enhancing providers' ability to implement pain self-management strategies for patients, and options for partnering with government agencies, nonprofits, and academic institutions. The project also may evolve to include a global registry for data collected from these and other Multidisciplinary Pain Centers worldwide.

Summary

The key messages of the introduction are

- Pain is a multi-dimensional phenomenon with biological, psychological and social/environmental contributors and should be assessed and treated using this framework.
- Pain is an important cause of health burden to patients, communities, and health systems.
- Effective treatment using a multidisciplinary approach will reduce the burden on individuals by maintaining and maximizing their ability to function and enjoy life.
- Using the right treatment for the right patients will lead to more-appropriate use of limited health system resources [2, 7].
- The right treatment may be delivered at the local community level for relatively low cost once the knowledge and skills required are adequately disseminated [11].

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2

MULTIDISCIPLINARY PAIN MANAGEMENT CENTER PERSONNEL

Introduction

Rather than simply specifying which professional disciplines are required, the expert advisory group recommends that it is more practical to describe the main roles, capabilities, and tasks required from the participating health professionals (see Table 1).

Broadly, at least one member of a pain center needs to be able to assess and guide appropriate treatments for biological pathologies, and another member needs to be able to assess and treat psychological contributors to pain presentations. Other staff should be able to provide advice on exercises and activity upgrading. All staff should be able to provide basic education about pain in ways that are appropriate and make sense to the patients being treated. In many instances, these roles may overlap, but they all require coordination and planning. This means that attention needs to be given to how this will be achieved and who will be responsible for its oversight. It is critical that all members of the team work together in an interdisciplinary manner.

In this section, we describe the most common professional composition of the Multidisciplinary Pain Center (MPC) but recognize that the actual personnel available will vary across centres and countries.

Personnel

Adequate staffing is a critical part of a successful MPC. The collaborative and united approach of diverse personnel go beyond what many Southeast Asian health facilities typically offer. Achieving the recommended mix of staff may take time and patience, and will require a willingness to be flexible and to be open to compromise.

Below is a recommended list of both required and optional staff to operate an MPC. Founders of an MPC can begin with core required staff and add to their resources as their Center grows. Core required staff are indicated by an asterisk (*). Examples of position descriptions for core required staff are available as Appendix 3.

1. **A lead physician* in one of the disciplines listed below is essential.** The physician must be interested and trained in managing patients with pain. Apart from the lead physician, the center should ideally have at least one other physician from any of the listed disciplines and should also have access to expertise as needed in relevant disciplines.
   a. Anesthesiology
   b. Rehabilitation medicine
   c. Psychiatry
   d. Surgery
   e. Primary care
   f. Rheumatology
   g. Neurology
   h. Palliative care

2. **Access to other health professionals in the following skill areas is also essential:**
   a. Physiotherapy or occupational therapy*
   b. Clinical psychology*
   c. Nursing *
   d. Pharmacy
   e. Social work

3. **Office support/clinical administration*:**
   This may be a person with several responsibilities, and may be described as a secretary, receptionist, Center clerk.

4. **Research personnel**
   Interested researchers or students from a local university may be available to participate in collaborative projects.

Roles, Skills, Clinical and Administrative Tasks

The main roles, tasks, and required skills for the Center staff are summarized in Table 1. The table is intended as a guide rather than a prescription. Each Center will need to consider its priorities and the resources available in deciding which mix will suit it best.

Recommended Prerequisites for All Personnel

The main objectives in this section are to ensure staff competency in the biopsychosocial assessment and management of pain. It is anticipated that if all staff can achieve a reasonable degree of competency in the skills and characteristics outlined in this section it will greatly improve the effectiveness of the MPC.

Achieving the recommended mix of staff may take time and patience, and will require a willingness to be flexible and to be open to compromise.

Desirable characteristics for MPC personnel:

1. Understand the main objectives of the MPC and act accordingly.
2. Commit to working as a member of a multidisciplinary team
3. Understand the contribution of psychosocial issues to chronic pain.
4. Show empathy to all patients.
5. Possess and use effective communication skills.
6. Understand and respect cultural norms in their respective communities.
7. Participate in continuing professional development.
8. Commit to ethical clinical practice

Core competencies recommended for all clinical personnel

It is strongly recommended that all clinical personnel should feel competent in teaching patients pain self-management skills. Some personnel will have a high degree of competence, but all personnel should feel confident in their ability to augment their specialist skills with guidance and support for appropriate self-management practice by their patients, (See Training section).

The list in **Box 2.1** is a basic set of competencies that can be learned during the intermediate level training course (Devonshire, Nicholas, 2018).

BOX 2.1: Core Competences List
Brief patient assessment and presentation of case formulation
Preparation of patients for pain self-management training
Helping a patient identify and set their own goals for the treatment program
Explaining chronic pain to a patient
Introduction to an exercise circuit and development of regular exercise program
Introduction of activity pacing to patients
Introduce activity planning, upgrading and implementation in daily life
Introduce relaxation training and applications in pain management
Introduce basic problem-solving strategies
Provide guidance in the application of problem-solving skills to pain flare-ups, stress, sleep disturbance, communication difficulties, improving nutrition, and relapse prevention.

** Core required staff*

TABLE 1. Staffing, capacity/skills required, competencies or skills needed (clinical and administrative)

ROLE	CAPACITY/SKILLS REQUIRED	CLINICAL TASKS	ADMINISTRATIVE TASKS
Center Director (Physician)	• Specialist training in pain medicine. Can be from any of the following backgrounds – Anesthesiology, Palliative Medicine, Rehabilitation Medicine, Psychiatry, Neurology, Surgery, Rheumatology, Primary Care. • Training in pain management ideally for one year in another MPC. • Ability to work collaboratively with other members of a team to deliver coordinated treatment plans.	• Comprehensive pain assessment and diagnosis, including additional investigations if indicated • Identification and management of complex co-morbidities. • Multimodal management of acute and chronic pain. • Pharmacological management of pain, including familiarity with the use of non-opioid analgesics, opioids and adjuvants. • Perform pain interventions (e.g. nerve blocks) where appropriate • Work with a multidisciplinary team to deliver medical rehabilitation services. • Discuss the role of all therapies (and their application and integration) • Provide effective follow-up services to promote maintenance of treatment gains • Liaise with other treatment providers co-managing the same patients	• Leadership, organization and support for the multidisciplinary team • Management of delivery of pain services • Support/initiate research • Evaluation and reporting outcomes to relevant parties • Source funding for the MPC
Medical management (Physician)	• Specialist training in pain medicine. Can be from any of the following backgrounds – Anesthesiology, Palliative Medicine, Rehabilitation Medicine, Psychiatry, Neurology, Surgery, Rheumatology, Primary Care. • Training in pain management for at least 3-6 months • Ability to work in an interdisciplinary manner to deliver coordinated treatment plans.	• Comprehensive pain assessment and diagnosis, including additional investigations if indicated. • Identification and management of complex co-morbidities • Multimodal management of acute and chronic pain • Pharmacological management of pain, including familiarity with the use of non-opioid analgesics, opioids and adjuvants. • Perform pain interventions (e.g. nerve blocks) where appropriate • Work with a multidisciplinary team to deliver medical rehabilitation services. • Discussion of the role of all therapies (and their application and integration) • Provide effective follow-up services to promote maintenance of treatment gains • Liaise with other treatment providers co-managing the same patients	• Participate in the multidisciplinary team discussions on patient management • Support/initiate research • Evaluation and reporting of outcomes to relevant parties

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TABLE 1. Staffing, capacity/skills required, competencies or skills needed (clinical and administrative), *continued*

ROLE	CAPACITY/SKILLS REQUIRED	CLINICAL TASKS	ADMINISTRATIVE TASKS
Clinical Psychologist or Psychiatrist	• Psychiatrist or Clinical Psychologist with at least 3 months of training/experience in managing patients with pain • Ability to work in an interdisciplinary manner to deliver coordinated treatment plans. • (Note: Some of the roles may be provided by a trained social worker, occupational therapist, physical therapist, or nurse with experience in managing patients with pain)	• Assess pain and psychological contributors to patients' presenting problems • Assess patients' psychological co-morbidities and need for referral to a mental health service where appropriate • Teach self-management strategies for pain, including relaxation techniques • Deliver psychological therapy to individual patients and their family members • Deliver cognitive behavioral therapy group programs including patients and their families	• Participate in the multidisciplinary team discussions on patient management • Evaluation and reporting of outcomes to the primary team and external agencies • Research planning, implementation, and reporting
Physiotherapist or Occupational Therapist	• Qualified Physiotherapist or Occupational therapist with at least 3-months of training/ experience in managing patients with pain. • (If both a physiotherapist and an occupational therapist are on staff, the physiotherapist focuses on the physical aspects and the occupational therapist focuses on the functional / work related aspects of management)	• Assess pain and its impact on physical function and tolerances • Diagnose and plan treatment for self-management of pain • Deliver rehabilitation program (including exercises) and physical therapy in partnership with the multidisciplinary team • Workplace assessment and recommendations for return to work where appropriate	• Participate in the multidisciplinary team discussions on patient management • Evaluation and reporting outcomes in relation to physical tolerances and disabilities • Research participation
Nurse/Assistant Nurse	• Registered / assistant nurse with experience in working with patients with chronic pain	• Triage patients in pain • Manage appointments for new assessments and follow up • Pain assessment and monitoring progress during and after treatment • Educate patients on medication issues and assist in planning medication changes • Contribute to training of patients in pain self-management, including group and individual sessions • Liaise between patients and other MPC team members. • Coordinate group pain management program as part of the multidisciplinary team	• Participate in the multidisciplinary team discussions on patient management • Evaluation and reporting outcomes • Research participation

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TABLE 1. Staffing, capacity/skills required, competencies or skills needed (clinical and administrative), *continued*

ROLE	CAPACITY/SKILLS REQUIRED	CLINICAL TASKS	ADMINISTRATIVE TASKS
Administrative Support/Clerical	• Clerical staff / Senior Nurse with experience in administration • (this role can be combined with the role above)	• Manage appointments for new assessments and follow up • Prepare reports on clinic activities • Answer enquires by patients and referring doctors about the pain service, including provision of information about the service	• Maintain records and administrative duties, including appointment-making, database management • Liaise with other hospital departments
Pharmacist	• Qualified pharmacist with experience in working with patients with chronic pain • Knowledge of the pharmacology and side effects of medications used in managing chronic pain • Awareness of patients' complex co-morbidities and provision of advice on possible drug interactions	• Counsel/educate patients in medication use to improve adherence to regimen • Partner with the team to manage pain in an interdisciplinary manner • Dispense pain medications prescribed by the doctor.	• Participate in the multidisciplinary team discussions on patient management • Evaluation and reporting outcomes • Ensure availability of necessary pain medications • Research participation
Medical Social Worker	• Ability to provide guidance on social / health system support, and financial help for patients as needed	• Assess and advise multidisciplinary team on patients' family issues and social circumstances that may affect the management of their pain • Coordinate home health care, medical equipment, transportation, and related activities to support the successful maintenance of pain service outcomes • Advocate for patients' access to health and social services	• Evaluation and reporting outcomes • Research participation
Research Assistant	• Provide support for research and evaluation activities at Center	• Coordinate with multidisciplinary team in evaluating progress of patients in clinical research/evaluation activities	• Collect and enter Center data into an established database, ensuring protection of patient confidentiality • Basic statistical evaluation of data relevant to research/evaluation projects

Training for MPC Staff

Training in interdisciplinary pain management should take a layered approach, starting with entry level (basic pain management concepts and skills), intermediate level (sufficient for active participation in an MPC) and advanced level skills (required for development and supervision of training for other health professionals). Intermediate-level training is mandatory for those working in an MPC as part of preparation for establishing a Center.

The first task for each center is to identify which health care professionals to train in pain management and at which level to start.

The first task for each center is to identify which health care professionals to train in pain management and at which level to start. Ideally, all those who deal with patients in pain in a hospital should have at least basic level knowledge and skills in this work. In the first instance, in the absence of formal training, the MPC personnel should act as models for other hospital staff.

Entry-level Training

Foundational entry-level training should be mandatory for all those intending to work in an MPC. It is also desirable for those interested in referring patients to the Center, as well as for relevant hospital administrators. Ideally, all frontline hospital staff should participate in entry-level training over time.

This training may be delivered by a local leader who has been trained by the IASP Multidisciplinary Pain Center Toolkit team. It is also recommended that a member of the IASP team should be present, at least initially, to assist in the implementation stages.

Recommended training for this level should include:

1. Essential Pain Management (EPM) /EPM-lite: *4 to 8 hours* (See **Appendix 4** for more information)
2. Model of care: A description of multidisciplinary care working in an interdisciplinary style: *1 hour*

Intermediate-level Training

Intermediate-level training is mandatory for those working in an MPC. The personnel must have successfully completed all the relevant courses described below, as conducted by members of the IASP Multidisciplinary Pain Management Center Toolkit team.

Centers should support training for all personnel to achieve competence in the following tasks:

1. **Clinical assessment of pain:** generic and discipline-specific, *2 to 4 hours*
2. **Case formulation** (included in number 4 below)
3. **Pain management-pharmacological** (prescribers need to have more in-depth knowledge of drugs, side effects, indications / contraindications, dosages and how to titrate to effect, while non-prescribers only need a superficial knowledge of this): *4 to 8 hours*
4. **Pain management-non-pharmacological:** Training in ways of teaching pain self-management. Competency evaluation via two options:
   a. **Face-to-face workshops** *(30 to 40 hours over four to five days)* with observer-rated assessment of skills in role-playing at the end of the workshop, followed by *20+ hours* of clinic-based practice with online follow-up with members of the IASP team as arranged.
   b. **Online interactive webinar training** (*9 hours of weekly 90-minute sessions* with a total of *20 to 30 hours of clinic-based practice* between sessions)
5. **Follow up consolidation and support** – online options, mentoring, supervision – by local experts with advanced level training and/or external experts including workshop faculty. This can also be provided online. Examples include Project ECHO [1] and Continuing Online Professional Education, University of Sydney [2]

Advanced-level Training

Advanced-level training is mandatory for Center personnel working in leadership roles within their professional disciplines in an MPC. Consistent with the proposed "hub and spokes" model for developing country-wide multidisciplinary pain services, IASP expects that these individuals will take on training roles within their country. Leaders would build capacity by developing other MPCs within their country, and the original IASP MPC Toolkit team would no longer be required for this role. However, an extended mentorship could be offered to the local leaders by members of the IASP team, possibly by a series of online sessions to minimize costs and disruptions.

All trainers must have successfully completed the relevant courses outlined below, as conducted by members of the IASP Toolkit team. Recommended participants in the training include the following:

- **Mandatory:** Train-the-Trainer course delivered either face-to-face or via a series of interactive webinars. The face-to-face workshop would be *20 to 30 hours over three to four days* while online webinar training would be *9 hours over six weekly or fortnightly sessions.* Both would require clinic-based practice between sessions (for the webinars) or following the face-to-face workshop: *20+ hours over six to twelve weeks*).
- **Desirable:** In addition to the mandatory training, participants should complete an observation period at an existing MPC. The period should last *at least one week* but preferably longer.
- **Desirable:** In addition to mandatory training, if feasible, it is recommended that participants experience further specialist training in pain management consistent with their professional discipline *(3 to 12 months)*. If the lead physician already has a Masters-level pain management degree this can be reduced to 1-3 months.

Cost Issues

Face-to-face training is more expensive than online training due to travel and accommodation costs. Face-to-face training would require local fundraising to cover these costs.

Webinar training would require access to the internet and a computer with audiovisual capabilities. A small fee may be associated with the cost of the trainer and assisting technician, to be negotiated later, and no travel or accommodation costs would be incurred.

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3

MULTIDISCIPLINARY PAIN MANAGEMENT CENTER SERVICES AND FACILITIES

Treatment services

Treatment facilities can be classified into several types (see summary in **Table 3.1**). The different types of pain treatment facilities mostly reflect the health system in which they operate and the nature of the funding available to support the services.

This Toolkit is intended primarily for Multidisciplinary Pain Centers (MPCs) which will develop capacity to offer a range of services, including service delivery, training for other pain services within their country, and research. However, regardless of the type of clinical service involved, the skills and roles outlined in the toolkit are still very relevant to clinicians of all disciplines working with chronic pain patients.

Table 3.1. Classification of pain treatment facilities.

CHARACTERISTICS	UNIMODAL PAIN CLINIC	MULTIMODAL PAIN CLINIC	MULTIDISCIPLINARY PAIN CLINIC	MULTIDISCIPLINARY PAIN CENTER
Center Staff				
• Pain Medicine Clinician • Pain nurse • Mental health professional (Clinical psychologist, psychiatrist) • Physiotherapist/Occupational Therapist	1	1-2 1 nurse	3-4 disciplines (e.g. Medical, nursing, psychology, physiotherapy)	All 4 disciplines working in an interdisciplinary style
Clinical services				
Pain modalities offered	Single (e.g. medications and/or nerve blocks/procedures only)	Several (e.g. meds, procedures, TENS, education)	Multiple (e.g. Meds, Procedures, TENS, exercise, counselling, cognitive-behavioral therapy, self-management skills training, education)	Multiple (all of the previous, plus group programs in self-management)
Pain assessment	Mainly medical (biological)	Mainly medical (biological)	Comprehensive, biopsychosocial, with as needed case conferences	Comprehensive, biopsychosocial, with regular case conferences
Pain Conditions				
Pain conditions treated	Often only single organ-system/site (e.g. joints, headache, spine, etc.)	Broad range of pain conditions, different organ-system/ sites, mechanisms	Broad range of pain conditions from different organ-systems, sites, mechanisms, more complex cases	Broad range of pain conditions from different organ-systems/sites. mechanisms, more complex cases.
Education and Training for health care professionals				
Educational activities offered for health care professionals	No	Yes/No	Yes/No	Yes
Pain management skills training for different health professionals	No	No	No	Yes
Research				
	No	Yes/No	Yes/No	Yes

TABLE 3.2:

Team	Characersitics
Intra-disiplinary 	• Provide unimodal and multimodal treatment • Involves members of the same discipline • Tend to treat and view patients as a compartmentalized entity • Not ideal for chronic pain managment
Multi-disiplinary 	• Provide unimodal and multimodal treatment • Involves members of different disciplines • Work separately on their respective therapeutic aims • Do not necessarily communicate with each other
Inter-disiplinary 	• Provide unimodal and multimodal treatment • Involves members of different disciplines • Work closely with regular team meetings • Align on diagnosis, therapeutic aims, and treatment plans • The model outlined in this manual follows this approach.

Typical Range of Services Provided in MPC

1. Triage for suitability
2. Assessment (by different disciplines, including case formulation)
3. Treatment planning (case conferences)
4. Individual treatments (may include family members)
5. Group treatments (often include family members)
6. Outcome report and recommendations for each patient

Facilities: Recommendations and Growth Anticipation

The following recommendations are for the ultimate goal of an ideal MPC. To start, most centers will have to make use of available resources. Center space may need to be shared with other services and the Center may only operate 1-2 days per week. Rooms large enough for groups may also be limited and only accessible for a few hours a week (e.g. a Physiotherapy Department gym or exercise area may be accessible for group pain management sessions when not required by the Physiotherapy Department).

The recommended (ideal) facilities include:

1. **Space:** Access to three consulting rooms, reception area, waiting room for patients, washrooms, staff meeting room, staff pantry, large group room (suitable for group exercises), store room, procedure room with a recovery area, file room. (See Appendix 6 for Model Clinic Layouts)

2. **Utilities:** Internet access and technological capabilities; office supplies including a photocopier

3. **Equipment and materials:**
   a. Offices/consulting rooms: computers, telephones
   b. Group Program Room: exercise mats, stationary exercise bikes, whiteboards in groups, steps and chairs for physical therapy exercises, small weights, video recording equipment (can be smartphone, tablet, etc.) and screen for replays
   c. Procedure room: PCA pumps, bed or gurney for blocks, ultrasound machine (optional), Fluoroscopy C-arm (optional), syringe pumps, monitoring equipment, oxygen supply, IV stands, light box, sterile packs, prep materials, scrub area.

4. **Medicines** (see Appendix 7)

4

EVALUATIONS AND MEASUREMENTS

Patient Outcomes and Satisfaction

The primary purpose of outcome evaluation is to help improve services and outcomes for patients with chronic pain conditions. Since pain is conceptualized as a multidimensional phenomenon, the evaluation of treatments for pain needs to reflect—at minimum—changes to the key domains of pain quality (severity, extent), pain-related distress and emotional functioning, and pain interference in daily activities.

Since pain is conceptualized as a multidimensional phenomenon, the evaluation of treatments for pain needs to reflect—at minimum—changes to the key domains of pain quality (severity, extent), pain-related distress and emotional functioning, and pain interference in daily activities.

Other outcomes that are more specific may also be considered in particular populations. These may include changes in the use of certain medications, behavior changes such as resumption of valued activities (e.g., return to work), and improved quality of sleep. In addition, Centers may evaluate patient satisfaction with treatment services. Such evaluations should primarily examine service delivery factors such as cost, convenience, accessibility of services, and waiting times at the Center.

Broad Principles

1. Assessment of outcomes should be voluntary for patients, and the instruments used should not place undue burden on patients.
2. Assessment of outcomes should include self-reports by patients, using validated and reliable measures translated into their own languages where possible.
3. Patients should complete the self-report measures before and after treatments in order to determine if meaningful treatment changes have occurred.
4. Where possible, Centers should encourage follow-up evaluations to determine if any treatment effects are maintained.
5. Centers should record clinical metrics. These include patient wait times at the Center, number of patients assessed and treated, number of Center visits for treatment, and the nature of treatments provided.
6. Each Center should establish and actively use a secure, computerized database to maintain a record of all assessment data for each patient.

Dimensions and Possible Measures for Outcomes

Numerous outcome measures are available for each domain, but ideally, the pain services in each country or region should agree to use the same measures that widely accepted. This will enhance their ability to benchmark outcomes and help improve the outcomes achieved by all pain services.

It is beyond the scope of this manual to describe all possible measures (see **Appendix 8** for suggested scales), but reviews of many have been published in PAIN. For example, a consensus review of self-report measures suitable for clinical trials [4] has been widely cited, but its utility in routine clinical practice requires additional considerations (see principles above) [5]. The British Pain Society has also published a list of recommended measures [1].

A clinical practice example is the **ePPOC (electronic Persisting Pain Outcomes Collaboration)** approach used in Australia and New Zealand [16]. The Australia and New Zealand faculty of pain medicine at the Pain Societies of Australia and New Zealand reached agreement on a core set of measures for all pain services in those countries. The measures include: the **Brief Pain Inventory (BPI)** [3], including two sub-scales: one assessing pain severity and the other the degree of pain interference in daily activities; the **Depression Anxiety and Stress Scales (DASS)** [10] assessing these domains; pain beliefs assessed by the **Pain Self-Efficacy Questionnaire (PSEQ)** [11]; and the **Pain Catastrophizing Scale (PCS)** [14]. Normative data on more than 13,000 chronic pain patients using the ePPOC measures in Australia and New Zealand were recently published [12].

Pain severity

Potential measures for pain severity include a **Numerical Rating Scale (NRS)** using a 0-10 scale, where 0 equals no pain and 10 equals the worst pain imaginable, and a **Visual Analogue Scale (VAS)**, which employs a 10-cm horizontal line with similar anchor points to the NRS. The BPI includes four scales that assess the current intensity of pain (0-10), as well as at its least, worst, and average during the past week. Scores of each of the four items are averaged to provide a total pain score. Centers can also use the **Faces Pain Scale (FPS)** [7] for children.

Pain Interference (pain-related disability)

If resources are limited, a basic set of measures that would be generally applicable could include the following:

- Pain Interference subscale of the **BPI** [3]
- Pain Interference scale of the **Multidimensional Pain Inventory (MPI)** [9]
- **Pain Disability Index (PDI)** [15]

Scales for site-specific pain interference include the **Roland Morris Disability Questionnaire (RMDQ)** [13] and the **Oswestry Disability Index (ODI)** [6] for back and the **Neck Disability Index (NDI)** [18] for neck pain.

A recent consensus review of the assessment of physical function by Taylor et al. [17] provides guidance on both self-report and behavioral measures for this domain. For example, the researchers did emphasize the importance of selecting specific measures for different groups of patients, rather than a single scale for all. Behavioral measures or performance (e.g., walking time, sit-to-stand repetitions, number of steps) may be suitable but only in those patients where these are limited by pain. New technologies are making these easier to record (e.g. smartphones).

Emotional functioning (mood and anxiety)

Dworkin et al. [5] recommend the **Beck Depression Inventory (BDI)** and the **Profile of Mood States (POMS)**, but neither seems suitable for use in Southeast Asia. The BDI is subject to a fee, and the POMS is very long (65 items) and would add substantially to patient burden.

Alternative and briefer scales include the **DASS**, which has 21 items and is freely available. Health providers in Malaysia have already used it [2].

The **Hospital Anxiety and Depression Scale (HADS)** [19] is another brief measure that would be suitable for consideration since, like the DASS, it contains no somatic items that can be problematic for patients with physical illnesses.

Another commonly used brief measure of depressive symptom severity is the **PHQ-9** [23]. It has nine items measuring symptoms of major depressive disorder based on the DSM-IV criteria for depression. Higher scores indicate greater severity [20, 23]. There is also a 2-item version [21].

The **GAD-7** [20, 24] is a 7-item measure of anxiety that is used widely in research and clinical settings. It can be used to screen for anxiety disorders and can be scored to assess level of anxiety symptoms.

The PHQ-9 and GAD-7 are often used in clinical and research settings to monitor mood and anxiety levels and as treatment outcome measures.

Both the PHQ-9 and GAD-7 have 2-item short versions with demonstrated validity and utility in screening for mood and anxiety disorders [21].

Cognitive scales (pain-related beliefs)

The use of pain belief scales in Southeast Asia has not been studied, so their use should be treated with caution lest there be misinterpretations. Typically, these include a list of statements, whereby the patient responds on a scale ranging from complete disagreement to complete agreement or from never thinking to always thinking.

The statements are samples, not all thoughts patients have about their pain. However, they have been related to important outcomes including disability, depression, and medication use.

Two cognitive measures that have been translated into a range of languages and have been widely used are the **Pain Catastrophizing Scale (PCS)**, which asses the frequency of common, but unhelpful, beliefs about pain, such as “I worry all the time about whether the pain will end,” and the **Pain Self-Efficacy Questionnaire (PSEQ)**, which assesses the strength of a person’s confidence in their ability to function despite their pain [17]. The PSEQ has been shown to be understood by Malaysian patients with chronic pain [2].

Global Assessment of Outcomes

Some researchers have proposed that a measure reflecting a summary or overall degree of change could be useful. The IMMPACT group recommended the Patient Global Impression of Change (PGIC) scale for chronic pain clinical trials. In this case, the patients rate their improvement on a seven-point scale, where 0 equals "very much worse" and 6 equals "very much improved" [5]. This method, by itself, does not indicate what has improved [22].

Minimum Data Sets (self-reports by patients)

If resources are a problem for these evaluations of treatment outcomes, Centers could turn to another option: collect a minimal data set using basic Numerical Ratings Scales (NRS).

This might include

- Pain severity (NRS: 0-10)
- Pain interference (NRS: 0-10)
- Pain-related distress (NRS: 0-10)

Translated Versions

Some of these scales have already been translated into languages other than English. Where these are not currently available, translations should be sought.

LINKS TO PAIN QUESTIONNAIRES
Brief Pain Inventory (BPI) long
Brief Pain Inventory (BPI) short
Depression Anxiety and Stress Scales (DASS)
Pain Self-Efficacy Questionnaire (PSEQ)
Pain Catastrophizing Scale (PCS)
Numerical Rating Scale (NRS)
Visual Analogue Scale (VAS)
Faces Pain Scale (FPS)
West Haven-Yale Multidimensional Pain Inventory (WHYMPI)
Pain Disability Index (PDI)
Roland Morris Disability Questionnaire (RMDQ) Translations
Oswestry Disability Index (ODI)
Neck Disability Index (NDI)
Beck Depression Inventory (BDI)
Hospital Anxiety and Depression Scale (HADS)
Patient Global Impression of Change (PGIC)
Neck Disability Index (NDI)

(Also see Appendix 8)

Evaluation of Pain Services and Satisfaction

As indicated earlier, patient satisfaction with a clinical service can be useful for evaluating service delivery such as accessibility, cost, convenience, and appointment and service waiting times. This information can help Centers improve the delivery of their pain assessment, treatment, and management services.

Conducting Internal Self-Assessments

In addition to obtaining patient feedback, it is important that Centers monitor some key performance indicators. There are no specific forms for these, but the data can easily be collected and entered on a dataset established for this purpose (e.g. on an Excel file).

Commonly used Center performance metrics:

- **Waiting time** (from referral to attendance at the Center)
- **Numbers of patients assessed** in a set period (e.g., one year)
- **Treatment completions** (number of patients completing treatment and/or discharged in a year)
- **Treatment dropout rate** (percentage of patients withdrawing from treatment in a year)
- **Follow-ups** (percentage of patients completing follow-up measures)
- **Audit of provided treatments and services** (list and number of patients receiving each treatment and/or service)
- Mean, median, and maximum **number of treatment sessions per patient**

Establish and track staff measures

- **Retention of staff** for more than a year along with reasons for leaving
- **Professional development** (numbers and kinds of training undertaken in a year)
- **Satisfaction with work and roles**
- **Recruitment issues** (length of time and amount of effort needed to recruit new staff to the Center)
- **Sick leave taken** within a year and whether illnesses were work-related

Adopt a practice of benchmarking

As the name suggests, benchmarking is a method for evaluating a service according to agreed outcomes (or benchmarks). These outcomes are often the result of discussion between members of a service or several services where they come to an agreement on what a desirable outcome (or outcomes) should be for their services. Ideally, benchmarking MPCs should be done on a regional basis with participating Centers using the recommended minimum data set (above), with ICD-11 Pain Codes recorded and agreeing on a feasible or achievable outcome goal (e.g., patients achieving a 30 percent reduction in pain severity after treatment). Participating Centers should meet regularly (perhaps at an annual meeting and/or at the biennial Congress of the Association of South East Asian Pain Societies (ASEAPS)) to compare and discuss their results relative to the benchmarks.

If this option is available, the Centers could work with a university to establish a regional data hub to collate data collected by the Centers, perhaps presenting a report at the annual reviews. This hub could be used to help Centers learn from each other as part of an ongoing system of quality upgrading. Comparisons could be made for areas such as the following:

- **Waiting time** (from referral to attendance at Center)
- **Numbers of patients assessed in a set period** (e.g., one year)
- **Follow-ups** (percentage of patients completing follow-up measures)
- **Audit of provided treatments and services** (list and number of patients receiving each treatment and/or service)

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5

CASE STUDIES

This series of case studies about the creation and evolution of multidisciplinary pain clinics in developing countries is intended to provide examples of the ideas demonstrated in this manual.

CASE STUDY 1: MALAYSIA

Multidisciplinary Pain Clinic Founder: Mary Suma Cardosa, MBBS, anesthesiologist and pain specialist at Hospital Selayang; 2019 president of the Malaysian Association for the Study of Pain

Background

In Malaysia, the Ministry of Health (MOH) governs the country's national health care system, including management of 153 public hospitals in its 13 states. Each state operates at least one large public hospital, with more-populated areas, such as the Klang Valley, having several. The country also has more than 200 private hospitals.

Both state and private hospitals, accept citizens and non-citizens, but state hospitals charge minimal fees for citizens and higher fees for non-citizens. The level of care in Malaysian hospitals is considered equal to that of many Western countries.

Health care professionals (doctors, nurses, physiotherapists and other allied health professionals) in public facilities are employed by the Ministry of Health (MOH), not by any individual hospital or clinic. This means that they can be assigned to any healthcare facility. When health care professionals are promoted throughout their career in the MOH, they may be re-assigned to new hospitals. This constant movement of personnel can create challenges to medical teams operating any type of clinic or department.

In addition, many health care professionals, especially specialist doctors, leave public hospitals to earn the higher salaries offered by private hospitals [1]. The higher ratio of physicians to patients in private hospitals also means patients may be assessed and treated sooner than at state hospitals, depending on the medical condition, which adds to the competitiveness of attracting patients. That said, private hospitals are concentrated in the cities, and patients who live outside of urban areas have less access to private health care.

The need for high-quality pain care is immense, especially as the country's population ages. An estimated 1 million Malaysians "live with persistent pain, the vast majority (82%) of whom indicated that the pain interfered with their activities," according to the Malaysian 3rd National Health and Morbidity survey [2].

For more information on the Malaysian pain landscape and health care system, see the Ministry of Health website at http://www.moh.gov.my/.

Launching a Multidisciplinary Pain Clinic (MDPC)

When Dr. Mary Cardosa finished her initial training in anesthesiology in 1993, Malaysia had one pain clinic, but it was not multidisciplinary. Not until 1997, when Dr. Cardosa became the first person sent overseas by the Malaysian government for specialized training in pain management, was a multidisciplinary approach to pain clearly understood and seriously considered.

During her year at Royal North Shore Hospital in Sydney, Australia, Dr. Cardosa learned about multidisciplinary pain management (MDPM) from Professor Michael Cousins and his team at the hospital's Pain Management Research Institute, which included Michael Nicholas, PhD, a University of Sydney professor specializing in psychology and pain.

Inspired, upon her return in mid-1998, Dr. Cardosa was determined to set up a multidisciplinary pain clinic (MDPC), but was assigned to two other public hospitals before being reassigned in late 1999 to Hospital Selayang. This was a new facility which was developing new clinical services, so her department head and the hospital leadership were especially receptive when she shared her vision to start the country's second pain clinic onsite.

By June 2000, she had organized and launched the Hospital Selayang Pain Clinic—the first in a Ministry of Health Hospital, and the first in Malaysia to use a multidisciplinary approach to pain assessment and treatment. The clinic operated twice a week and was outpatient only, focusing on patients with either cancer or non-cancer chronic pain. Earlier

in her career, she started the Acute Pain Service in the same hospital, which focused on patients with acute, mainly post-operative, pain.

Dr. Cardosa and her new team (detailed below in Personnel) drew up a list of the types of patients they would see, including referral criteria and prioritization. Cancer pain patients, for instance, would be seen on the next available date, while patients with chronic non-cancer pain were scheduled later. The team circulated the list to all hospital departments and encouraged its doctors and specialists to send appropriate patients to the clinic. These referrals formed the initial pipeline of patients accepted by the new clinic. In addition, referrals were accepted from other hospitals (private and public) around the country, as well as from government and private primary care clinics.

Ideally, the entire team tried to meet on each clinic day afternoon after seeing patients in the morning and calling additional meetings if they needed input from other hospital departments such as rheumatology. In reality, though, uniting all members of the team every day was not always possible. Regular meetings were organized to discuss all new patients seen at the clinic.

PERSONNEL: Recruiting and Managing a Multidisciplinary Pain Clinic Team

Although Dr. Cardosa had submitted a formal proposal to the Ministry of Health outlining the staffing and resources needed to set up a multidisciplinary pain clinic, she initially had to rely on staff from existing departments in the hospital as approval from the MOH (for budget and staffing) could take many years to process.

Using her relationships with other hospital department heads and specialists, strong support of her own Anaesthesiology Department head and the hospital leadership as well as her own professional network and friendships, she successfully recruited a physiotherapist, a psychiatrist, and a nurse to staff the clinic with her twice a week. She did not need clerical assistance, because in Malaysian public hospitals, nurses handle administration such as making appointments, calling

Walking as relaxation for pain management

patients, and collecting data and surveys, in addition to their medical nursing responsibilities.

Also, because the clinic was located in the hospital, patients could use the hospital's pharmacy and registration services for check-in, payments and medication, leaving the clinic free to focus primarily on patient care.

The physiotherapy department head at Hospital Selayang was proactive and supportive in 2000 during the clinic set-up, assigning a dedicated physiotherapist to the clinic. Dr. Cardosa felt fortunate to have such support, which continued through the years. Although all physiotherapists treat patients with pain, many do not differentiate between acute and chronic pain, leading to poor management of patients with chronic pain. Those physiotherapists assigned to the pain clinic developed the skills and knowledge to treat chronic pain patients, and although there were many changes of individual physiotherapists (due to transfers, promotions, etc.), the physiotherapy support has continued throughout the clinic's existence, with a physiotherapist assessing and treating patients in the pain clinic, as well as participating in team meetings.

Dr. Cardosa also faced a shortage of clinical psychologists in Malaysia, which still continues to this day. In the early 2000s, the only career options for psychologists in the Ministry of Health were positions as "counselors," a job title that was not as prestigious as other health care specialties and did not pay as well.

She continued searching for personnel from different specialties, especially a willing clinical psychologist. Through her friendship with the head of the Department of Psychological Medicine at the Universiti Putra Malaysia, she sought and obtained a stream of clinical psychologists and trainees.

In addition to expertise in pain assessment and treatment, founders of MDPCs should be exceptionally skilled in relationship-building, creative problem-solving, and communicating with diverse audiences...

In 2004, Dr Zubaidah Jamil Osman, DPsych, had just returned from her training in Melbourne and was assigned to the Hospital Selayang Pain clinic, four years after the clinic opening. The university gave Dr. Osman paid time off to help in the clinic, and after a few years, Dr. Cardosa obtained funding to pay her to serve as a part-time visiting consultant. Because Dr. Osman still lectured regularly and supervised students doing their master's degrees in clinical psychology, she also brought her students to observe and help with assessments and basic treatments such as relaxation training. The arrangement worked for many years and has resulted in several clinical psychologists taking up an interest in pain management, including one who completed his Ph.D. in pain psychology.

In 2005, Dr. Cardosa expanded the multidisciplinary team again, recruiting a pharmacist and social worker. The pharmacist did not dispense medications from a dedicated clinic pharmacy since the main hospital had its own large pharmacy. He or she would come to the clinic to counsel any patient who may have been prescribed a new pain drug, such as methadone, or to assess someone who had an adverse drug reaction. While the first social worker at the clinic was enthusiastic and skilled, Dr. Cardosa had a difficult time replacing her with someone equally competent and dedicated after she was promoted and transferred to another hospital.

Challenges: Personnel

In addition to expertise in pain assessment and treatment, founders of MDPCs should be exceptionally skilled in relationship-building, creative problem-solving, and communicating with diverse audiences, according to Dr. Cardosa. The launch team also must be persistent, committed, and resourceful. Finding these combinations in the personalities and professional expertise of team members takes time and strong dedication.

Another challenge in the growth of the Hospital Selayang clinic was that, because clinic pain specialists were anesthesiologists, surgeons were frequently pressuring them to spend more time in surgery. In Dr. Cardosa's case, since she was doing pioneering work in setting up the pain services, she began spending more time outside of the operating theater than inside. The strong support of her department and hospital leadership enabled her personally to continue focusing on pain clinic work, but she—like other Malaysian MDPCs--still had to wait for staff to be interested, available, and assigned.

In particular, Dr. Cardosa had no back-up physician. For the first three years, she served as the sole physician and pain specialist in the pain clinic. She had trainee pain physicians on and off, but they were assigned to different hospitals throughout the country before another pain specialist was assigned to Selayang Hospital. In addition, the anesthesia department, with an increase in the number of staff, managed to assign junior doctors (medical officers) to the pain clinic on a rotating basis. Thankfully, with the increase in number of trained pain specialists in the Ministry of Health, there are now at least two, sometimes three, pain specialists at the pain clinic in hospital Selayang, together with trainee pain specialists and medical officers.

Training and Troubleshooting

From the first day, Dr. Cardosa trained her clinic staff personally, using the afternoon meetings on clinic days to discuss patient cases, teach new skills, and learn as a team through shared experiences. The entire team "learned together," since no member had much experience in a multidisciplinary pain environment.

Dr. Cardosa was the first anesthesiologist in the MOH trained in the subspecialty of pain medicine. After the establishment of a multidisciplinary pain clinic in Selayang Hospital, the MOH continued to identify and send interested anesthesiologists from other hospitals around the country for similar subspeciality training. A 3-year training program was developed, which included a year at Dr. Cardosa's clinic and nine to 12 months of additional training overseas at pain centers in Australia, Singapore, Thailand, India and Korea.

The Malaysian government permitted specialist anesthesiologists doing subspecialty training to take up to a year away from their in-country work, providing their annual salary, as well as a monthly allowance for living expenses and training or conference fees.

New pain clinics in other government hospitals began building the same multidisciplinary model, first identifying (at the minimum) an available on-staff specialist anesthesiologist interested in training in pain medicine, together with a nurse and a physiotherapist and/or occupational therapist to set up the clinic. The specialist, who would eventually be the pain clinic director, would run his or her clinic while completing the three-year training program. During this time, Dr. Cardosa provided support by travelling regularly to the newly set up clinics and would provide the specialist input required to continue the service even while the trainee pain specialists were doing their overseas training, to ensure the facilities' sustainability. As these other clinics grew, additional staff such as occupational therapists, pharmacists, psychiatrists, and clinical psychologists would be added to the team according to interest and availability.

Challenges: Training

One of the biggest barriers for the clinic at Selayang Hospital was that all staff working in the pain clinic also had other duties, serving not only patients with chronic pain but also other patients in the hospital — both inpatient and outpatient — from diverse disciplines such as general medicine, general surgery, urology, orthopedics, gynecology, pediatrics, intensive care, etc., This made the workload heavy and diverse, with many services completing for the staff's time. Therefore,

Role play exercise

ongoing training in pain management was all the more important. This was true in the other MDPCs across the country, too—not all of which had the same level of support for their clinics or offered the same hospital services.

New MDPC founders, therefore, must become comfortable managing part-time personnel, recruiting and training new specialists specifically for pain patients, filling service gaps when staff leave, and accepting that (e.g. for physiotherapy) management of patients outside of the pain clinic may not be ideal but could be necessary.

The continued turnover of staff was another challenge. However, in most cases, Dr. Cardosa found that a departing individual had already identified and trained a successor to fill the vacancy, leading, at times, to availability of "extra" staff such as a second physiotherapist. This pipeline of trained, committed professionals has been essential to ensuring long-term sustainability of the facility.

Even with assigned staff, none worked solely for the clinic, so coordinating consistent workers could be difficult when other hospital or department duties infringed on clinic hours. Another issue was that even supportive hospital department leaders might assign different



Participants in the MENANG Program

personnel to work at the clinic during different times, which could affect the consistency and culture of the team.

Dr. Cardosa was most successful at recruitment and retention when she was able to find people interested and committed to pain management and training; one way to capture interest was to show them first-hand how much patients could improve with the multidisciplinary approach.

The challenge was—18 months into the clinic's evolution—she was still having problems fully discharging patients. Patients would visit the clinic and keep returning. Although specialist clinics in the MOH hospitals referred patients with hypertension and diabetes to their general practitioners or community clinics for long-term follow-up, patient with chronic pain had nowhere to go as there was little experience with the management of chronic pain in community clinics. How were MDPCs elsewhere resolving this problem?

Dr Cardosa realized that she had to start a multidisciplinary cognitive behavioral therapy (CBT) pain program in her hospital to complement the treatment of individuals attending the pain clinic. She applied for and was fortunate to secure funding from the Malaysian government for a four-person team from Hospital Selayang to observe the ADAPT program at the Royal North Shore Hospital in Sydney, Australia, for three weeks in December 2001. This program uses a pain self-management approach, incorporating goal-setting, activity-pacing, and practical problem-solving to instill new behaviors and thinking that can result in dramatic positive changes in patients with chronic pain.

The team included Dr. Cardosa, a nurse, a physiotherapist, and a psychiatrist. All were so impressed with their observations of the **ADAPT program** that they immediately began planning their own two-week version of the program and set a goal of launching it within six months. In June 2002, the group ran its first CBT program, calling it MENANG. The word means "win" in the native Bahasa Malaysia language, and the team developed the name from "Program MENANGani Kesakitan," which translates to "Pain Management Program." Dr. Michael Nicholas and Lois Tonkin, a physiotherapist from the Pain Management Research Institute (PMRI), came for a week each to help run the first MENANG program.

Costs had to be creatively covered. The clinic could not afford to pay for salaries of the visiting specialists, although it covered airfare and food, and the hospital provided lodging in the hospital doctors' quarters, ensured adequate space, and enabled team members to participate. Dr.

The results of 70 patients from the first 11 groups showed that patients made significant improvements in pain levels, disability and psychological well-being, which were maintained at one year.

Nicholas was interested to see how and whether the CBT program—the first of its kind in Malaysia, and in Asia, could work in another cultural context, so he volunteered his time for the first MENANG program. Dr. Nicholas and PMRI continued to provide support by sending a clinical psychologist to help the Malaysian team to run the next three MENANG programs, and a clinical psychologist from the UK, Dr. Amanda C de C Williams, volunteered to come for the fifth MENANG program. After that, the local team was trained and confident enough to conduct the program by themselves, led by Dr. Cardosa and Dr. Zubaidah Jamil Osman. Dr. Cardosa credits the support and mentoring from Dr. Nicholas and Dr. Williams as core to the MENANG program's success.

Program outcomes proved dramatic for many patients. Patients attending the program came from all over the country and were assessed by the multidisciplinary team before being selected for the program. On the first day, the staff videotaped the patients walking a distance of 40 meters to study their gait, facial expressions, speed, and more. They were then given intensive multidisciplinary training in pain self-management with patient-driven specific goals (e.g., sitting for an hour, driving a car, etc.) to reduce their suffering. The program included moving the patient away from any prescribed pain medications, increasing exercise and movement, and adopting other non-pharmacological techniques.

After two weeks, patients were again filmed. The results were near-universal improvement, sometimes almost "like magic," to quote one of the patients. Best of all, the improvements were generally sustained. Patients returned for follow-up after one month, three months, six months, and one year before being discharged from the clinic.

One patient who sustained a severe arm injury with nerve damage (brachial plexus palsy) in a motorcycle accident progressed so much that he started returning to speak to other skeptical patients about his much-improved quality of life. This two-hour patient-to-patient storytelling is now part of the program, and new patients feel supported and understood, so they better trust and engage with the program.

The pain clinic staff, meanwhile, began using the before-and-after patient videotapes to train other medical staff and reference in medical lectures. The results of 70 patients from the first 11 groups showed that patients made significant improvements in pain levels, disability and psychological well-being, which were maintained at one year; as described in a 2011 article in *Translational Behavioral Medicine* [3].

FACILITIES: The Multidisciplinary Pain Clinic Environment

Hospital Selayang did not have the option of separate facilities for a MDPC. Dr. Cardosa started the pain clinic using two multi-use rooms shared with other specialists, because the clinic was not running every day. Some space was dedicated for anesthesia, so clinic operations were run there initially, and physiotherapy treatments sometimes required patients to go to the hospital gym.

Dr. Cardosa considered herself lucky to have identified space, since obtaining government funding to set up an entirely new facility is very difficult and takes extensive lobbying and political outreach. Other departments also pressured them to leave since other services in this relatively new hospital were also expanding.

Although she did not receive direct permanent funding for a physical facility, she did find her facility challenges resolved in more recent years by a retiring hospital hand and microsurgery surgeon who led another department and appreciated that the clinic had effectively treated his referred patients. To ensure his large space was used well after his departure, he offered her five consulting rooms and a procedure room for her clinic.

For the MENANG program, the clinic also used a room next to the palliative care ward, because Dr. Cardosa had helped establish that ward and was part of the team that obtained funding to set up this room. Other MDPC directors in Malaysia also became adept at actively searching for existing space and presenting compelling cases that a clinic was good use of those areas. In 2019, many MDPC facilities still

are not able to include physiotherapy and its needed equipment as part of the clinic space, so patients must go to a gym elsewhere in the hospital.

Because the Hospital Selayang Pain Clinic is public, patients pay any fees at the counter along with any other hospital patients. In addition, the pain clinic does not have a dedicated pharmacy but instead relies on the main hospital pharmacy to dispense medications.

An outstanding goal is still to unite all clinic care in one area, as is done at the Royal North Shore Hospital, Australia.

The Multidisciplinary Funding Model

Multidisciplinary pain clinics in Malaysia are funded indirectly by the Malaysian government as part of its investment in public hospitals, and start-up funds and expansion usually require repeated applications and often two to five years of process time. The government is very supportive of and interested in ways to ensure that Malaysian citizens can access high-quality health care.

Advance planning and strong relationships with hospital leadership help clinic directors ensure any funding requests are well-considered.

MEASURING OUTCOMES: Defining And Meeting Clinic Goals

Because Dr. Cardosa had worked in Hospital Selayang and elsewhere for many years, she understood the pain needs of its patients and had built strong relationships with fellow staff. She also felt strong pressure from hospital leaders to launch an MDPC soon after she returned from her Australian training. Indeed, they noted they would not send another physician for similar training until they witnessed what she achieved in Malaysia first. Thus, Dr. Cardosa's first clinic opened without any prior data collection beyond what the hospital routinely gathered on its own.

Measuring outcomes became more essential once the clinic opened, and Dr. Cardosa needed to show the return on investment for her training. Below are some key outcomes from the years since the clinic launched:

***Outcome 1:** At least one multidisciplinary pain clinic exists in every state in Malaysia.*

Up until her retirement in 2016, Dr. Cardosa trained most of the pain specialists working in the public hospitals in Malaysia. These specialists have gone on to set up, sometimes with the assistance of Dr. Cardosa personally, pain clinics in other parts of the country. To date, at least one multidisciplinary pain clinic exists in every state in Malaysia. Data from the annual census of pain clinics in MOH hospitals show that, in total, there are 14,000 patient visits at the outpatient pain clinics annually. This is in addition to the inpatient cancer pain and acute pain services run by the pain specialists.

Having retired from full time public service in 2016, Dr. Cardosa continues to serve as a visiting consultant to the MDPC at Hospital Selayang, which continues to run twice a week. The movement toward creation of more MDPCs has helped hospitals optimize facility space and existing

Group photo at Dr. Cardosa's retirement.

resources, build their reputations as public health care leaders, and address specific pain needs of an aging patient population.

***Outcome 2:** Patient numbers are up.*

In its first six months, the MDPC at Hospital Selayang served approximately 30 patients with chronic pain. Nearly 80 patients with different conditions were served in year two, and by 2019, that number had ballooned to 200 to 300 new patients making 1,500 to 2,000 patient visits annually, including follow-up appointments.

Demographic data show that patients also are traveling from around the country to visit the clinic, although this has diminished with the establishment of MDPCs in different states throughout the country.

***Outcome 3:** MDPC services to patients and external medical personnel have expanded.*

Services offered at the MDPC still include assessment and treatment of patients with post-operative pain and cancer/non-cancer pain, but the clinic has now reached advanced operation and emphasizes more pain self-management, as well as more follow-up of patients discharged with strong opioids after surgery or multi-trauma. The latter may be asked to come to the clinic once or twice to ensure that they do not continue with strong opioids once the acute pain has settled; if the pain becomes persistent (chronic), then staff emphasize self-management and non-pharmacological management, while at the same time weaning them off the strong opioids.

The facility's evolution into a model MDPC also has transformed it into a major training center for health workers of all disciplines to learn more about pain. Observers have been part of the clinic's daily operations since day one, especially for the MENANG program. In fact, observers often outnumber patients during the two-week MENANG program.

Dr. Cardosa uses these events and ongoing operations to train staff from other pain clinics, including occupational therapists, pharmacists, physiotherapists, social workers, nurses, and physicians. Observers must participate in teaching discussions and team meetings, where patient and treatment challenges are explored. After they witness firsthand the patient impact due to a multidisciplinary approach, revision of patient goals, and training in self-management, they must submit a final report of their new knowledge.

***Outcome 4:** If ranked informally on a maturity scale of Levels 1 (foundational) to 3 (advanced), the Hospital Selayang Pain Clinic would be Level 3 (advanced).*

The expanded services, strength of the MENANG program, and extensive professional training program are among the reasons why Dr. Cardosa would describe the Selayang Hospital clinic as "Level 3—Advanced." (See clinic maturity chart on page X.) The number estimates level of maturity and scope of impact a multidisciplinary pain clinic have in its operations and patient outcomes.

***Outcome 5:** Multidisciplinary pain management training has grown.*

After seeing the resulting outcomes from Dr. Cardosa's Australian training, the Malaysian government sent a second anesthesiologist for a yearlong pain management training in 2002. He later set up his own multidisciplinary clinic on the east coast of peninsula Malaysia. Following that training, others have been trained in Australia, Singapore, Thailand, Korea and Canada, returning to the country to further transform pain treatment throughout the states.

In addition, teams from other hospitals who observed the MENANG program began to replicate the training and multidisciplinary approach in other clinics and hospitals across the country, although in shorter, less-intensive versions of the program.

***Outcome 6:** Much of the growth in patient clientele is due to the excellent reputation and greater awareness of the MDPC clinic.*

As noted earlier, core to recruiting good clinic staff and volunteers has been the ability to demonstrate genuine patient improvement, the importance of the work, and the ways that they, too, can make a difference.

The clinic uses several creative approaches to reinforce these positive outcomes.

- First, the videotapes of improved patients in the MENANG program are shared with professionals at trainings and conferences, so interest has built. Seeing progress so quickly and providing self-reported patient data that show suffering has diminished has been compelling to professionals and trainees of myriad specialties.
- Second, patient graduates of the clinic's MENANG program return to speak to new patients, making the latter feel supported, understood, and optimistic. In one patient case at Hospital Selayang Pain Clinic, a MENANG patient graduate who lost use of his right arm in a motorcycle accident has returned annually for more than a decade--determined to help other frustrated patients regain hope, develop more control over their pain, and reduce unhelpful thoughts that cause much of their suffering.

***Outcome 7:** Data collection is embedded into daily clinic operations, and its results encourage others to start MDPCs and CBT programs.*

All patients who visit the clinic receive questionnaires that determine a baseline of their health. If they go through MENANG, their progress is tracked for the first year.

Dr. Cardosa and her colleagues published a 2011 paper in *Translational Behavioral Medicine*, which showed results in the first eleven groups (70 patients) that equaled patient improvement statistics found in populations of Western countries. The clinic has continues to gather important data during its two MENANG programs a year, in addition to twice-weekly outpatient and daily inpatient services.

Challenges: Outcomes

***Challenge 1:** Benchmarking and data analysis are too resource-intensive to maintain.*

Although the clinic tracks patient data, including demographics, diagnoses, and more, it has a harder time finding resources to fully analyze and benchmark the information. The Selayang Hospital Pain Clinic does not have a strong system for retention and analysis of data, in part because it is focused on tracking and analyzing data of MENANG graduates.

In contrast, the CBT program at the MDPC in Australia with Dr. Nicholas collects and compares data from its patients to all patients countrywide. This enables his clinic to know the quality of its work and encourages staff and volunteers to improve and learn. It is this model that Dr. Cardosa hopes all MDPCs in Malaysia will achieve in the future.

***Challenge 2:** Maintaining quality of care in every state requires more public pain specialists and pain psychologists.*

Once medical staff leave, they may not be assigned to run pain clinic services. The movement developed by Dr. Cardosa has led to creation of MDPCs in every state "in principle," but some have "lost" their pain specialists, as there is constant movement of specialists from public hospitals to the private sector. The low number of pain specialists in the country means that any departures from state to private practice could be highly impactful to patient care and clinic sustainability. Although those clinics still run, their directors are often junior physicians who may have inadequate training in pain management and assessment.

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CASE STUDY 2: PHILIPPINES

Multidisciplinary Pain Clinic Founder: Jocelyn Que, MD, MMed, FPBA, anesthesiologist at the Center for Pain Medicine, University of Santo Tomas, Manila, Philippines

Background

According to the 2018 Global Data on Cancer, more than 140,000 new cancer cases and more than 80,000 cancer deaths are expected in the Philippines each year [4].

Health care in the Philippines is provided through a dual health delivery system composed of the public sector and the private sector [1]. The public sector is largely financed through a tax-based budgeting system to government health care facilities; while the private sector is largely market-oriented, with fee-for-service options. Nearly 60% of hospitals in the country are privately run, and they serve approximately 30% of the Filipino population. The remaining 40% of hospitals are public [2].

Social health insurance under the Philippine Health Insurance Corporation (PhilHealth) was introduced in 1995 to provide financial risk protection for the Filipino people. PhilHealth reimburses government and private health facilities, and reportedly covers 92% of the population in 2017 [3]. However, financial protection is limited such that pain management and palliative care services are not covered, resulting in a high level of household out-of-pocket payment.

The burden of untreated pain and its impact on the quality of life of the patients and their families are most evident in patients with cancer. According to the 2018 Global Data on Cancer, more than 140,000 new cancer cases and more than 80,000 cancer deaths are expected in the Philippines each year [4]. To provide cancer patients better access to more responsive and affordable healthcare services, Republic Act No. 11215 otherwise known as the National Integrated Cancer Control Act (NICCA) was signed into law in 2019. The new law also aims to expand PhilHealth packages for Filipinos diagnosed with cancer and mandates the establishment of the Philippine Cancer Center to ensure access to cancer care services and medicines. By institutionalizing interdisciplinary/multidisciplinary care with a whole-of-government, equity-based, and life-course approach, access to quality and affordable care for cancer patients and survivors will be attained.

Launching a Multidisciplinary Pain Clinic (MDPC)

In the Philippines, the first pain clinic was established in 1987 by the Department of Anesthesiology, Philippine General Hospital, a tertiary state-owned hospital and operated by the University of the Philippines, under the vision and guidance of Dr. Cenon Cruz. Fresh from his training in Pain Medicine at the Seattle Multidisciplinary Pain Center under the tutelage of Prof. John J. Bonica, the clinic opened with a team of 3 anesthesiologists (including Dr. Cruz) and was later joined by an acupuncturist.

It was in the same year 1987 that the Pain Society of the Philippines was founded during the IASP World Congress in Hamburg, Germany where the Philippine delegation was led by Dr. Cenon Cruz. The first assembly of highly motivated physicians (anesthesiologists, neurologists, neurosurgeons, oncologists, rehabilitation medicine specialist, acupuncturists and residents in training) was convened by the group who attended the World Congress. This was geared towards unifying different specialists under one single organization. Prior to

First Essential Pain Management Workshop in the Philippines August 2014

this, the concept of multidisciplinary approach to pain management was unheard of and each specialist operated his own pain clinic.

In 1988, the University of Santo Tomas Hospital (USTH) established a part-time pain clinic offering pain consultation but few other services. The facility was led by Dr. Dominador Braganza who had some training in interventional pain practice in Germany. The pain team comprised of a few healthcare professionals who had taken short courses in pain but had little experience or advanced pain training. Although it may have been viewed as multidisciplinary at the time, the approach was not as strictly defined as today.

In 1993, Dr. Cenon Cruz established the first fully multidisciplinary pain clinic (MDPC) in the country at St. Luke's Medical Center-Quezon City (SLMC-QC), a well-funded private medical center. Health care professionals from various specialties and disciplines were assembled to work together in addressing the biopsychosocial dimensions of pain. As was the case in other pain clinics, most of the patients seen had cancer-related pain, but later evolved to include non-cancer pain conditions. Subsequently, other multidisciplinary pain clinics were organized and a few pain clinics were restructured into MDPCs. One of these was the USTH Pain Management and Palliative Care Unit.

Cognizant of the huge knowledge and skills gap in pain management in the country, Dr. Jocelyn Que pursued advanced studies at the University of Sydney and clinical fellowship training in Pain Medicine at the Royal North Shore Hospital, Sydney, Australia, under the mentorship of pain pioneer and University of Sydney Professor Michael Cousins, and his staff in 2005. The training inspired her to want to develop similar MDPCs in the Philippines. It was fortuitous when, upon her return in 2006, the director of the newly established Benavides Cancer Institute at UST Hospital appointed Dr. Que as Head of the Pain Management and Palliative Care Unit to improve services for cancer patients and supported the vision of adopting a multidisciplinary approach to pain management in the re-envisioned pain clinic. This support from the administration was key to the immediate establishment of the multidisciplinary Pain Management and Palliative Care Unit. The clinic continued to serve 100 patients in its first year, but that number—and the attention of other local healthcare leaders--began growing steadily.

Because fully trained Filipino pain specialists were not common then and now, they often affiliate with multiple clinics. Thus, Dr. Que has collaborated with other pain specialists and health care professionals in establishing MDPCs in other hospitals and remains affiliated with these pain clinics.

PERSONNEL: Recruiting and Managing a Multidisciplinary Pain Clinic Team

The USTH Pain Clinic was already a functioning pain clinic under the Department of Anesthesiology when Dr. Que returned in 2006 from her pain fellowship training. The pain clinic then was merely a cubicle containing a desk, two chairs, and a bed/examination table in the Anesthesia department office. Though the USTH is a private tertiary university hospital with a capacity of 352 private and 250 service beds, only an average of 100 patients per year were referred to the pain service before 2006.

With the mandate from the Director of the USTH Benavides Cancer Institute to restructure the pain clinic to better serve the multidimensional needs of the cancer patients, Dr. Que transitioned it to multi-modal operations with an interdisciplinary team and merged it with the palliative care service to create the current pain management and palliative care unit (PMPCU).

When Dr. Que began the transition, the USTH MDPC started with one nurse and four pain physicians. In response to the lack of trained health care professionals in the pain team, Dr. Que actively sought and eventually found Australian fellowship training positions with stipends that enabled three of her identified colleagues—a clinical psychologist, a pediatric pain specialist, and a palliative care physician—to train in multidisciplinary pain management in Australian hospitals. Funding for the clinical psychologist training was provided by an IASP SCAN Design Foundation fellowship grant.

Staffing of Filipino MDPCs grew considerably during the past 13 years. In 2019, UST Hospital clinic has six pain physicians (two of whom are full-time), three palliative care practitioners, and one full-time pain nurse. In addition, clinic staff can refer patients to a clinical psychologist/ psychiatrist from the Department of Neurology & Psychiatry or to a physical therapist or occupational therapist from the Department of Physical Medicine and Rehabilitation Science. Patients may be seen by these health care practitioners in the MDPC or in their respective clinics where the needed equipment and space for treatment are housed. As her staff developed, Dr. Que introduced more services, upgraded pain assessments, introduced psychosocial assessments, and offered various pharmacologic and non-pharmacologic approaches, including cognitive behavioral therapy, acupuncture and interventional pain procedures.

In the upscale private hospitals like St. Luke's Hospital-Global City, its MDPC staff in 2019 includes eight pain specialists, two palliative care physicians, eight pain nurses, two palliative care nurses, two palliative care physicians, an adult psychologist, a pediatric psychologist, a social worker, a chaplain, and an addiction medicine specialist/physician who also is a psychiatrist. A clinical pharmacist works for the clinic part-time, meeting with its patients to advise them on drug side effects and the best ways to take and store restricted drugs such as opioids. A fellowship training program in pain medicine also has helped grow the pain staff and continued the growth of clinic services such as more interventional procedures and increased numbers of family conferences and multidisciplinary team meetings.

Dr. Que recommends that new MDPCs begin with a minimum staff of three pain specialists, although five would be ideal. If a clinic aims to provide seven-day coverage, she notes that it would likely operate most efficiently with seven pain nurses, three palliative care nurses, and a clinical psychologist trained to help patients in pain.

The staff size would depend on the institution, location, and needed services; highly urban areas may need a bigger staff, since many pain specialists rotate to different hospitals on different days. If the institution can support full-time hospital pain doctors in the clinic, the staff size could be smaller. Dr. Que, for instance, served as the UST Hospital clinic's second palliative care physician and rotated among facilities regularly.

As a private hospital, St. Luke's Medical Center had a different staffing scenario. Operating 24 hours a day seven days a week, the MDPC had two of its 10 nurses on duty for every eight-hour shift. Nurses were able to assess and monitor in-patient and out-patient patients around the clock. If a cancer patient was too ill to come into the clinic, a healthcare professional such as a physician or palliative nurse visited them at home.

Challenges: Personnel

A common personnel challenge for most MDPCs in the Philippines has been the unavailability of a clinical psychologist who is trained in the psychosocial assessment and psychosocial approaches to pain management, which is essential for a truly comprehensive patient and pain assessments and management. To address the issue, in 2010, Dr. Que invited Prof. Michael Nicholas of Royal North Shore Hospital and his team of a pain nurse, psychologist, and physical therapist to visit Manila Doctors Hospital and lead a two-week multidisciplinary workshop on teaching patient self-management skills. Also, a clinical psychologist of the USTH MDPC was sent to the Royal North Shore Hospital to train under the tutelage of Prof. Nicholas through the IASP SCAN Design Foundation fellowship grant. However, after working at the MDPC for three years, the clinical psychologist left the country to start a family with her Australian husband.

Indeed, the swift turnover of trained health care staff has been a common problem in the country. With the Philippines being a major exporter of health care professionals, it constantly grapples with the shortage of health providers, sometimes inevitably leading to poor quality of health care and high stress levels among health care staff. Furthermore, the country suffers from a disparity in the distribution of health workers in the country, where health workers prefer to work in urban than rural areas.

Another major challenge of the USTH MDPC was the lack of funding for a full-time pain nurse, which meant that the pain physicians had

Essential Pain Management Lite University of Santo Tomas March 2015

Essential Pain Management Participants Davao Regional Hospital May 2015

to provide her salary. As a private hospital, USTH does not provide salaries for the physicians, only for employed hospital staff like nurses, pharmacists, physical therapists. With only one pain nurse, the USTH MDPC operated only in the day and pain referrals at night were addressed by the pain practitioners themselves.

Training and Troubleshooting

Education and training of MDPC personnel is an ongoing necessity. Clinic staff must continue to learn foundational pain management, as well as keep up with emerging pain research and treatments. Because there was no formal education on pain management in the undergraduate medical and other health sciences curricula, Dr. Que has used the Essential Pain Management (EPM) program as an introductory module for all members of the USTH MDPC. This program was developed by Dr. Roger Goucke, a pain medicine physician in Perth, Australia, and Dr. Wayne Morris, an anesthesiologist at the University of Otago in Christchurch Hospital, New Zealand. The module provided a simple framework of how to approach a patient with pain.

In 2014, Dr. Que invited Dr. Goucke and Dr. Mary Cardosa, founder of the first multidisciplinary pain clinic in Malaysia, to the University of Santo Tomas to hold an inaugural EPM workshop. The three-day workshop attracted 50 health care professionals and sought to increase pain awareness countrywide. The workshop included a first day of EPM basics, while day two became a separate half-day instructor course that covered how participants could better teach the module. Day three required participants to run the course themselves and lead small-group discussions. Key leaders of the Pain Society of the Philippines attended this workshop at the invitation of Dr. Que. Impressed, the society decided to offer the workshops nationwide, an initiative that was launched in 2015 and is ongoing.

To address the knowledge gaps on pain in the undergraduate medical curriculum in the University of Santo Tomas (UST), Dr. Que and the pain education team under the Center for Pain Medicine, UST Faculty of Medicine and Surgery, has incorporated the EPM module into the curriculum of fourth year UST medical students. The team also traveled out of town to teach the EPM program to health care professionals in other institutions.

In 2008, the UST Faculty of Medicine and Surgery collaborated with the University of Sydney to offer purely online postgraduate studies in pain management to health care professionals who are interested in advancing their knowledge and understanding of pain and its

Pain Self-Management Trainers' Course manila 2018

Multidisciplinary Participants in Pain Self-Management Trainers' Workshop at University of Santo Tomas in Manila in 2018

management. This program enabled health care professionals from South East Asia, India and Pakistan to learn at a reduced cost. To date, 60 health providers have enrolled in the program, of which 21 have graduated with the degree of Master of Medicine in Pain Management (for medical practitioners) and 3 with the degree of Master of Science in Pain Management (for non-medical health care professionals).

Challenges: Training

One of the most common problems for MDPCs has been funding shortages. Additional funding would have enabled the clinics to "easily hire staff, conduct research, and provide training," says Dr. Que.

Financial support varies by institution. In the Philippines, to qualify as a pain specialist, a physician must complete two years of training in an accredited post-doctoral fellowship training program. To date, there are only 4 institutions with accredited pain fellowship training programs (with stipends provided to fellow trainees), namely: St. Luke's Medical Center-Quezon City, St. Luke's Medical Center-Global City, University of the Philippines - Philippine General Hospital, and Manila Doctors' Hospital. No fellowship training program has been offered at UST Hospital due to funding concerns.

Another challenge is training members of the MDPC on the biopsychosocial dimensions of pain and the multidisciplinary approach to pain management. With the lack of clinical psychologists familiar with psychological approaches to pain management being a continuing problem in the country, a program that would teach patients how to self-manage their pain would help address this problem. It was in 2018 that such a workshop was conducted by Prof. Michael Nicholas and physical therapist Maria De Sousa from Royal North Share Hospital as a four-day skills training program. The workshop taught health care professionals what and how to teach patients pain self-management skills. Acquiring self-management skills will enable patients to function and cope with their pain by themselves and will help streamline referrals that would require involvement of a clinical psychologist. Despite a major typhoon in Manila that required the workshop to move from site to site, 28 attendees completed the MDPC training.

FACILITIES: Creating the Multidisciplinary Pain Clinic Environment

From the facilities standpoint, the USTH pain clinic before 2006 was made up of a cubicle containing a desk, 2 chairs, and a bed/examination table in the Anesthesia department office. With its

transition into a MDPC, the USTH PMPCU was moved to a different site — the USTH Benavides Cancer Institute building — where it has one consultation room dedicated for its sole use and shares a common reception area, outpatient consultation rooms, library and family conference room with the interdisciplinary team at the USTH Benavides Cancer Institute.

Due to limitations in space and budget, equipment such as patient-controlled analgesia pumps and ultrasound machines were shared among the different departments/units. Interventional pain procedures requiring use of fluoroscopy were done in the operating room or in the procedural room of the Interventional Cardiology unit.

In the Philippines, there are only three MDPCs that exist as independent units, unlike most of the other MDPCs which are under the Department of Anesthesiology. The MDPC at St. Luke's Medical Center-Global City (SLMC-GC) is an independent unit and has dedicated unit space larger than that of USTH PMPCU, including two or three consultation rooms assigned solely for pain management and palliative care unit, and a family conference room for patient discussions or multidisciplinary team meetings. The physiotherapists and occupational therapists reside in their own well-equipped rehabilitation centers, and pharmacists are headquartered in each main hospital pharmacy for all three MDPCs. The SLMC-GC has a 528-bed capacity and offers a two-year pain medicine fellowship training program.

BUDGET: Funding Challenges for Long-Term Sustainability

As a private university/teaching hospital, the USTH sustains itself mainly on patient fees and, to a small extent, from PhilHealth subsidy as an accredited health care facility. However, the practice of Pain Medicine has not been recognized as a specialty in the Philippines so patients and pain practitioners could not claim PhilHealth benefits for pain services.

Both long- and short-term funding remain as major concerns. Despite its continuing growth and high reputation among patients, the clinic does not compete well in terms of revenue generation or its return on investment against other hospital services.

As part of the USTH PMPCU's responsibility of educating the hospital staff and the public and to help sustain the salaries of the pain nurse and secretary, Dr. Que conducts regular educational activities though this contributes only in the short term. In the long term, the clinic needs greater hospital administration support. With the change of hospital administrators, the new MDPC director needs to build and maintain strong relationships and communication channels with the hospital administrators to help ensure adequate, sustainable funding for clinic services, operations, and personnel.

MEASURING OUTCOMES: Defining and Meeting Clinic Goals

Hospitals with MDPCs regularly audit each departments and section, so clinic staff recognize key performance indicators, regularly collect patient satisfaction surveys, and comply with quality measurements. In addition, internal and external audit teams of the hospitals visit the clinics quarterly to check records, staff, credentials, training, patient satisfaction, and sample patient records.

When Dr. Que began at the UST Hospital in 2006, no data for the clinic had been collected, so she was unable to conduct needs assessments and other research. Lack of funding has continued to prevent the clinic from collecting or analyzing as much data as it would like.

In 2013, USTH Benavides Cancer Institute surveyed cancer patients to identify their symptoms and how they correlated with other demographic data [3]. The survey revealed that cancer patients suffered from three top symptoms: pain, anxiety, and a poor sense of well-being. As an offshoot, Dr. Que and her colleagues conducted another study [5] and reported that one-third of patients with cancer had experienced or were experiencing depression. The findings further validated the need for psychological expertise and training of clinic staff and psychological services for clinic patients.

Here are some of the key outcomes of the 32 year-old pain clinic.

***Outcome 1:** Clinic patient numbers are up significantly.*

The UST Hospital pain clinic served approximately 100 patients in the year before Dr. Que transitioned it to a multidisciplinary facility. That number has climbed to 500 annually in 2019. Most of these patients (70-84%) had cancer-related pain, 14-24% had chronic non-cancer pain and 2.3-6% presented with acute pain. Patients with acute postoperative pain were managed by the anesthesiologist, and only the patient who presented with complex pain conditions or non-responsive pain will be referred to the pain service. Only SLMC-GC mandates that all postoperative patients need to be evaluated by the MDPC pain specialist.

***Outcome 2:** The MDPCs are at various levels of expertise and sustainability.*

Dr. Que considers St Luke's Medical Center to be a Level 3 MDPC on a rating scale of Level 1 (foundational) to Level 3 (advanced) because of its healthy financial condition, large staff size, myriad comprehensive services, and high-quality equipment.

She rates UST Hospital at Level 2 (intermediate), citing infrastructure gaps, smaller multidisciplinary staffs, and lower funding for and assignment of pain and palliative nurses. UST Hospital is offering more educational opportunities and adding new construction that may benefit the clinic, though, so this informal ranking may deserve reevaluating in a year or two. Despite these limitations, patient outcomes show improvement in clinical parameters such as pain reduction, return to function or work, enhanced quality of life, and patient satisfaction.

***Outcome 3:** The MDPCs have been helpful training centers for undergraduate and graduate pain trainees and pain education across the country and South East Asia.*

Dr. Que continues to teach Anesthesiology and Pain Medicine to undergraduate medical students at UST and at the clinic. Her training in Sydney and clinical work at UST Hospital also inspired her and

CBT program with 2 patients.

a multidisciplinary team of colleagues to collaborate with the Pain Management Research Institute, University of Sydney and establish the online master's degree program in pain management for post-graduate physicians in Southeast Asia, India, and Pakistan in 2008.

The Developing Countries Project: Initiative for Improving Pain Education grant by the International Association for the Study of Pain was instrumental in jumpstarting the organization of the online graduate studies program. The grant supported a three-day training workshop on online facilitation for the multidisciplinary and international faculty of the online master's degree program in 2008.

This program was later expanded in 2015 to offer the master of science degree in pain management to non-medical health care professionals in the same regions.

***Outcome 4:** Support by hospital leadership proved critical but did not alleviate all challenges in the first year of the MDPC.*

Ensuring sustainable clinic support required educating and negotiating with administrators about the unique needs of MDPCs. However, the

hospital was not as forthcoming with administrative support and unit space, nor did it accommodate requests to address the clinic's primary challenge in year one: funding a pain nurse who could manage administrative as well as clinical or patient care duties. With the recent change of hospital administrators on October 2020, it is hoped that our voice will be heard and a few of our requests will eventually be granted.

Challenges: Outcomes

Although the number of MDPCs in the country is slowly growing, these facilities will continue to face difficulties. The UST Hospital Pain Management and Palliative Care Unit has been short of personnel and funding since its inception as a MDPC in 2006, yet this has not deterred its inception, operation and growth and continues to serve patients with pain problems. There is still much that can be done and needs to be done. The MDPC Director shall persevere in communicating with the hospital administration to make them better understand the nature of the practice of Pain Medicine and the essential components to ensure the delivery of quality pain management for our patients. Members of the multidisciplinary pain team should share a common vision and communicate regularly to achieve the patients' goals and the clinic's raison d'etre.

The Philippines is moving steadily toward a more multidisciplinary pain management approach. The recent approval of the National Integrated Cancer Control Act is providing a much-needed impetus for the creation of pain management and palliative care services and an increased availability and accessibility of pain medications for Filipino patients. The shift increases the urgency for education and training of more health care professionals on the multidisciplinary approach to pain.

Dr. Que is optimistic that the country is advancing in the right direction and would do so faster with greater financial and educational investments, as well as with the combined energy and efforts of diverse but collaborating stakeholders.

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CASE STUDY 3: THAILAND

Clinic Founder: Pongparadee Chaudakshetrin, MD, anesthesiologist, formerly of Siriraj Hospital Pain Clinic in Bangkok, Thailand, and now at Samitivej Sukhumvit Hospital and Praram 9 Hospital

Background

The World Health Organization (WHO) ranks Thailand as 47th in its global list of top-50 healthcare systems, primarily for its good universal healthcare system [1]. In 2017, the Thailand government set a 2026 strategic goal of becoming a world-class "Medical Hub."[2]

Thai healthcare and its funding are divided into three schemes: government, nonprofit, and private. The Ministry of Public Health oversees policies, quality of practices, and execution of the government scheme introduced in 2001 to 2002 to ensure universal healthcare for the country's 68 million citizens. This healthcare coverage scheme which was then called the '30-baht scheme', offered comprehensive healthcare that included not just basics, but services such as radiotherapy, surgery, and critical care for accidents and emergencies. The scheme includes management of nearly 930 contracted public hospitals—many of whom carry international accreditations--and 9,768 clinics or health centers [3]. All receive funding generated by public tax revenues and distributed via the National Health Security Office according to local population size.

The government scheme is further broken down into three major programs: the universal coverage scheme, a welfare system for civil servants and their families, and Social Security for private employees only. A gold card is issued free to any Thai citizen who wants to access the universal care provided in their health district or to cover referrals to any out-of-area health specialists.

Although high-quality rural medical care is less assured than care provided in urban areas, most citizens can adequately access government-run healthcare.

Patient fees and private insurance fund 363 private hospitals and 25,615 private clinics [4], which tend to serve patients faster than the often-overloaded public health facilities. In addition to treating Thai nationals, private hospitals play a major role in Thailand's **thriving medical tourism** [5], which is among the most respected in the world.

While general healthcare in Thailand has enjoyed strong government attention and investment, pain management specifically has not been a government priority.

Of all the conditions that cause pain, cancer pain appears to be most publicly acknowledged as a major health challenge in Thailand. A 2003 **article** [6] by Drs. Kittiphon Nagaviroj, MD, and Darin Jaturapatporn, MD, in *Pain Research and Management* revealed the scale of the problem. It noted that in-hospital admissions by cancer patients were rising and that of the 62% of admitted cancer patients who report experiencing pain [5], one-third received no pain management intervention [7].

Among cancer patients whose pain was chronic, approximately half reported receiving pain treatment, but often only with simple analgesics [8]. This may be because one study at a Thai teaching hospital found that nearly 60 percent of recently graduated physicians and residents in 2005 acknowledged that they did not know how to administer pain medication, and more than half feared that terminal cancer patients would become tolerant or addicted to any provided opioids, and thus, had a generally negative attitude about pain management overall [9]. The same study found that 86.4% of physicians said they needed to take pain management courses [10].

Launching A Multidisciplinary Pain Clinic

In the late 1980s, Pongparadee Chaudakshetrin, MD, was assigned by the head of the anesthesiology department at Siriraj hospital to start a Pain service. At the time, there is no specific policy or direction plans but to diversify anesthesiologic roles in managing pain out of the

operating theater. Service was managed in a small clinic for patients with both acute and chronic pain by a three-person staff (physician, nurse, assistant secretary) The pain management offered were evaluation, diagnosis, and management through the diagnostic and therapeutic intervention to address nearly every kind of pain, primarily through neural blockades and pharmacological treatments, including analgesic and psychotropic medications, and nerve stimulation. The operating hours were 9 a.m. to 4 p.m. Monday through Friday. The patients were consulted but sometimes referred from other hospitals where there was no service running. Most of the problems were diagnosed with cancer and chronic pain.

When the patient completed the round of further consultations, clinic staff would communicate with all of the specialists, gathering insights and recommendations and, when possible, meeting with them as a larger team to discuss and agree on possible treatments and plans.

At the time, the pain condition and its management were not installed in the curriculum of the medical student. Only acute postoperative pain management was taught seldomly in the teaching round. A routine talk on 'Pain Management' for a group of medical students that rotated to the anesthesiology department was initiated as this new medical service was recognized as part of the Anesthesiology Department.

However, on the larger healthcare landscape at the time, only a few people were interested in pain management and treated the pain problem appropriately, especially chronic and cancer pain, but this was progressively changed. Dr. Chaudakshetrin was a vocal advocate for the Pain clinic, by her teaching and active participation in educational activities in and outside the Anesthesiology department, she worked closely with the other department staffs to try to inspire support and engagement of medical students including graduates in the field such as an anesthesiology resident and alliances.

Her efforts and the support of the department director helped the clinic become more involved in the academic of the Department of Anesthesiology, which in turn strengthened support among hospital and university leaders. Interest further improved among hospital colleagues after clinic staff showed them how the facility was addressing problems associated with post-op suffering. As more anesthesiologists recognized the value of multidisciplinary treatment options, some tried to help the clinic. In 2005, the acute postoperative pain service established and separated which nudged Dr. Chaudakshetrin toward treating more on chronic pain patients and fellowship training program initiatives on pain management.

Based on such a highly urban area, Siriraj Hospital traditionally handled the highest volume of patients in the metropolitan area. The number of patients with difficult pain conditions grew progressively. The complexity of the overlapping pain conditions finally prompted the group to seek treatment alternatives. Clinic staff and hospital faculty began to look at a multidisciplinary team approach but moved forward cautiously. It was five more years before the hospital was ready to try an approach that united expertise and insights from diverse medical specialties.

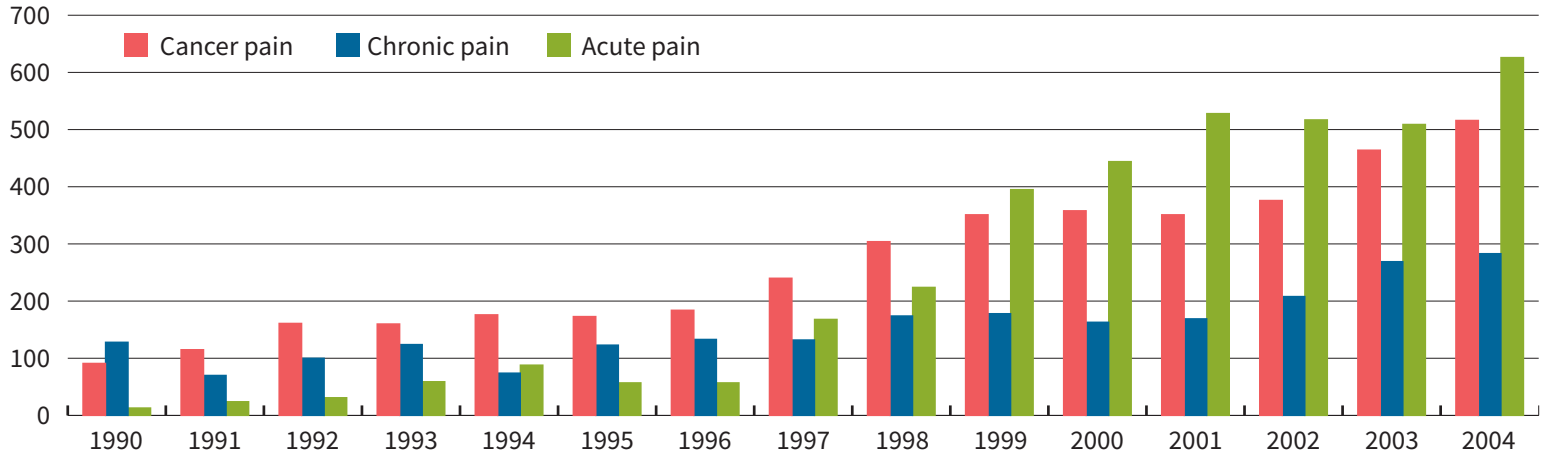
Dr. Chaudakshetrin installed a patient assessment, diagnosis, and consultation process that would steadily evolve the service to a multidisciplinary clinic model. Only patients who considered difficult were cautiously treated through the comprehensive evaluation and diagnosis by clinic staff (doctor and nurse) and then consulted to specialists who were involved in the managed care including psychiatrists, physiotherapists, and rehabilitationist.

When the patient completed the round of further consultations, clinic staff would communicate with all of the specialists, gathering insights and recommendations and, when possible, meeting with them as a larger team to discuss and agree on possible treatments and plans. The patient then met with the group to hear a preliminary diagnosis, receive education on available treatments, and be asked for consent on the treatment plan. The clinic staff collaborated for follow-up and post-treatment evaluations.

PERSONNEL: Recruiting And Training a Multidisciplinary Pain Clinic Team

In its first year, the pain clinic served around 200 patients with an initial staff of three—Dr. Chaudakshetrin is the pain medicine physician, an assistant secretary, and a nurse. Full-time professional staffing stayed the same for three years. Until 1993, patient-demanding pain management service increased progressively, a second nursing staff

Chart 1. The Patients with pain conditions treated in Pain clinic (1990-2004)



was allocated enabling the clinic to serve more patients annually. By the time the hospital expanded the staff again with more nurses and assisting staff four years later, patient-visit numbers had reached an average of 1,000 a year.

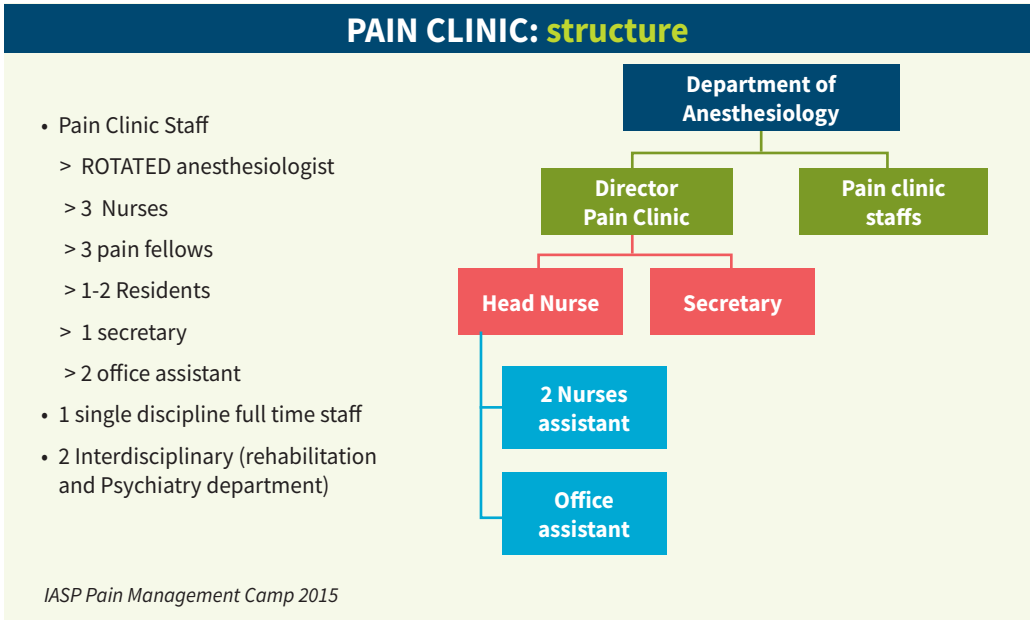
For the next 13 years, patient growth flourished and totaled 5,000 patient-visits in 2010. By 2015, the hospital had slowly continued to expand clinic staff to two to three attending anesthesiologists, three registered pain nurses, one assistant secretary, three Thai fellows, two visiting international fellows, one volunteer physiatrist (Tuesdays only), and one volunteer psychiatrist (Thursdays only). Grand rounds for in-patient consultations occurred every two weeks, while staff conducted clinic pharmacological ward rounds each Tuesday. The staff did weekly intervention procedures in a single theater session on Wednesdays.

Although not assigned specifically to the clinic, when time allowed, a hospital pharmacist would visit the clinic to counsel clinic patients upon request whenever new medications were introduced or a negative drug reaction occurred. A social worker also provided financially and support assistance to clinic patients upon referral.

Especially in the early years, recruitment of talented, committed personnel for the clinic's multidisciplinary team was difficult, despite the ever-increasing workload. The hospital structure was such that each employee was mandated to work only for his or her department. Convincing a physician to see clinic patients meant asking the individual to spend hours working on a project that was under the oversight of the Department of Anesthesiology rather than his or her own.

Using her strong relationship-building skills, Dr. Chaudakshetrin reached out to personal friends and professional acquaintances to get involved and help her execute the MDPC model for the good of the patients. In one case, an interesting physiatrist (physical medicine and rehabilitation physician, PM&R) and a close friend volunteered every Tuesday morning for more than 20 years.

Dr. Chaudakshetrin worked to strengthen the clinic model by organizing an in-depth multidisciplinary pain meeting every month but would meet more frequently if complex cases arose. These get-togethers helped bond staff through a better understanding of each other and shared, self-taught knowledge that would help the clinic succeed.



Picture 1. Pain Clinic staff minimum structure

Picture 2. A multidisciplinary pain team meeting including an anesthesiologist, two registered nurses, one clerk, one volunteer physical and rehabilitation physician, and a psychiatrist.

Challenges: Personnel

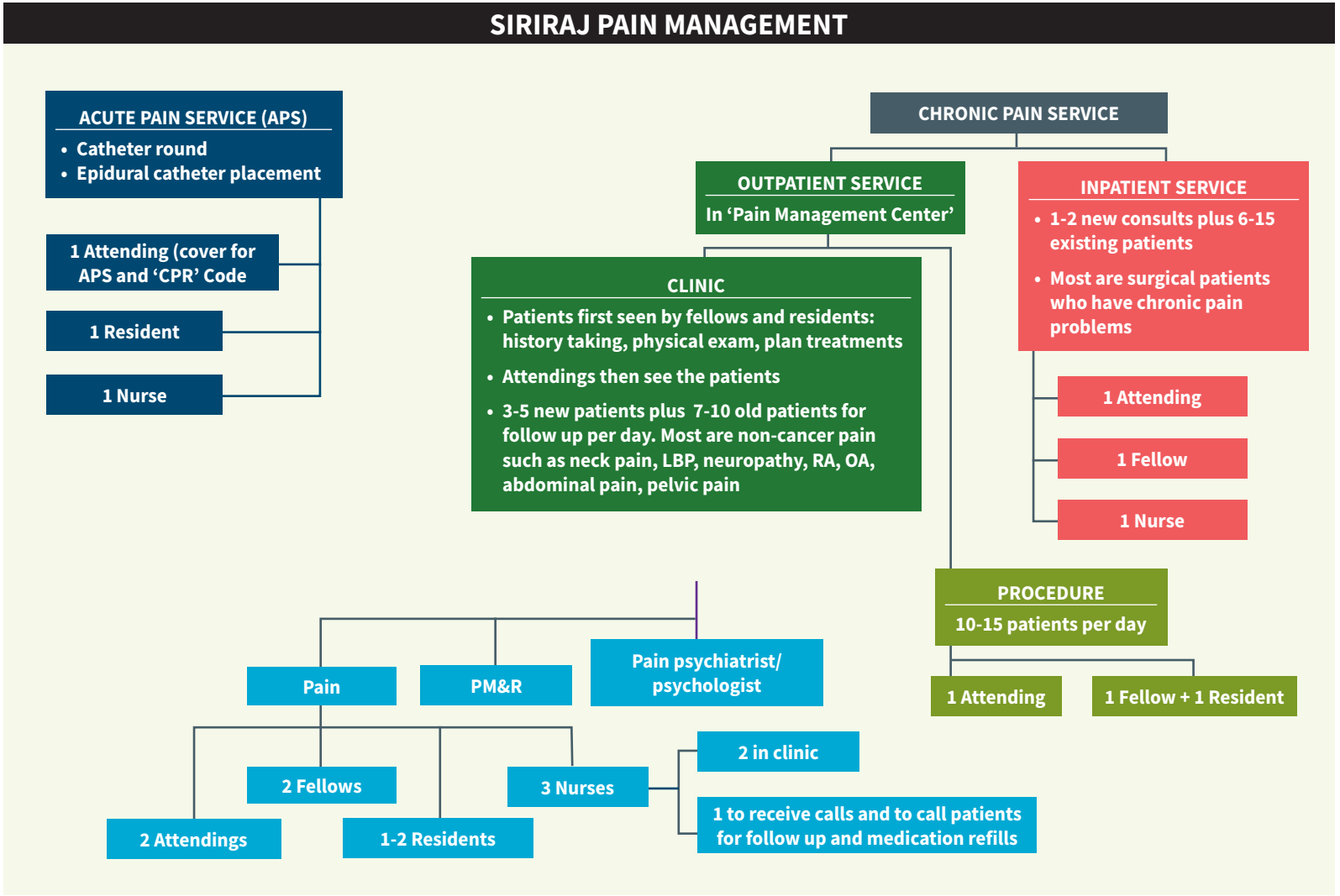
The biggest staff challenge for the clinic was that people did not consider pain as a major health problem, so they did not want to be full-time pain management specialists nor to work full-time in an MDPC, according to Dr. Chaudakshetrin. A part-time schedule supporting staff was not fully dedicated to pain management, nor were they often willing to learn and improve their competency skills.

Besides, the hospital did not develop a succession plan for a pain management specialist in case Dr. Chaudakshetrin or the other pain specialist left. This all made personnel recruitment an ongoing concern.

Another major challenge was there was no pain treatment room; therefore, anesthetic pain treatment could not be scheduled. Normally, it was done in the recovery room or only when there was a vacancy in the operating theater, resulting in inadequate time and access to appropriate facilities for larger procedures.

Most of the time, clinic staffers were already scheduled to work in the pain clinic, but because the hospital considered pain a non-emergency, staff sometimes would be pulled away from clinic duties to work in operating rooms instead. This occasionally led to a severe shortage of clinic staff during the working day, according to Dr. Chaudakshetrin, and clinic patients were forced to suffer longer.

Personnel turnover at the higher, decision-making levels at the hospital also had negative impacts on clinic management and the addition of new services. Department head replacements were not always as supportive of the clinic, and personnel churn meant hospital policies were not always consistent. For example, despite growing numbers of patients and workload, supporting staff would not be assigned to help.



Picture 3. Working scheme: staffing and duties of pain management services at Siriraj Hospital since 2005

Training and Troubleshooting

Ongoing training of personnel was critical throughout the clinic's evolution. Dr. Chaudakshetrin trained her nurses and assistants because, in the early 1990s, the university and hospital did not have any pain management courses for nurses.

As a clinic administrator, Dr. Chaudakshetrin had already worked to improve education to meet department standards even before the transition was made to a multidisciplinary approach. Thus, the Department of Anesthesiology provided some training for her administrating staff, but most learnings of clinic staff occurred on the job and alongside Dr. Chaudakshetrin, watching her listen carefully, speak to patients, and handle patient cases.

Personal relationships continued to play a vital role in recruiting and training multidisciplinary staff. In the clinic's foundational years, Dr. Chaudakshetrin developed friendships and sometimes gave presentations alongside four specialists--a psychiatrist, a rheumatologist, a rehabilitation specialist, and an orthopedic surgeon--whom she met at professional conferences and pain management symposia. Their common interest inspired them to work together more consistently, and the friends would refer to medical students and fellows to work or volunteer regularly in the clinic. This support helped strengthen and expand the multidisciplinary team.

The clinic staff worked hard to improve core competencies needed to optimize the outcomes of the MDPC. These included a strict focus on accurate pain diagnoses and management, along with basic communication and listening skills. Because communication was considered the most important of clinic skills, all staff were required to excel at discussing, training, and especially listening to patients, other hospital staff, and interdisciplinary consulting staff.

One skill lacking at the clinic in its early days was a staff member proficient in statistics. While a basic knowledge of statistics would have helped develop clinic-based research, the nurses in the 1990s did not have time or training to conduct possible research.

To Dr. Chaudakshetrin, delivering pain training and education was one of the most important elements of clinic operations. Healthcare providers from other hospital departments would sometimes visit to observe, and she advocated for the establishment of a residency training program. Support from the department improved once the clinic—thanks in part to ongoing training by volunteer specialists--had built a strong positive reputation among patients, her peers, and the wider community.

FACILITIES: The Multidisciplinary Pain Clinic Environment

Because the MDPC resided in the hospital, it had to use existing space. Initially, only one room of approximately 4 square meters was allocated in the rehabilitation building for clinic work. She and the assigned nurse eventually moved to two rooms and slightly larger hospital accommodations of 8X10 square meters to see patients for pain assessment, follow-ups, and small procedures such as diagnostic nerve blocks for patients with upper-arm pain.

Finding time and space to administer larger nerve blocks was an ongoing challenge since that required competing for the use of operating theaters. The tight scheduling of theater rooms meant finding vacancies for every clinic patient at the needed times was nearly impossible; if operations were scheduled for 9 a.m., Dr. Chaudakshetrin and her assistants would arrive early at 8 a.m. to fill the narrow time slot with clinic patient procedures. The competition for operating space meant scheduling required extreme flexibility. Eventually, the situation resolved, but it took years before people recognized that the MDPC staff was acting only in the best interest of its patients.

Between 1992 and 1997, the clinic acquired space of 80 square meters and received two infusion pumps and a PCA machine to bolster its development of anesthetic acute pain services. It remained in that space until 2011 when the MDPC was permitted to expand exponentially. The new facility had a waiting room, seven clinic rooms for assessment and treatments, and a small meeting room with a

Picture 2. Pain Clinic in 1990

Picture 3. Pain clinic in 2010

Picture 4. Pain Clinic in 2011

display board that worked well for teaching, pain self-management training, and meetings of the multidisciplinary team or families. The clinic remains at this site today.

In terms of equipment, "nothing fancy" was required when she transitioned from a traditional to a multidisciplinary pain clinic, according to Dr. Chaudakshetrin. The hospital supplied basic equipment to the pain clinic such as that used to establish pain scores and conduct physical and neurological exams. Other equipment such as a C-arm had to be borrowed from other departments. The equipment also was sometimes added based on which type of specialist was working in the clinic or which patient conditions were most common. Some specialists even had their equipment such as demonstration charts of physical exercises for patients to do at home.

The Multidisciplinary Pain Clinic Funding Model

Siriraj Hospital is a publicly funded hospital. The hospital considered the MDPC a department assignment, so it assigned Dr. Chaudakshetrin and one nurse to start the work, adding their salary costs to those of the Department of Anesthesiology. The clinic broke even financially in its first year, and the budget remained the same for two years. An increase in workload due to the rising number of consulting pain patients prompted the hospital to pay for another clinic nurse during year three.

Several years after the clinic opened, the university began providing pain education via the clinic to its anesthesiology residents and rolled training costs into the budget. The clinic continues to operate solely with hospital subsidies today.

Clinic budget numbers are not easy to break out of the hospital's main budget. Aside from the cost of staffing, the space allocation for the clinic changed nearly every five years, prompting new construction, furniture, equipment, or a rearrangement of the space.

Continuing education costs of staff usually involved on-the-job training, but staff also were sent to pain association meetings such as those of the Association of Southeast Asian Pain Societies (ASEAPS) or International Association for the Study of Pain.

Showing the outcomes of clinic work was and remains important to any MDPC, so tracking key performance indicators of value to the sponsoring institution was always vital, especially in the early years. Examples include the number of fellows or residents trained, the number and types of patients treated, and the number of workshops and published articles generated.

MEASURING OUTCOMES: Defining and Meeting Clinic Goals

The Siriraj Hospital clinic launched in 1990 without additional patient surveys or needs assessments before transitioning to a multi-modal model. According to Dr. Chaudakshetrin, the clinic had enough patients, and the management of hospital patients at that time was simple.

Two key measurements used by the clinic to indicate performance and outcomes were patient general well-being (including pain and function) and the number of times patients had to revisit. Staff also tracked the reduction of medication usage and pain, increased activity and return to work, and reduced the use of the healthcare system in general.

Because the clinic is in a governmental and university hospital therefore it used four other KPIs to monitor progress toward other non-patient goals:

- **Organization:** growth in the number of
  - staffs (both physician & nurses)
  - consultations (patients)
  - service spacing
- **Education:** growth in the number of
  - affiliated fellows from different disciplines
  - education programs training
- **Communication:** growth in the number of alliance visitors (both physician and nurses) within and outside the hospital
- **Quality Assurance:** continuing education for the staff

All of these showed positive trends early in the clinic's tenure. Besides, the clinic gathered patient feedback, most effectively from follow-up interviews.

Here are some of the key outcomes of the 29-year-old facility:

***Outcome 1:** Inconsistency in departmental and hospital-support*

In 2019, hospital administrators recognize and strongly support the clinic works, but Dr. Chaudakshetrin never took the enthusiasm of hospital leaders for granted because high-ranking hospital personnel changes had negatively impacted clinic staff at times due to inconsistent support. In addition, pain management is not yet considered a specialty in Thailand, it remains within the anesthesiologic department. In other words, multidisciplinary pain management in the hospital and indeed across Thailand "is still not there," she says.

***Outcome 2:** The MDPC needed full-time staff, especially in its start-up phase.*

At a minimum, the clinic would have benefited from a secretary and additional nurses such as a Registered Nurse and pain nurse. The dismissive attitudes toward pain management by hospital leadership were part of the recruitment problem, and future MDPC staff should be aware that the likelihood of experiencing apathy by other healthcare professionals is high.

Directors may find themselves frustrated when they are eager to work but must think about the needs and pressures of the assisting staff. This stress can be reduced if clinic staff are full-time and assigned solely to the MDPC to ensure optimal patient care, efficient operations, consistent provision of services, and clinic sustainability.

***Outcome 3:** The number of patients treated grew steadily, despite the small clinic staff.*

The clinic experienced steady annual growth from its inception, treating approximately 100 patients during its opening year in the 1990 year and reaching an average of 1,000 between 1992 and 2007. By 2010, the last annual figure seen by Dr. Chaudakshetrin, patient treatment numbers totaled close to 5,000 annually. Staff credits the growth to the rising number of post-op patients whose acute pain was too much for them to handle, as well as its urban location and the hospital's strong general reputation.

Outcome 4: ***The most important service provided by the Siriraj Hospital pain clinic was a full evaluation of each patient to ensure proper diagnosis before any treatments were discussed.***

This should be the priority of any new MDPC, too, according to Dr. Chaudakshetrin. Its achievement could be challenging. The adequate assessment took the combined expertise of MDPC staff, each of whom habitually may turn first to whatever pharmacological treatments have been most common within his or her specialty. This cultural reliance on medicine as a "best" treatment choice historically left nonpharmacological options in "second place." At Siriraj Hospital, regular MDPC team meetings helped ensure all treatment options were considered, and careful, comprehensive assessments were completed on each patient.

Outcome 5: ***If ranked informally on a multidisciplinary pain clinic maturity scale with Levels 1 (Foundational) to 3 (advanced), the Siriraj Hospital Pain Clinic would be Level 2 (Intermediate).***

Dr. Chaudakshetrin credits the diversity of in-patient and out-patient services, a large number of patients served, and positive KPI outcomes as key reasons to consider the clinic at the intermediate level. Opportunities for the clinic to advance to Level 3 exist, perhaps by continuing to increase pain treatment outcome, full-time specialized staff, and receiving consistent, long-term hospital leadership support. The ranking estimates the level of maturity and scope of impact a multidisciplinary pain clinic has in its operations and patient outcomes.

Dr. Chaudakshetrin retired from the Siriraj Hospital clinic in 2012 and now is a visiting consultant to a small, private hospital, providing anesthetic consultations and interventions primarily for patients with cancer pain. She hopes to introduce a multidisciplinary team approach to the facility once students and residents get more involved in their training.

The long-term dedication and resourcefulness of MDPC leaders like Dr. Chaudakshetrin are among the commonalities of case studies exploring successful, sustainable multidisciplinary pain clinics. While the processes vary by which these clinics develop, the consensus around some foundational elements continues to emerge such as the important early inclusion of a psychologist or psychiatrist on the multidisciplinary team, as well as the proactive relationship-building needed to maintain the support of leading decision-makers in hospitals or sponsor institutions.

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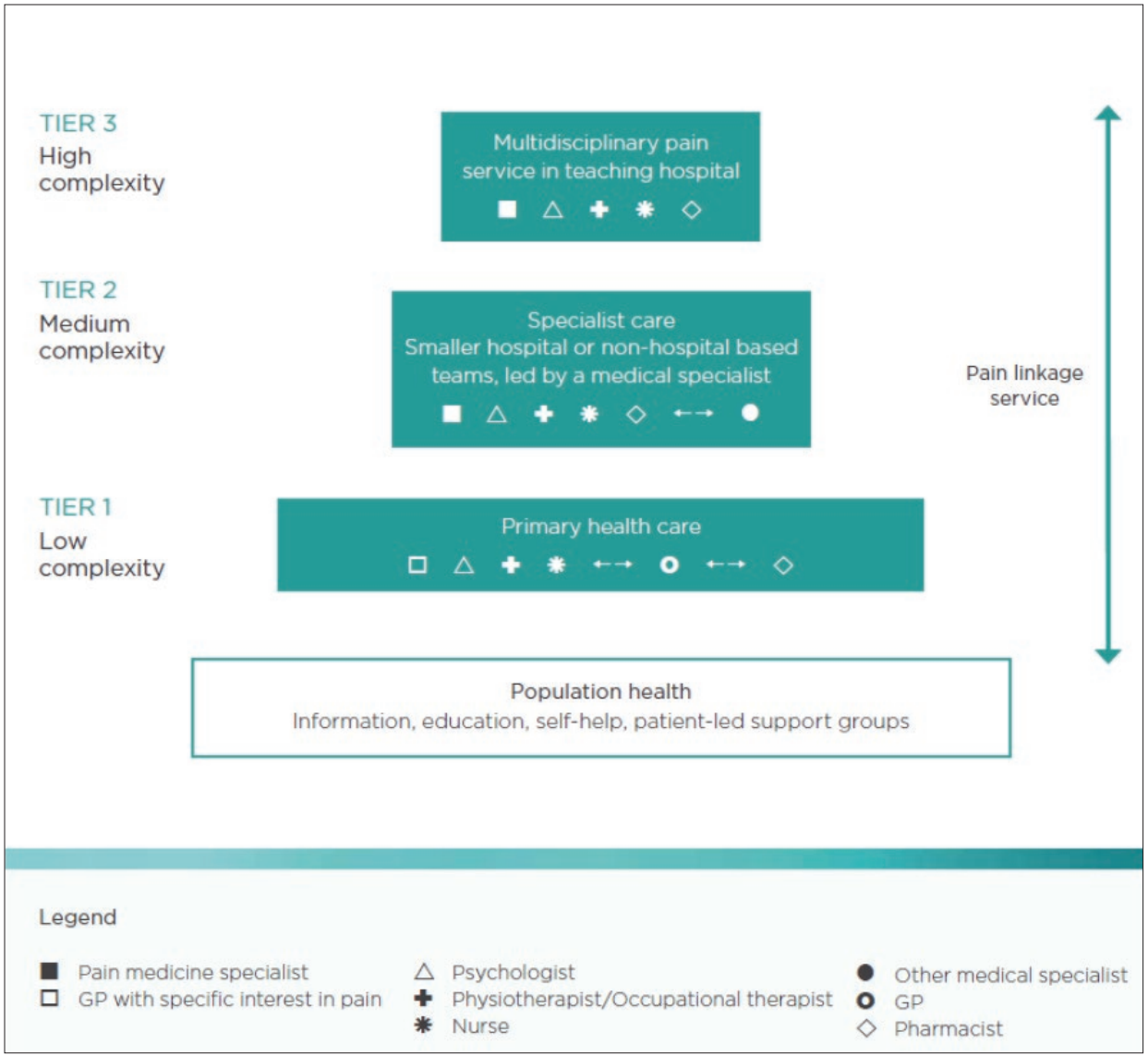
APPENDICES

Appendix 1: Model of Care Example *(from the Agency for Clinical innovation, NSW Ministry of Health, Australia)*



Source: NSW Ministry of Health. NSW Pain Management Pain 2012-2016: NSW Government Response to the Pain Management Taskforce Report. 2012. https://www.health.nsw.gov.au/PainManagement/Publications/government-response-taskforce-report.pdf

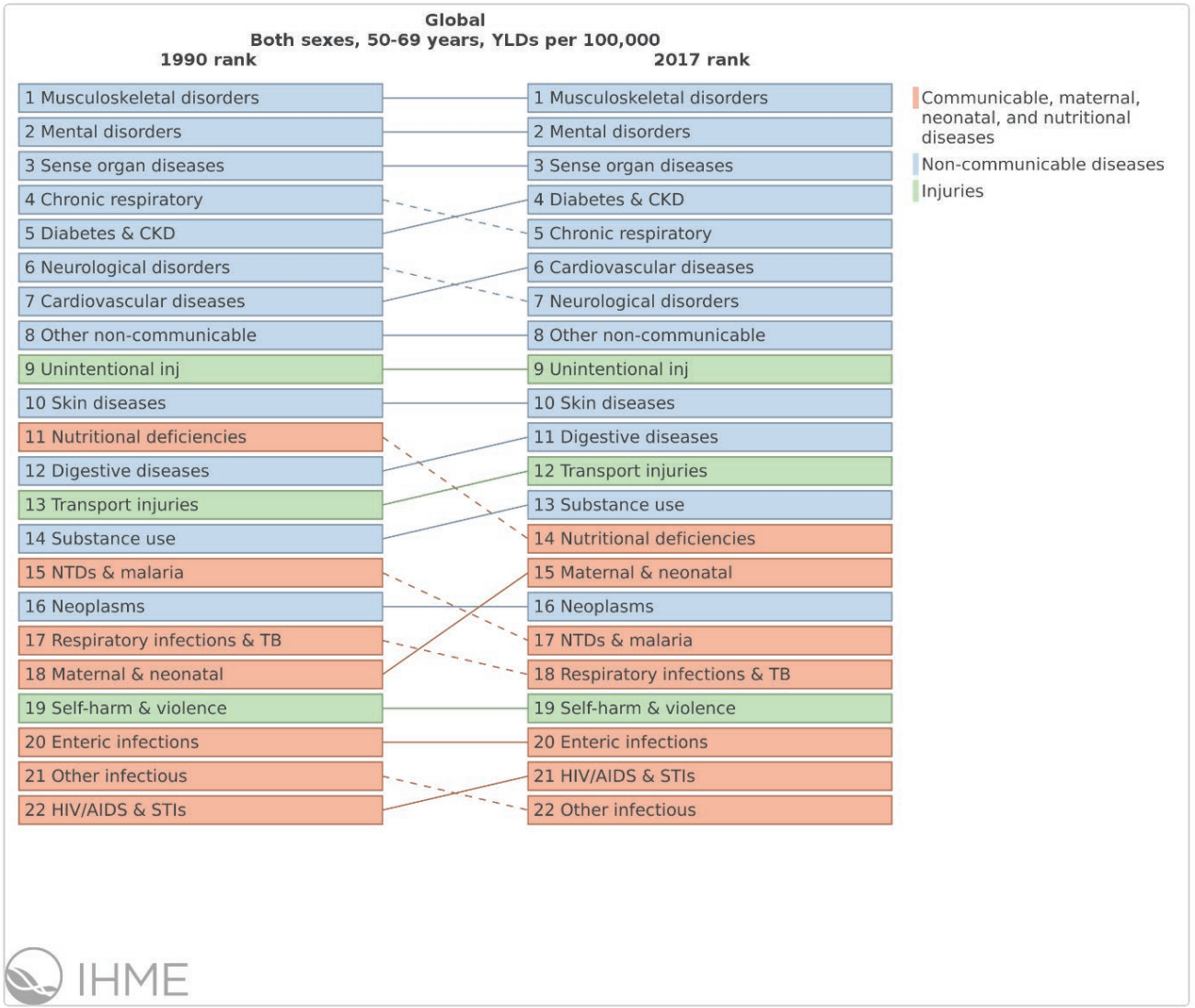
Appendix 2: Global Burden of Pain

Burden of Disease studies are used to rank the effects of diseases on the health of populations for priority setting purposes (Isfeld-Kiely and Balakumar, 2015). The Global Burden of Disease Study (http://www.healthdata.org/gbd) has been the main source of evidence about national and global burden of disease for the last two decades, and the methods developed to estimate burden have been widely adopted by a number of countries for the purposes of local burden of disease estimation.

Burden of disease has two components: fatal burden, where years-of-life expectancy are lost due to a disease, and non-fatal burden, where years of life are lived with disability due to a disease (Gold et al., 2002).

Globally, musculoskeletal disorders are the leading group of causes of non-fatal burden of disease. **Figure 1** shows rankings at two time points for an indicative age group.

Figure 1: Leading Causes of Non-fatal Burden of Disease (Years Lived with Disability), Males and Females aged 50-69 years in 1990 and 2017.



Appendix 2: Global Burden of Pain

The following figures show leading causes of disability (non-fatal) burden of disease in particular Southeast Asian countries in selected age groups using data and graphics from the Global Burden of Disease Study (http://www.healthdata.org/gbd). Created from data visualizations on this website and downloaded January 26, 2019.

The group of musculoskeletal diseases includes low back pain and neck pain. Low back pain is the leading specific condition worldwide, contributing to Years Lived with Disability (non-fatal burden of disease).

Figure 2. Estimated Years Lived with Disability, Males and

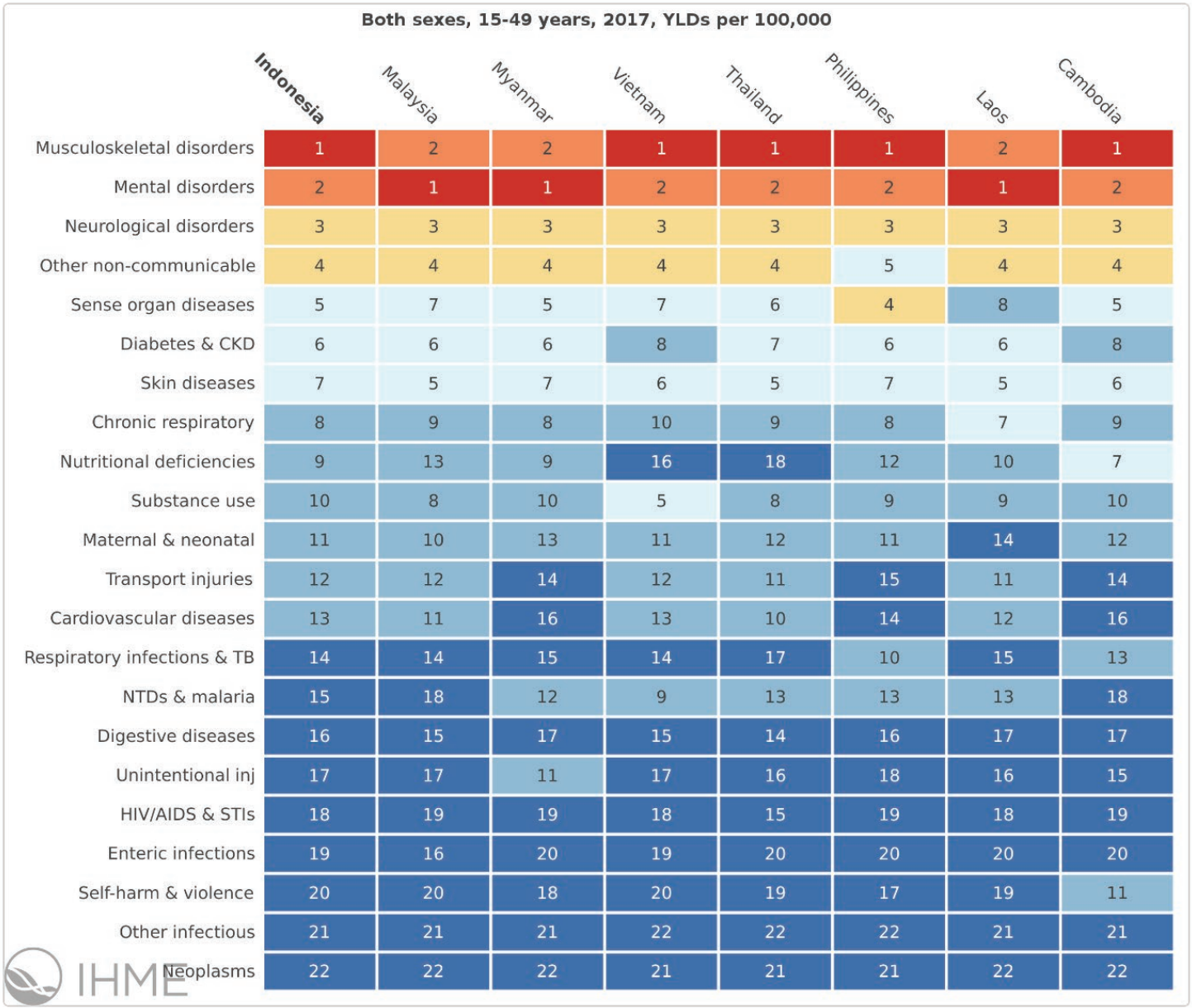


Figure 3. Estimated Years Lived with Disability, Males and Females Aged 50-69 years, 2017.

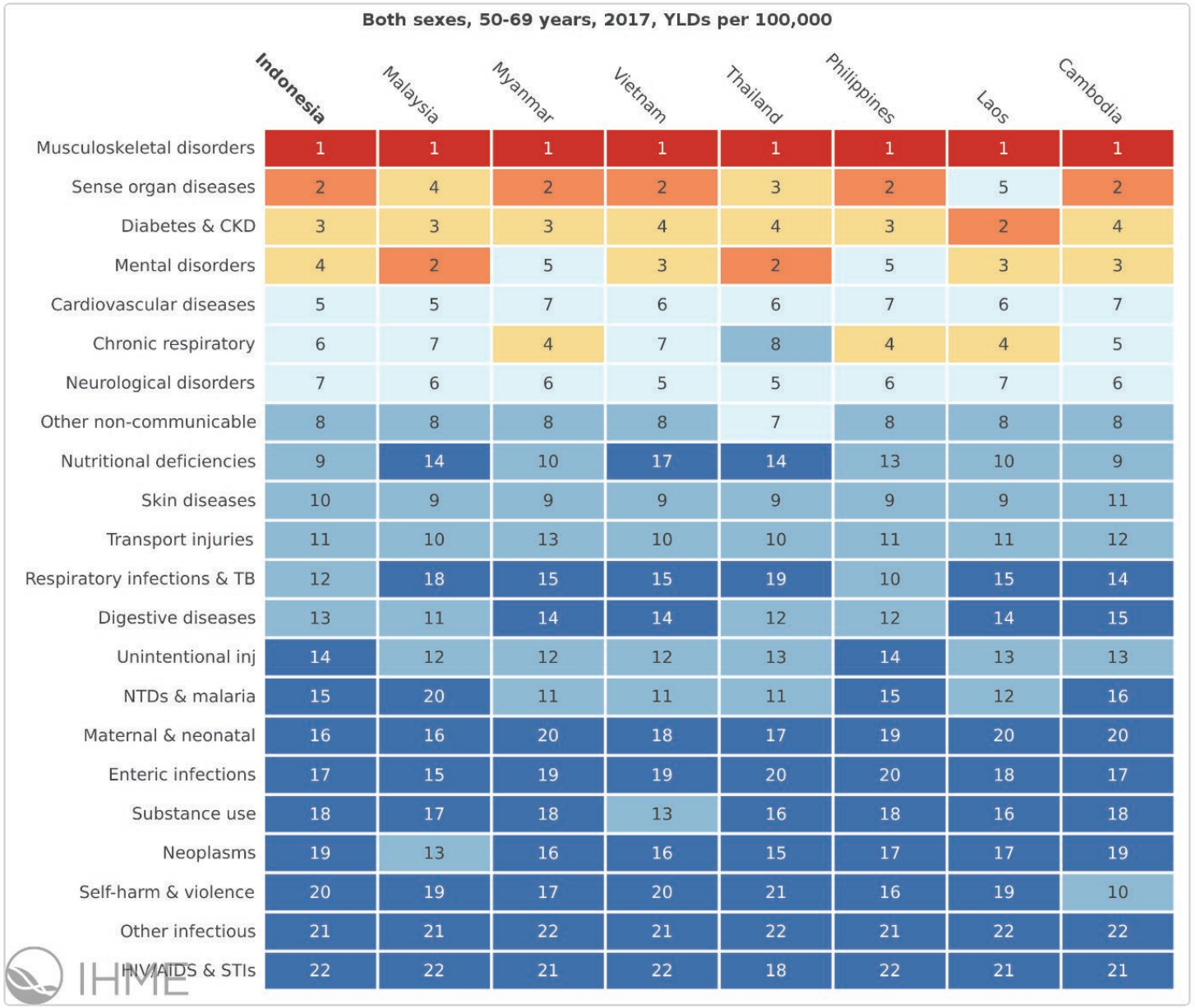
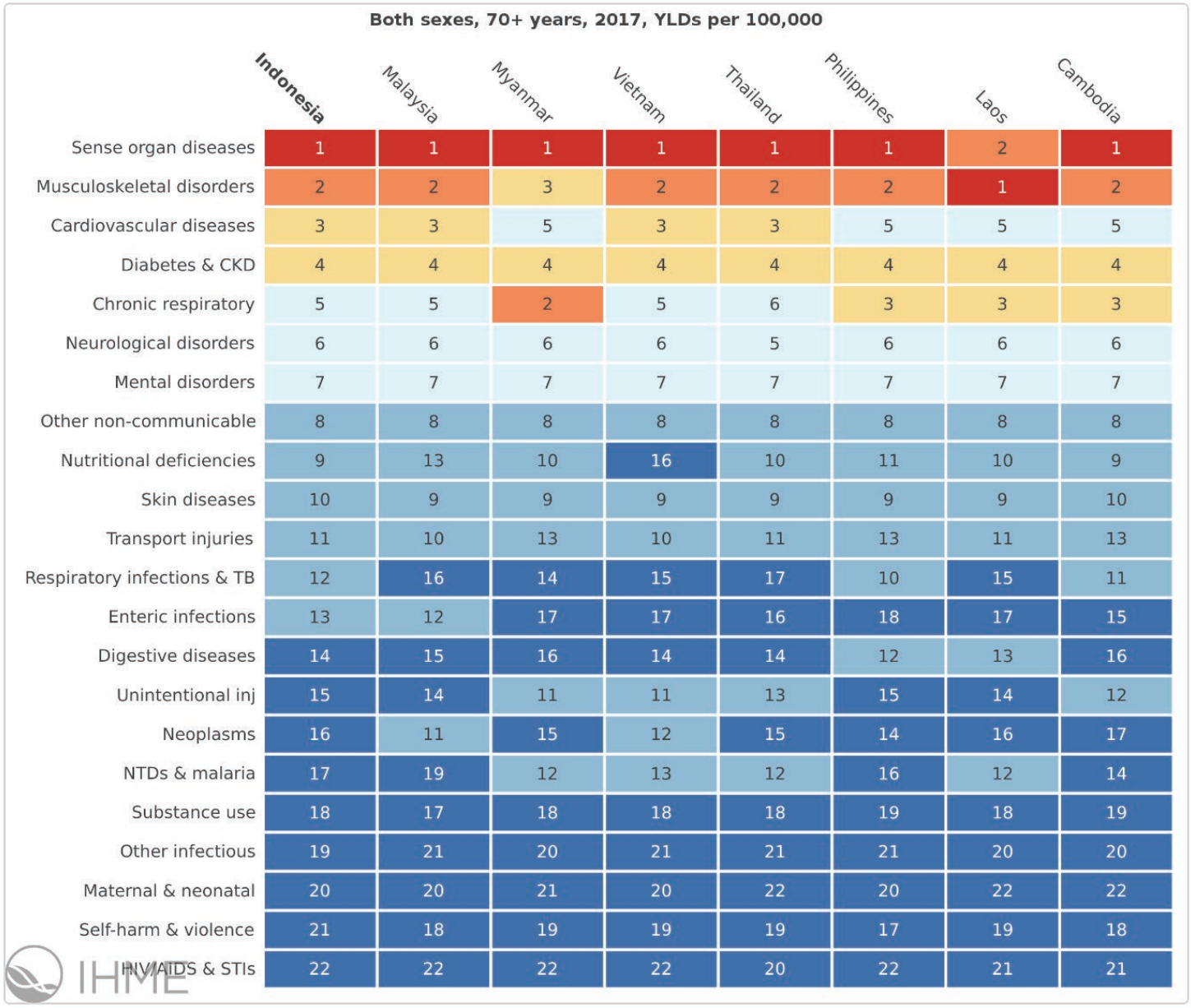


Figure 4. Estimated Years Lived with Disability, Males and Females Aged 70 and Over, 2017.



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Appendix 3: Examples of Position Descriptors for MPC Team

All countries will have their own versions, but these examples from one MPC in Australia are intended as a guide to the sorts of qualifications, duties, and roles that potential personnel might be expected to possess or be able to perform.

1. Pain Medicine Specialist

Position Description: Staff Specialist

Speciality/Sub-Specialty: Pain Medicine

Position Title: Staff Specialist in Pain Medicine

Essential Requirements: National Police Check and Working with Children Check

Primary Purpose: Staff Specialist in Pain Medicine working in the Pain Management Department, Royal North Shore Hospital, Sydney

KEY ACCOUNTABILITIES:

Clinical

- Provide a speciality service consistent within the defined scope of practice for Facility Hospital and where applicable in the community.
- Provide a specialist consultation service as required by other Senior Medical Staff
- Participate in an oncall roster determined by the Head of Department
- Liaise with other health professions involved in patient management and care
- Comply with Hospital/Local health District (LHD)/Ministry of Health policies and procedures regarding the prescription of medications and the ordering of tests
- Supervise and commit to accurate documentation ina nd completion of medical records to reflect clinical decisions, tests, procedures, abd discussions.

Responsilibilities to patients:

- Provide clinical management and timely treatment of patients under your care, both as an inpatients and where applicable in the community under the LHD community care model.
- Perform ward rounds as required for inpatient care as far as possible within the normal working hours of the unit (8.00am to 5.00pm).
- Ensure appropriate arrangements are made for patients on discharge from hospital to maximise continuity of care and good health outcomes.
- Lisaise with patient families and carers as appropriate.
- Liaison with community health services and other government and non-government agencies in the coordinated provision of care.

(continued)

Administrative Matters

- Attend Departmental, Division, and LHD meetings as required
- Participate in LHD and Hospital committees which may include providing expert advice (in conjunction with colleagues) including equipment, clinical service development and future directions.
- Participate in at least 75% of your departmental Morbidity and Mortality meetings
- Participate in clinical quality activities – including peer review, clinical practice audit, Root Cause Analysis, London Protocols, and HEAPs Analysis.
- Provide at least 4 weeks notification to Divisional Manager of planned/intended leave arrangements, ensuring any on-call commitments are covered by an appropriate colleagues by agreement.

Quality and Research Activities

- Initiate and participate in appropriate Departmental and Hospital Quality assurance and risk management projects.
- Particiation in organizational accreditaion processes.
- Participation in Departmental Mortality and Morbidity meetings, Sentinel Event meetings, or Peer Review meetings.
- Systematically review clinical performance of self and Department
- Participate in patient complaint reviews and response to patient complaints.
- Participate in Root Cause Analysis teams as requested.

Supervision, Training and Education

- Involvement in multidisciplinary supervision, training,a nd education – including Nursing, Allied Health, Junior Medical Staff, other members of the multidisciplinary team, and Emergency Department.
- Professional Development, Continuing Education and Maintenance of Standards
- Meet the Recertification and Continuing Professional Standards ofyour College and the Medical Board of Australia.
- Disclose your recertification to the Hospital if asked.

General Duties

- Comply with Acts of Parliament, professional conduct, Health service Code of Conduct, WHS, EEO, Bullying and Harrassment and other LHD policies and procedures.
- Use LHD resources efficiently.

2. Clinical Psychologist

POSITION TITLE: Clinical Psychologist

DEPARTMENT FACILITY: Pain Management

ORGANISATIONAL RELATIONSHIPS *(Insert Org Chart)*

RESPONSIBLE TO:

OPERATIONAL:

PROFESSIONAL:

RESPONSIBLE FOR FOLLOWING STAFF:

PERFORMANCE REVIEW & DEVELOPMENT PLANNING:

3 months after commencement: (insert date) Annual: (insert date)

QUALIFICATIONS, SKILLS & EXPERIENCE:

Essential: (Qualifications, experience or requirements which must be possessed by the occupant to effectively perform the duties and responsibilities).

- Master of Clinical Psychology (or equivalent)
- Completed at least two years supervised work as a Psychologist post-Master of Clinical Psychology degree
- Good communication skills
- Demonstrated ability to work cooperatively with other staff
- Experience in group and individual cognitive-behavioural therapies

Desirable: (Qualifications, experience or requirements which would greatly assist the occupant, but their absence would not prevent the effective discharge of the responsibilities off their job within an acceptable period).

- Experience in assessment and management of people with chronic pain conditions
- Experience in treating depression, anxiety and adjustment disorders, including PTSD
- Experience in assessing and managing people with chronic illnesses.
- Experience in managing people with Personality disorders

(continued)

Appendix 3: Examples of Position Descriptors for MPC Team

POSITION OVERVIEW: OBJECTIVE, NATURE & SCOPE

Organisational Context: Member of multidisciplinary team in Department of Pain Management.

This position is divided between direct patient service activities associated with the Department's pain management programs, as well as assessment and treatment of individual patients referred to the Department.

ROLE RESPONSIBILITIES:

Duties:

1. To conduct psychological assessments of patients attending the Pain Management Department, present the findings of such assessments to multidisciplinary meetings, to write reports based on these assessments and to maintain patients' notes.
2. To implement a group cognitive-behavioural pain management program as required by the Program Director.
3. To conduct individual psychological therapy as required.
4. To actively and cooperatively participate as a member of a multidisciplinary team.
5. To compile outcome and follow-up reports, liaise with other health care providers in relation to patients seen at the Pain Management Department.
6. To assist the Program Director, Program Coordinators and Program Office Manager in the organisation and operation of the pain management programs.
7. To participate in research and quality assurance activities within the Department.
8. To participate in educational activities both in and outside the Department, including supervision of trainee clinical psychologists.
9. Other duties as required by the Director of the Pain Management programs.

3. Physiotherapist

Level 6 Physiotherapist

Essential Criteria:

- Current **(Australian)** Physiotherapy qualification and registration.
- Post-graduate education in Pain Management and membership of relevant professional bodies.
- Extensive experience of working in a complex and chronic pain setting without direct supervision, in clinical, educational and administrative/organisational roles.
- Demonstrated ability to perform complex musculoskeletal and bio-psycho-social assessments, including triage.
- Demonstrated ability to manage patients according to current evidence-based models of care within a patient centred framework; including cognitive-behavioural management of chronic pain suffers in a multi-disciplinary setting.
- Proven experience in having worked successfully in a multi-disciplinary team with the communication and interdisciplinary skills to facilitate this role.
- Proven ability to develop novel services and pathways for integrated care throughout the public hospital system, including skills in leading and coordinating multidisciplinary care.
- Experience in the delivery of clinical education and mentoring to undergraduate students, post-graduate students, physiotherapists and other medical and allied health professionals, locally, nationally and internationally.
- Evidence of past and current participation in the preparation and delivery of novel forms of education, and design, implementation and evaluation of quality assurance and audit projects.
- Proven research skills and a commitment to ongoing research in pain management and presentations at *National* and International conferences.
- Understanding local legislative systems, such as WorkCover, Motor Accidents Authority.

Desirable Criteria:

- Publications on clinical topics**.**
- International experience in pain unit/s in large teaching hospitals.
- Experience in supporting developing programs.

4. Nurse

Registered Nurse/Coordinator - Full-Time

A rare nursing opportunity to work as a key player in a "leading-edge", multidisciplinary team. The team is responsible for providing treatment to patients with a range of chronic pain conditions using an intensive, structured program. The RN works alongside a clinical psychologist, physiotherapist and pain specialist in an extremely integrated way. The RN is responsible for both direct patient care, individually and in groups, as well as administrative and coordinating roles within the clinic. Training and supervision for this specialised role will be provided.

Essential Criteria:

- Qualification: Registered nurse
- Demonstrated effective communication skills and demonstrated ability to work effectively in a collaborative, interdisciplinary manner
- Demonstrated effective skills in office administration
- Demonstrated ability to deal effectively with emotionally distressed patients
- Record of undertaking professional skills development since registration
- Willingness to obtain advanced training in chronic pain management

Desirable Criteria:

- Experience in chronic pain management
- Experience as a member of a multidisciplinary team conducting pain management
- or rehabilitation programs
- Experience in using cognitive-behavioural methods of counselling.
- Adult education teaching experience.
- Qualifications in recognised Pain Management education

5. Administration Officer

Purpose of position

The position is to provide support and advice to support the smooth administration of the MPC.

Key Accountabilities

- Ensure the MPC office operates efficiently and effectively, and is customer-focused
- Provide timely, accurate information and advice to the MPC Head on the status and progress of administrative tasks, including identifying factors that may impact on the completion of these tasks
- Develop and maintain effective management information/filing systems;
- Manage physical and other resources to ensure efficient delivery of office and administrative services and successful completion of projects
- Ensure office/administrative support service continuity across leave periods, allocation of workload
- Adherence to OH&S, maintenance and audit requirements of office area
- Filing and document management
- Internal and external departmental liaison re essential paperwork (e.g. HR, Finance, Fund raising, etc)
- Ensure monitoring of required stock supports the service area.

Operational/Advisory:

- Responsible for making and monitoring clinic bookings
- Respond to queries from patients, health professionals or third-party payers (in person, in writing or by telephone) regarding MPC
- Prepare and send out MPC reports to various recipients as required.
- Prepare and send out invoices for MPC services and keep database of invoices raised and payments received.
- Maintain clinic records of all patients attending MPC.
- Monitor, assess and review IT needs of the department and coordinate training when required.
- Utilise software applications to report maintenance and IT faults to the relevant helpdesks.
- Organization of meetings / functions - contacting all parties/ venue/ equipment arrangements/ flyers / RSVPs etc
- Attendance as minute taker to meetings as required

Appendix 4: Essential Pain Management (EPM)

This course in the basic elements of pain mangement can be delivered in an interactive workshop style session in either 4 or 8 hours on one day. It includes discussions and practice of the different tasks in relation to assessing and treatment planning for both acute and chronic pain cases. Usually at least two trained facilitators lead the sessions with small groups of students and health professionals. It is aimed primarily at medical students and medical practitoners, but members of other health disciplines (nurses, physiotherapists, psychologists, etc.) can participate as well.

Multiple reasons for inadequate pain management have been identified, including differing cultural attitudes towards pain, inadequate healthcare worker numbers, poor knowledge and attitudes amongst healthcare workers, and lack of access to appropriate treatments such as psychological and physical therapy services with over reliance on pharmaceutical options. Pain management education is often inadequate, and it is likely that this contributes to poor pain management in the clinic.

Essential Pain Management (EPM) is a short, easily deliverable training program designed to improve pain management worldwide. EPM provides a systematic approach for managing patients in pain. EPM aims to:

- Improve pain knowledge.
- Teach health workers to Recognize, Assess and Treat pain (RAT).

The EPM Workshop is a one-day program of interactive lectures and group discussions. Participants learn the basics of pain management, apply the RAT approach during case discussions, and problem-solve pain management barriers. The classification of pain is simplified and participants are encouraged to consider non-pharmacological as well as pharmacological treatments.

EPM has been delivered in over 60 countries around the world and been shown to be acceptable to a range of health care workers. (Nurses, registered and nurse aides, junior and senior medical practitioners and undergraduate students)

Marun, G. N., Morriss, W. W., Lim, J. S., Morriss, J. L., & Goucke, C. R. (2020). Addressing the Challenge of Pain Education in Low-Resource Countries: Essential Pain Management in Papua New Guinea. *Anesthesia and Analgesia*, *130*(6), 1608-1615. https://doi.org/10.1213/ANE.0000000000004742

Appendix 5: Online resources for further pain education and skills training

The following list is not intended to be exhaustive, but it does provide information for those seeking further pain education either through formal, university or via educational materials from conferences and webinars available online via the IASP website. Two online post-graduate (post-licensure) degree courses are listed for health professionals in the Asian/SE Asian region. See below for contact details. In addition to educational resources, links to online pain management skills training courses are also provided below. The skills training may be accessed by health professionals from all disciplines and we have provided only those that are available online rather than in-person workshops which may be conducted in each country in the region. The Essential Pain Management (EPM) course (see **Appendix 4**) is an example of an in-person one day workshop that has been incorporated in the Pain Toolkit Project.

Pain Education

Formal post-graduate pain education at Masters and Diploma levels is available online via the University of Santo Tomas (Manilla) and the University of Sydney. These courses are based closely on the IASP Curriculum for Interprofessional Pain Education. The courses are fee-paying and more details can be obtained directly via their websites:

University of Santo Tomas:

Contact person: Prof. Jocelyn C. Que,

Center for Pain Medicine, University of Santo Tomas Faculty of Medicine and Surgery
Manila, Philippines 1015
Tel: (632) 406-1611 loc. 8379
Email: jcque@ust.edu.ph / joycque@gmail.com

University of Sydney:

Contact Person: Dr Elizabeth Devonshire

Course Co-ordinator, Graduate Studies in Pain Management
Pain Education Unit
Faculty of Medicine and Health
Pain Management Research Institute, Royal North Shore Hospital
Sydney, NSW 2065 AUSTRALIA
Tel: +61 2 9463 1529
Email: liz.devonshire@sydney.edu.au
Web: **sydney.edu.au/medicine/pmri**

Other educational materials can be found on the IASP website via PERC (the Pain Education Resource Centre). This material is open access for IASP members and provides a large repository of webinar, workshop, and conference presentations by IASP members. However, the PERC materials are not a formal education course (i.e. they do not result in a university degree or diploma), but they can contribute to Continuing Professional Education (or Continuing Medical Education) requirements for all health professionals.

Web: **https://www.iasp-pain.org/Education/Content.aspx?ItemNumber=8610&navItemNumber=8609**

Skills training

At present there is only one online skills training course available in the Asian/SE Asian region. This is conducted by the Pain Management Research Institute, University of Sydney. It is called **Putting CBT Skills into Action**.

The course provides online interactive webinar training (weekly 90-minute sessions) with 6 sessions, followed by a final (7th) session 4 weeks later for the assessment of competency in the skills taught. In addition to the online sessions, participants are expected to practice the skills taught between sessions, ideally at their workplaces. This is likely to amount to around 20 to 30 hours over the course.

(continued)

Appendix 5: Online resources for further pain education and skills training

The participants are provided with a manual and a recording of each session (in case they miss one and for revision). Videos are also used to augment the training and these too are accessible online.

The same course materials in these online webinars were used in the 5-day workshop in Myanmar, in addition to an evaluation of competencies in the skills taught. A certificate of competency is provided at the successful completion of the course. It is intended that this training would fulfill the requirements for Tier 2 training.

When conducted from Sydney, the course is held in English, but it is intended to make training in conducting the course available to local leaders in pain management so that they can qualify to conduct the courses in their own countries in the local languages.

Contact Person: Dr Elizabeth Devonshire

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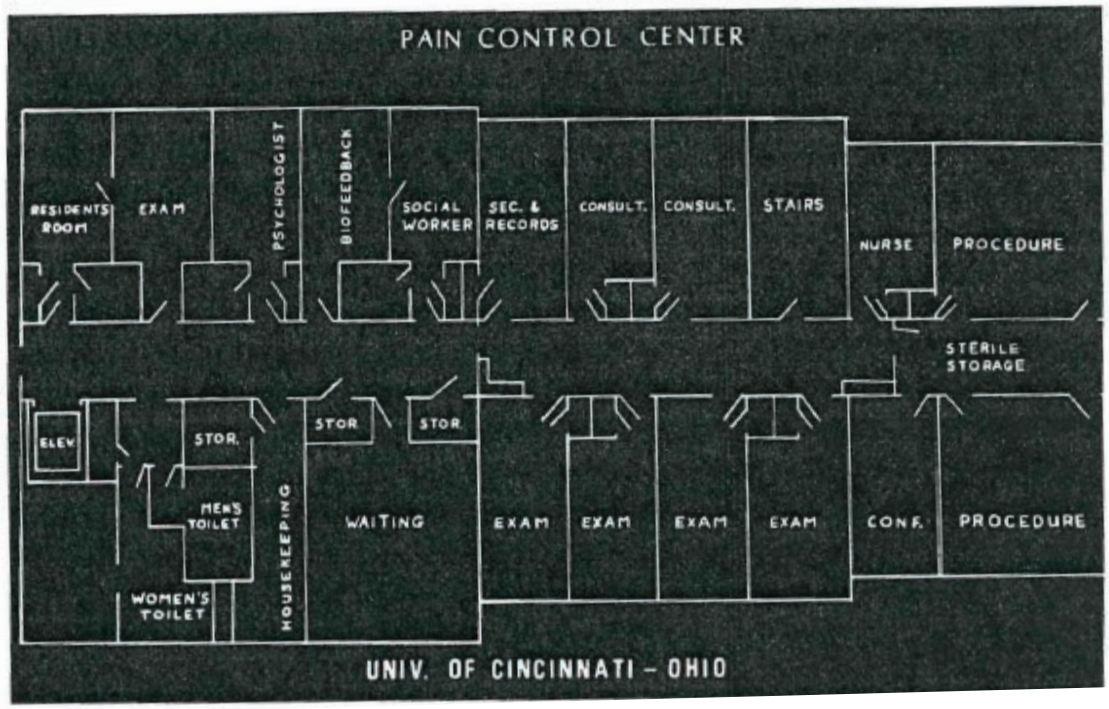
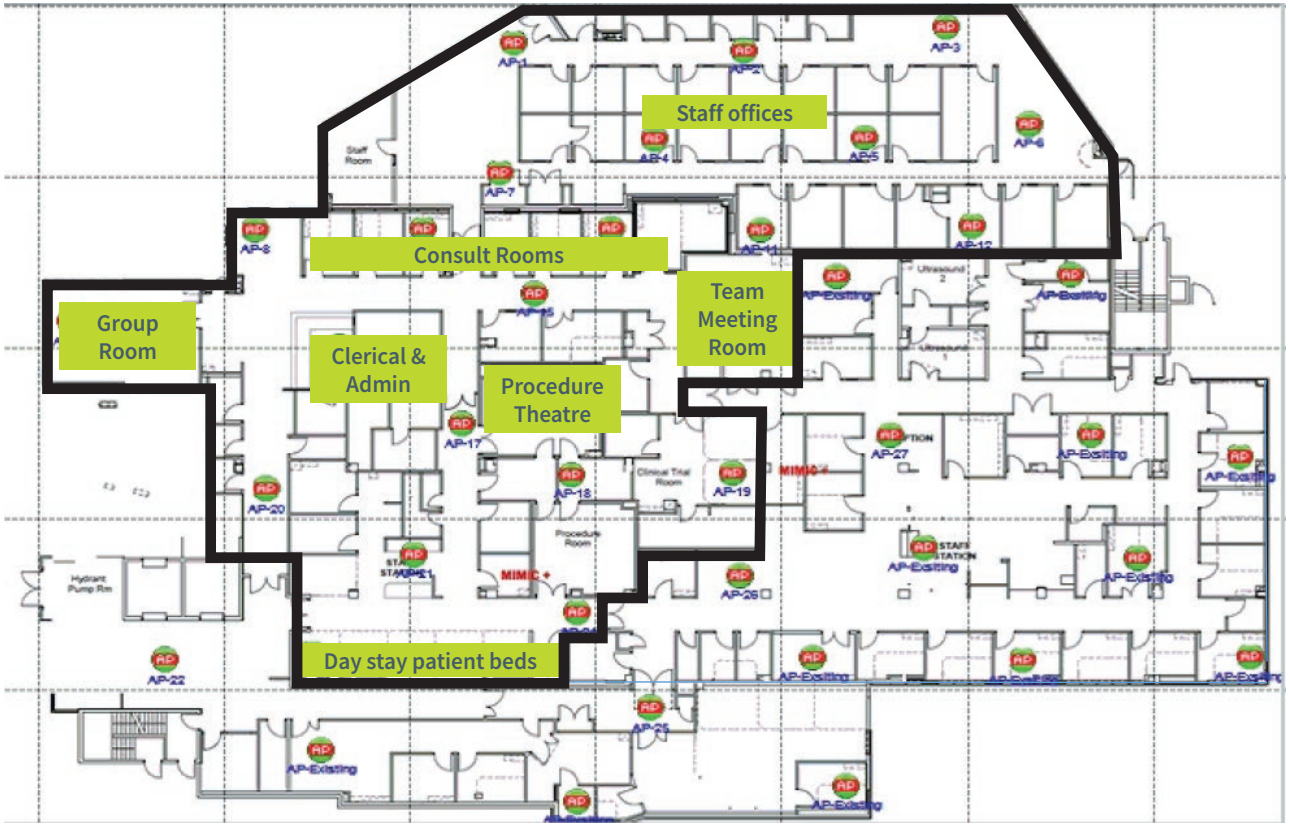
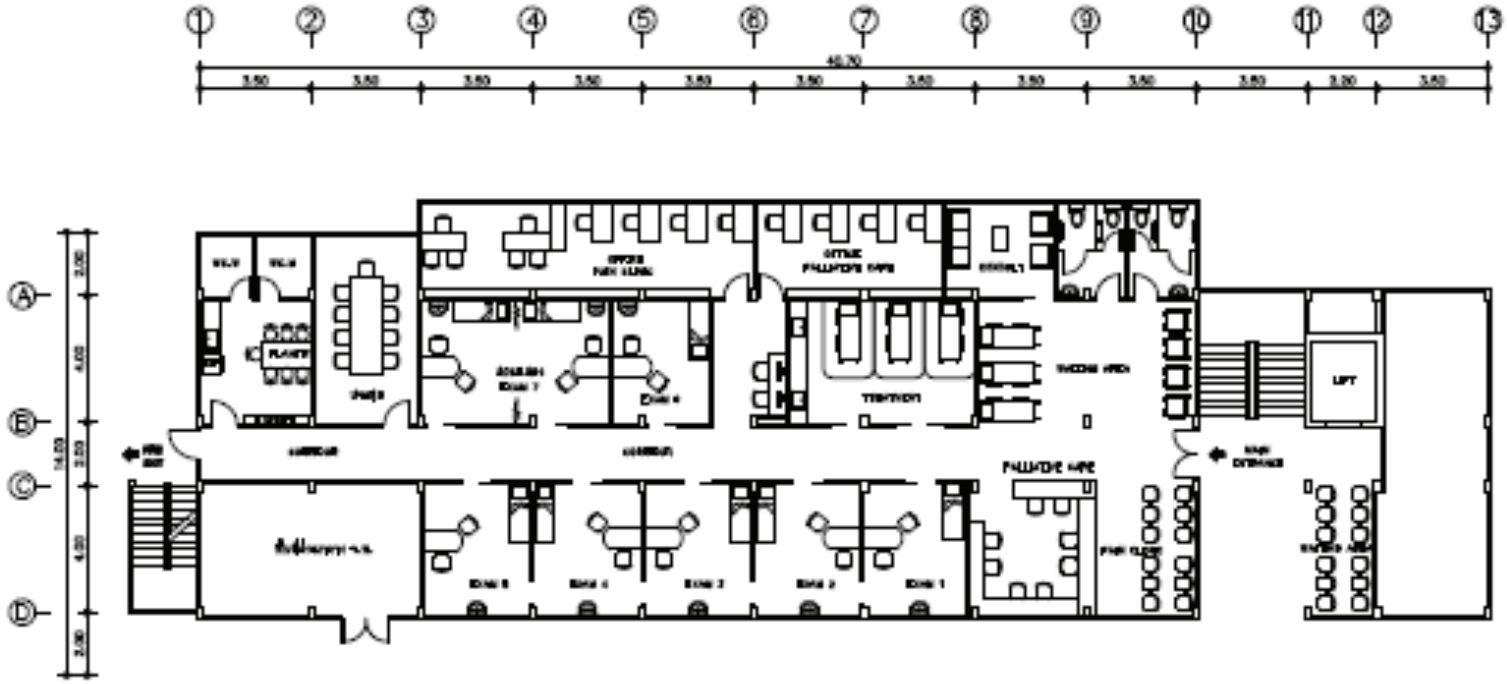
Physical facilities of a university-based comprehensive pain control center.



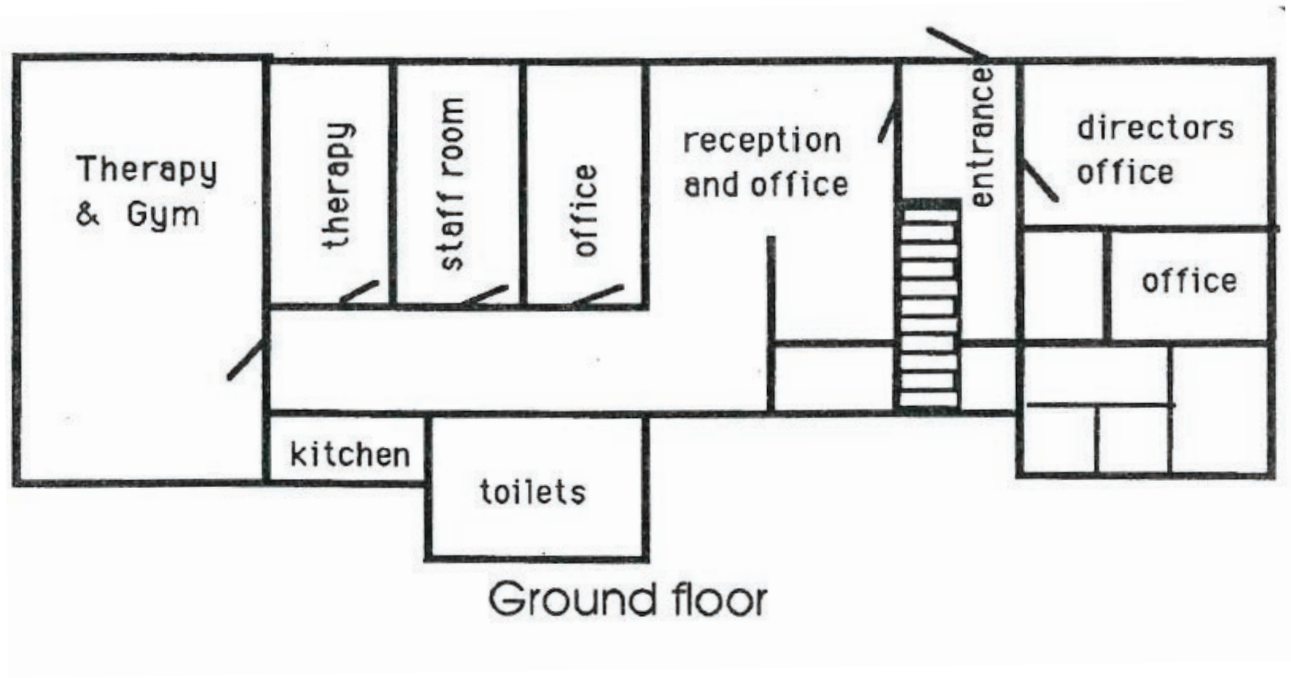
Pain Management Research Centre, Royal North Shore Hospital, Sydney



Siriraj Hospital Clinic Layout



Group Pain Management Unit (INPUT), St Thomas' Hospital, London



Appendix 7: List of Medicines needed for Multidisciplinary Pain Clinic

Medicines used in a multidisciplinary pain clinic are listed below.*

A. Medicines for pain relief
   1. Simple analgesics
      a. Paracetamol / Acetaminophen
      b. Non-Steroidal Anti Inflammatory Medicines (NSAIMs) and Cyclo-oxygenase-2 inhibitors e.g. Aspirin / Acetylsalicylic Acid, Ibuprofen, Diclofenac, Mefenamic acid, Naproxen, Celecoxib, Etoricoxib
   2. Opioids
      a. Codeine
      b. Morphine
      c. Oxycodone
      d. Fentanyl (transdermal)
      e. Tramadol
      f. Methadone
      g. Buprenorphine (transdermal)
   3. Other / Adjuvant analgesics
      a. Antineuropathic agents, e.g. amitriptyline, nortriptyline, gabapentin, pregabalin,, carbamazepine
      b. Ketamine
      c. Local anaesthetics (Lignocaine, Bupivacaine)
      d. Clonidine
      e. Entonox

B. Medicines for treatment of side effects of pain medicines
   1. Anti emetics
      a. Metoclopramide
      b. Ondansetron
      c. Haloperidol
      d. Hyoscine
   2. Medicines for treatment of constipation
      a. Bisacodyl
      b. Senna
      c. Lactulose
   3. Antipruritic agents
      a. Diphenhydramine
      b. Loratadine
      c. Corticosteroids
   4. Reversal agent for opioid-induced ventilatory impairment
      a. Naloxone

C. Medicines for treatment of symptoms other than pain (for clinics that also provide palliative medicine services e.g. for treatment of patients with advanced cancer). These include medicines for treatment of anxiety / restlessness, depression, insomnia, diarrhoea, anorexia and other symptoms.

**Please note that this is not an exhaustive list, but is meant to provide an example for those who are setting up a multidisciplinary pain clinic.*

The WHO Model List of Essential Medicines

(**https://apps.who.int/iris/bitstream/handle/10665/325771/WHO-MVP-EMP-IAU-2019.06-eng.pdf**) has a list of 6 medicines for pain and 15 medicines for other common symptoms in palliative care under section 2 (Medicines for Pain and Palliaative Care).

However, there are many other medicines that are commonly used in many multidisciplinary pain clinics which are not listed here. The International Association for Hospice and Palliative Care (IAHPC) has published a list which includes 33 medicines for pain and palliative care. This can be found in *De Lima L. The international association for hospice and palliative care list of essential medicines for palliative care. Ann Oncol 2007;18:395-399.*

The WHO document only lists the name of the medicine and the formulations available, while the IAHPC publication also lists the clinical indication for the medication. Neither list gives the recommended dose of medicine for pain and other symptoms.

Most countries have their own national formulary which will also list the recommended doses of medicines — these should be consulted and compiled for each pain clinic, according to the availability of medicines in the country.

Appendix 8: Examples of Pain Scales and Questionnaires

References for multiple scales are provided in **Chapter 4**. All are covered by copyright rules, and some incur fees for use, but most are in the public domain and free to use (with acknowledgements). Increasingly, translated versions of these measures are becoming available and, providing the translations have been done properly and published, they are likely to be preferable to the English versions in countries where English is not widely spoken. The English versions of four commonly-used measures are presented here as an example of what can be done for the collection of a standardised set of data in a MPC. Shorter versions of some (e.g. the **Pain Self-Efficacy Questionnaire, and Pain Catastrophizing Questionnaire**) are also available and their psychometric properties have been published. Translations of these two measures are also available in many languages.

Electronic Pain Patient Outcomes Collaboration (ePPOC)

The self-report measures used across Australia and New Zealand by over 90 pain services have been supported by the Australian and New Zealand Pain Societies (both IASP Chapters) as well as the Faculty of Pain Medicine (Australia and New Zealand College of Anaesthetists, ANZCA). An account of the establishment of this project can be found in Tardif et al (2017), and normative data on these measures (all of which are in the public domain and are free to use providing copyright rules are respected) from over 13,000 patients with chronic pain are reported by Nicholas et al. (2019; 2008).

The initial ePPOC measures and questions are included here as an example only. More information can be obtained from the authors and from the developers of the individual questionnaires, as well as publications on outcome measures referred to in **Chapter 4**.

References:

Cleeland CS, Ryan KM. Pain assessment: global use of the Brief Pain Inventory. Ann Acad Med Singap 1994;23:129–38.

Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. Br J Clin Psychol 2005;44: 227–39.

Nicholas MK. The pain self-efficacy questionnaire: taking pain into account. Eur J Pain 2007;11:153–63.

Nicholas MK., et al. Normative data for common pain measures in chronic pain clinic populations: closing a gap for clinicians and researchers. PAIN 2019;160: 1156–1165: **http://dx.doi.org/10.1097/j.pain.0000000000001496**).

Nicholas MK, Asghari A, Blyth FM. What do the numbers mean? Normative data in chronic pain measures. PAIN 2008;134:158–73.

Nicholas MK et al. A 2-Item Short Form of the Pain Self-Efficacy Questionnaire: Development and Psychometric Evaluation of PSEQ-2. J of Pain 2015; 16: 53-163

Sullivan MJL, Bishop SR, Pivik J. The Pain Catastrophizing Scale: development and validation. Psychol Assess 1995;7:524–32.

Sheung-Tak Cheng, et al. The Pain Catastrophizing Scale—short form: psychometric properties and threshold for identifying high-risk individuals. International Psychogeriatrics 2019; 31(11): 1665–1674 doi:10.1017/S1041610219000024

Tardif H., et al. Establishment of the Australasian Electronic Persistent Pain Outcomes Collaboration. Pain Medicine 2017; 18: 1007–1018; doi:10.1093/pm/pnw2012017.

(continued)

[INSERT SERVICE NAME OR LOGO]

REFERRAL QUESTIONNAIRE

Section 1 – Your details

Title ☐ Mr ☐ Mrs ☐ Ms ☐ Miss	Family name *(surname)*	Given name(s)
Gender ☐ Male ☐ Female	Date of birth *(dd/mm/yyyy)* __ __ /__ __ / __ __ __ __	Today's date *(dd/mm/yyyy)* __ __ /__ __ / __ __ __ __

Address Number and Street: .....

City/Suburb: ..... Postcode: ..... State: .....

Phone Home: ..... Work: ..... Mobile: .....

Email address .....

Country of Birth ☐ Australia ☐ New Zealand ☐ Other *(please specify)*.....

Do you require an interpreter? ☐ Yes ☐ No

If you answered yes, please specify the language .....

Are you hearing or sight impaired? ☐ Yes ☐ No

Do you require help with written or spoken communication? ☐ Yes ☐ No

Height *(in cm)* | **Weight** *(in kg)*

Are you of Aboriginal or Torres Strait Islander origin? *(more than one may be ticked)*

☐ No ☐ Yes, Aboriginal ☐ Yes, Torres Strait Islander

Have you ever served in the Australian Defence Force? ☐ Yes ☐ No

Are you a client of the Department of Veterans' Affairs or have you received a benefit or support from the Department of Veterans' Affairs? ☐ Yes ☐ No

Is there a compensation case relating to this episode? ☐ Yes ☐ No

(If yes, record the type of compensation): ☐ Worker's Compensation ☐ Public Liability ☐ Motor Vehicle ☐ Other .....

How did your main pain begin?

☐ Injury at home ☐ Motor vehicle crash ☐ After surgery
☐ Injury at work/school ☐ Cancer ☐ No obvious cause
☐ Injury in another setting ☐ Medical condition other than cancer ☐ Other *(please specify)* .....

How long has your main pain been present? *(Tick **one** box only)*

☐ Less than 3 months ☐ 12 months to 2 years ☐ More than 5 years
☐ 3 to 12 months ☐ 2 to 5 years

Which statement best describes your pain? *(Tick **one** box only)*

☐ Always present (always the same intensity)
☐ Always present (level of pain varies)
☐ Often present (pain free periods last less than 6 hours)
☐ Occasionally present (pain occurs once to several times per day, lasting up to an hour)
☐ Rarely present (pain occurs every few days or weeks)

Do you have any of the following?

☐ A mental health condition, in particular: ☐ PTSD ☐ Anxiety ☐ Depression
Other *(please specify)* .....
☐ Arthritis *(including Rheumatoid/Osteoarthritis)*
☐ Muscle, bone and joint problems other than arthritis *(including Osteoporosis, Fibromyalgia)*
☐ Heart and circulation problems *(including Heart Disease, Pacemaker, Blood Disease)*
In particular specify if you have: ☐ High Blood Pressure ☐ High Cholesterol
☐ Diabetes
☐ Digestive problems *(including IBS, GORD, Stomach Ulcers, Reflux, Bowel Disease)*
☐ Respiratory problems *(including Asthma, Lung Disease, COPD, Sleep Apnoea)*
☐ Neurological problems *(including Stroke, Epilepsy, Multiple Sclerosis, Parkinson's Disease)*
☐ Cancer
☐ Liver, kidney and pancreas problems *(including Pancreatitis, Kidney Disease)*
☐ Thyroid problems *(including Hyperactive or Hypoactive Thyroid, Graves' Disease)*
☐ Any other medical conditions *(please specify)* .....
.....

Health care ***(other than your visits to the pain clinic)***

1. How many times in the past 3 months have you seen a general practitioner in regard to your pain? ..... times
2. How many times in the past 3 months have you seen a medical specialist (e.g. orthopaedic surgeon) in regard to your pain? ..... times
3. How many times in the past 3 months have you seen health professionals other than doctors (e.g. physiotherapist, chiropractor, psychologist) in regard to your pain? ..... times
4. How many times in the past 3 months have you visited a hospital emergency department in regard to your pain? *(Include all visits, regardless of whether or not you were admitted to the hospital from the emergency department)* ..... times
5. How many times in the past 3 months have you been admitted to hospital as an inpatient because of your pain? ..... times
6. How many diagnostic tests (e.g. X-rays, scans) have you had in the last 3 months relating to your pain? ..... tests

(continued)

Section 2 – Your work

Are you currently employed (working for pay)?

☐ Yes - If *yes*, are you:

- ☐ Working full-time
- ☐ Working part-time

Please answer the questions below

☐ No - If *no*, are you:

(tick ***one*** only, then go straight to **Section 3**)

- ☐ Unable to work due to a condition other than pain
- ☐ Unable to work due to pain
- ☐ Not working by choice (student, retired, homemaker)
- ☐ Seeking employment (I consider myself able to work but cannot find a job)

During the past seven days, how many hours did you miss from work because of problems associated with your pain?

(Include hours you missed on sick days, times you went in late, left early, etc. because of your pain. *Do not include time you missed to attend this pain clinic).*

..... hours

During the past seven days, how many hours did you actually work?

*(If '0' skip the next question and go to **Section 3**)*

..... hours

During the past seven days, how much did your pain affect your productivity while you were working?

Think about days you were limited in the amount or kind of work you could do, days you accomplished less than you would like, or days you could not do your work as carefully as usual.

If pain affected your work only a little, choose a low number.
Choose a high number if pain affected your work a great deal.

Consider only how much pain affected productivity while you were working

Pain had no effect on my work — 0 1 2 3 4 5 6 7 8 9 10 — Pain completely prevented me from working

CIRCLE A NUMBER

Section 3 – Medication use

Are you taking any medications?

☐ No *(please go to **Section 4**)*

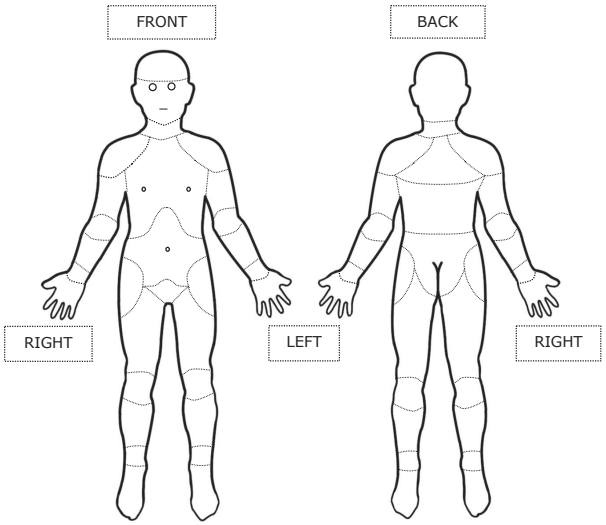
☐ Yes *(Please list all the medications you are taking. Include both prescription and over-the-counter medicines)*

Medicine name *(as on the label)*	Medicine strength *(as on the label)*	How many do you take per day?	How many days per week do you take this medication?

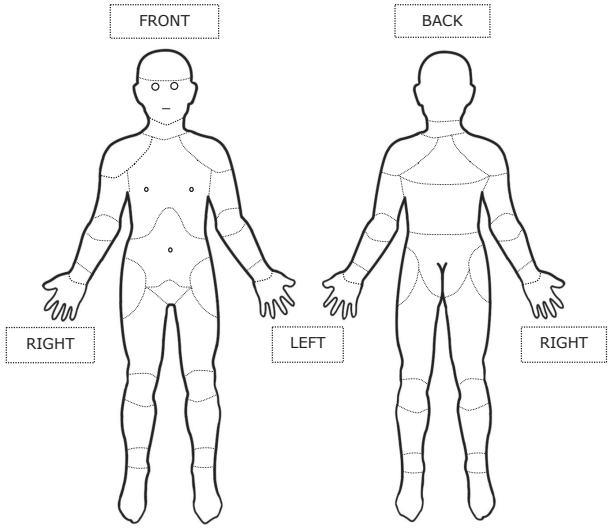
(continued)

Section 4 – Pain intensity and interference

On the diagram below, shade in ALL the areas where you feel pain.



On the diagram below, put an X on the ONE area that hurts most.



Please rate your pain by circling the one number that best describes the following:

1. Your pain at its *worst* in the last week?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
2. Your pain at its *least* in the last week?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
3. Your pain on *average*?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
4. How much pain do you have *right now*?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine

During the past week, how much has pain interfered with the following:

1. Your general activity?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
2. Your mood?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
3. Your walking ability?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
4. Your normal work (both outside the home and housework)?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
5. Your relations with other people?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
6. Your sleep?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
7. Your enjoyment of life?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes

(continued)

Section 5 – DASS21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of the time
3 Applied to me very much, or most of the time

	Not at all	Some of the time	A good part of the time	Most of the time
1. I found it hard to wind down	0	1	2	3
2. I was aware of dryness of my mouth	0	1	2	3
3. I couldn't seem to experience any positive feeling at all	0	1	2	3
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5. I found it difficult to work up the initiative to do things	0	1	2	3
6. I tended to overreact to situations	0	1	2	3
7. I experienced trembling (e.g. in the hands)	0	1	2	3
8. I felt that I was using a lot of nervous energy	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10. I felt that I had nothing to look forward to	0	1	2	3
11. I found myself getting agitated	0	1	2	3
12. I found it difficult to relax	0	1	2	3
13. I felt down-hearted and blue	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15. I felt I was close to panic	0	1	2	3
16. I was unable to become enthusiastic about anything	0	1	2	3
17. I felt I wasn't worth much as a person	0	1	2	3
18. I felt that I was rather touchy	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (e.g. a sense of heart rate increase, heart missing a beat)	0	1	2	3
20. I felt scared without any good reason	0	1	2	3
21. I felt that life was meaningless	0	1	2	3

Section 6 – PSEQ

Rate how confident you are that you can do the following things **at present** despite the pain. Circle one of the numbers on the scale under each item, where 0 = *Not at all confident* and 6 = *Completely confident*.

Remember this questionnaire is not asking whether or not you have been doing these things, but rather how confident you are that you can do them at present, **despite the pain.**

	0 1 2 3 4 5 6
1. I can enjoy things, despite the pain	0 Not at all confident … 6 Completely confident
2. I can do most of the household chores (e.g. tidying up, washing dishes, etc.) despite the pain	0 Not at all confident … 6 Completely confident
3. I can socialise with my friends or family members as often as I used to do, despite the pain	0 Not at all confident … 6 Completely confident
4. I can cope with my pain in most situations	0 Not at all confident … 6 Completely confident
5. I can do some form of work, despite the pain ("work" includes housework, paid and unpaid work)	0 Not at all confident … 6 Completely confident
6. I can still do many of the things I enjoy doing, such as hobbies or leisure activity, despite the pain	0 Not at all confident … 6 Completely confident
7. I can cope with my pain without medication	0 Not at all confident … 6 Completely confident
8. I can still accomplish most of my goals in life, despite the pain	0 Not at all confident … 6 Completely confident
9. I can live a normal lifestyle, despite the pain	0 Not at all confident … 6 Completely confident
10. I can gradually become more active, despite the pain	0 Not at all confident … 6 Completely confident

(continued)

Section 7 – PCS

Everyone experiences painful situations at some point in their lives. Such experiences may include headaches, tooth pain, joint or muscle pain. People are often exposed to situations that may cause pain such as illness, injury, dental procedures or surgery.

We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

	Not at all	To a slight degree	To a moderate degree	To a great degree	All the time
1. I worry all the time about whether the pain will end	0	1	2	3	4
2. I feel I can't go on	0	1	2	3	4
3. It's terrible and I think it's never going to get any better	0	1	2	3	4
4. It's awful and I feel it overwhelms me	0	1	2	3	4
5. I feel I can't stand it anymore	0	1	2	3	4
6. I become afraid that the pain will get worse	0	1	2	3	4
7. I keep thinking of other painful events	0	1	2	3	4
8. I anxiously want the pain to go away	0	1	2	3	4
9. I can't seem to keep it out of my mind	0	1	2	3	4
10. I keep thinking about how much it hurts	0	1	2	3	4
11. I keep thinking about how badly I want the pain to stop	0	1	2	3	4
12. There's nothing I can do to reduce the intensity of the pain	0	1	2	3	4
13. I wonder whether something serious may happen	0	1	2	3	4

Thank you for completing this questionnaire

Office use only

Medication

Did the patient report medications? ☐ Yes ☐ No

Possible differences in patient-reported medications? ☐ Yes ☐ No

Tick all drug groups being taken:

☐ Opioids ☐ Paracetamol ☐ NSAIDs ☐ Medicinal Cannabinoids

☐ Antidepressants ☐ Anticonvulsants ☐ Sedatives

Daily oral morphine equivalent: ..... mg

Opioid medication >2 days/week ☐ Yes ☐ No

Opioid replacement/substitution program? ☐ Yes ☐ No

Acknowledgements

We acknowledge use of the following questions and assessment tools:

- Pain Chart: Childhood Arthritis and Rheumatology Research Alliance, www.carragroup.org von Baeyer CL et al, Pain Management, 2011;1(1):61-68
- Modified Brief Pain Inventory questions, reproduced with acknowledgement of the Pain Research Group, the University of Texas MD Anderson Cancer Centre
- Depression, Anxiety and Stress Scale, Lovibond SH & Lovibond PF (1995)
- Pain Self-Efficacy Questionnaire, Nicholas MK (1989)
- Pain Catastrophising Scale, Sullivan MJL (1995)
- Work productivity questions from the Work Productivity and Activity Impairment Questionnaire, Reilly MC, Zbrozek AS & Dukes EM (1993)

Office use - Reason for collection:
☐ Pathway start
☐ Pathway end/episode end
☐ Post episode review ☐ Other

[INSERT SERVICE NAME OR LOGO]

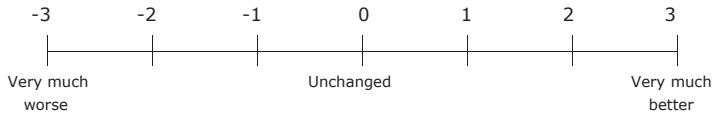
FOLLOW-UP QUESTIONNAIRE

Section 1 – Your details

Title ☐ Mr ☐ Mrs ☐ Ms ☐ Miss	**Family name** *(surname)*	**Given name(s)**
Gender ☐ Male ☐ Female	**Date of birth** (dd/mm/yyyy) __ __ /__ __ / __ __ __ __	**Today's date** (dd/mm/yyyy) __ __ /__ __ / __ __ __ __
Height *(in cm)*	**Weight** *(in kg)*	

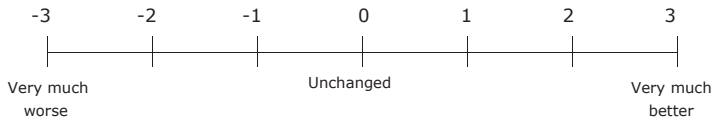
Compared with before receiving treatment at this pain management service, how would you describe yourself now overall?

(Circle the most relevant number on the scale)



Compared with before receiving treatment at this pain management service, how would you describe your physical abilities now?

(Circle the most relevant number on the scale)



Which statement best describes your pain? *(tick **one** box only)*

☐ Always present (always the same intensity)
☐ Always present (level of pain varies)
☐ Often present (pain free periods last less than 6 hours)
☐ Occasionally present (pain occurs once to several times per day, lasting up to an hour)
☐ Rarely present (pain occurs every few days or weeks)
☐ Pain is no longer present

Health care ***(other than your visits to the pain clinic)***

1. How many times in the past 3 months have you seen a general practitioner in regard to your pain? ..... times
2. How many times in the past 3 months have you seen a medical specialist (e.g. orthopaedic surgeon) in regard to your pain? ..... times
3. How many times in the past 3 months have you seen health professionals other than doctors (e.g. physiotherapist, chiropractor, psychologist) in regard to your pain? ..... times
4. How many times in the past 3 months have you visited a hospital emergency department in regard to your pain? *(Include all visits, regardless of whether or not you were admitted to the hospital from the emergency department)* ..... times
5. How many times in the past 3 months have you been admitted to hospital as an inpatient because of your pain? ..... times
6. How many diagnostic tests (e.g. X-rays, scans) have you had in the last 3 months relating to your pain? ..... tests

Section 2 – Your work

Are you currently employed (working for pay)?

☐ Yes - If *yes*, are you:
- ☐ Working full-time
- ☐ Working part-time

Please answer the questions below

☐ No - If *no*, are you:

(tick ***one*** only, then go straight to **Section 3**)
- ☐ Unable to work due to a condition other than pain
- ☐ Unable to work due to pain
- ☐ Not working by choice (student, retired, homemaker)
- ☐ Seeking employment (I consider myself able to work but cannot find a job)

During the past seven days, how many hours did you miss from work because of problems associated with your pain?

(Include hours you missed on sick days, times you went in late, left early, etc. because of your pain. *Do not include time you missed to attend this pain clinic).* ..... hours

During the past seven days, how many hours did you actually work?
*(If '0' skip the next question and go to **Section 3**)* ..... hours

(continued)

During the past seven days, how much did your pain affect your productivity while you were working?

Think about days you were limited in the amount or kind of work you could do, days you accomplished less than you would like, or days you could not do your work as carefully as usual.

If pain affected your work only a little, choose a low number.
Choose a high number if pain affected your work a great deal.

Consider only how much pain affected productivity while you were working

Pain had no effect on my work	0	1	2	3	4	5	6	7	8	9	10	Pain completely prevented me from working

CIRCLE A NUMBER

Section 3 – Medication use

Are you taking any medications?

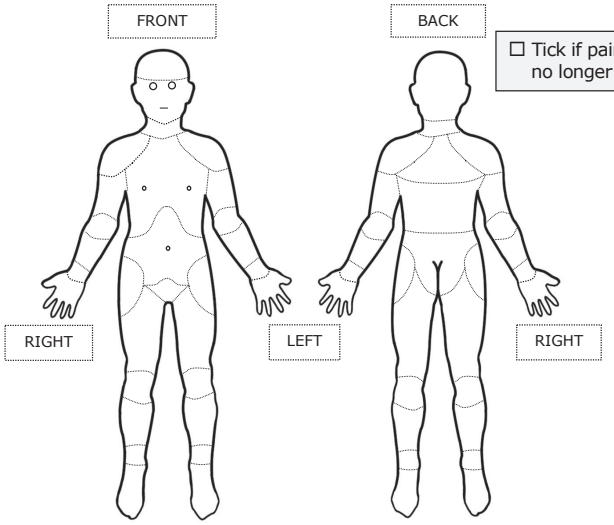
☐ No *(please go to **Section 4**)*

☐ Yes *(Please list all the medications you are taking. Include both prescription and over-the-counter medicines)*

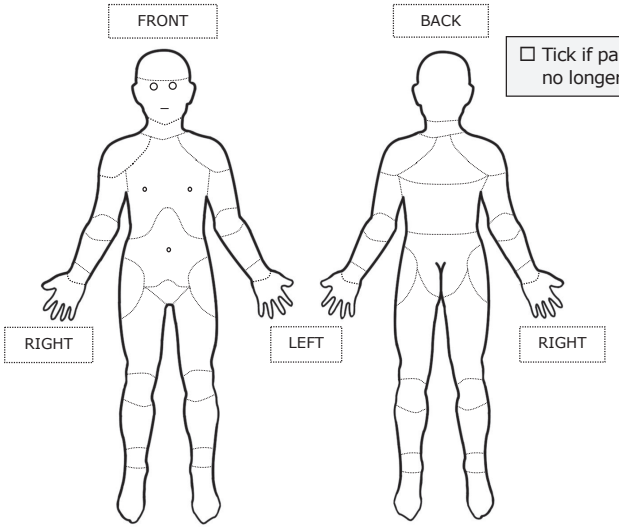
Medicine name *(as on the label)*	Medicine strength *(as on the label)*	How many do you take per day?	How many days per week do you take this medication?

Section 4 – Pain intensity and interference

On the diagram below, shade in ALL the areas where you feel pain.



On the diagram below, put an X on the ONE area that hurts most.



(continued)

Please rate your pain by circling the one number that best describes the following:											
1. Your pain at its *worst* in the last week?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
2. Your pain at its *least* in the last week?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
3. Your pain on *average*?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine
4. How much pain do you have *right now*?	0 No pain	1	2	3	4	5	6	7	8	9	10 Pain as bad as you can imagine

During the past week, how much has pain interfered with the following:											
1. Your general activity?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
2. Your mood?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
3. Your walking ability?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
4. Your normal work (both outside the home and housework)?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
5. Your relations with other people?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
6. Your sleep?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes
7. Your enjoyment of life?	0 Does not interfere	1	2	3	4	5	6	7	8	9	10 Completely interferes

Section 5 – DASS21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of the time
3 Applied to me very much, or most of the time

	Not at all	Some of the time	A good part of the time	Most of the time
1. I found it hard to wind down	0	1	2	3
2. I was aware of dryness of my mouth	0	1	2	3
3. I couldn't seem to experience any positive feeling at all	0	1	2	3
4. I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5. I found it difficult to work up the initiative to do things	0	1	2	3
6. I tended to overreact to situations	0	1	2	3
7. I experienced trembling (e.g. in the hands)	0	1	2	3
8. I felt that I was using a lot of nervous energy	0	1	2	3
9. I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10. I felt that I had nothing to look forward to	0	1	2	3
11. I found myself getting agitated	0	1	2	3
12. I found it difficult to relax	0	1	2	3
13. I felt down-hearted and blue	0	1	2	3
14. I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15. I felt I was close to panic	0	1	2	3
16. I was unable to become enthusiastic about anything	0	1	2	3
17. I felt I wasn't worth much as a person	0	1	2	3
18. I felt that I was rather touchy	0	1	2	3
19. I was aware of the action of my heart in the absence of physical exertion (e.g. a sense of heart rate increase, heart missing a beat)	0	1	2	3
20. I felt scared without any good reason	0	1	2	3
21. I felt that life was meaningless	0	1	2	3

(continued)

Section 6 – PSEQ

Rate how confident you are that you can do the following things **at present** despite the pain. Circle one of the numbers on the scale under each item, where 0 = *Not at all confident* and 6 = *Completely confident*.

Remember this questionnaire is not asking whether or not you have been doing these things, but rather how confident you are that you can do them at present, **despite the pain.**

1.	I can enjoy things, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
2.	I can do most of the household chores (e.g. tidying up, washing dishes, etc.) despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
3.	I can socialise with my friends or family members as often as I used to do, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
4.	I can cope with my pain in most situations	0 1 2 3 4 5 6 Not at all confident … Completely confident
5.	I can do some form of work, despite the pain ("work" includes housework, paid and unpaid work)	0 1 2 3 4 5 6 Not at all confident … Completely confident
6.	I can still do many of the things I enjoy doing, such as hobbies or leisure activity, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
7.	I can cope with my pain without medication	0 1 2 3 4 5 6 Not at all confident … Completely confident
8.	I can still accomplish most of my goals in life, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
9.	I can live a normal lifestyle, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident
10.	I can gradually become more active, despite the pain	0 1 2 3 4 5 6 Not at all confident … Completely confident

Section 7 – PCS

Everyone experiences painful situations at some point in their lives. Such experiences may include headaches, tooth pain, joint or muscle pain. People are often exposed to situations that may cause pain such as illness, injury, dental procedures or surgery.

We are interested in the types of thoughts and feelings that you have when you are in pain. Listed below are thirteen statements describing different thoughts and feelings that may be associated with pain. Using the scale, please indicate the degree to which you have these thoughts and feelings when you are experiencing pain.

		Not at all	To a slight degree	To a moderate degree	To a great degree	All the time
1.	I worry all the time about whether the pain will end	0	1	2	3	4
2.	I feel I can't go on	0	1	2	3	4
3.	It's terrible and I think it's never going to get any better	0	1	2	3	4
4.	It's awful and I feel it overwhelms me	0	1	2	3	4
5.	I feel I can't stand it anymore	0	1	2	3	4
6.	I become afraid that the pain will get worse	0	1	2	3	4
7.	I keep thinking of other painful events	0	1	2	3	4
8.	I anxiously want the pain to go away	0	1	2	3	4
9.	I can't seem to keep it out of my mind	0	1	2	3	4
10.	I keep thinking about how much it hurts	0	1	2	3	4
11.	I keep thinking about how badly I want the pain to stop	0	1	2	3	4
12.	There's nothing I can do to reduce the intensity of the pain	0	1	2	3	4
13.	I wonder whether something serious may happen	0	1	2	3	4

Thank you for completing this questionnaire

(continued)

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Medication

Did the patient report medications?	☐ Yes	☐ No
Possible differences in patient-reported medications?	☐ Yes	☐ No

Tick all drug groups being taken:

☐ Opioids	☐ Paracetamol	☐ NSAIDs	☐ Medicinal Cannabinoids
☐ Antidepressants	☐ Anticonvulsants	☐ Sedatives	

Daily oral morphine equivalent: ..... mg

Opioid medication >2 days/week	☐ Yes	☐ No
Opioid replacement/substitution program?	☐ Yes	☐ No

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- Pain Chart: Childhood Arthritis and Rheumatology Research Alliance, www.carragroup.org von Baeyer CL et al, Pain Management, 2011;1(1):61-68
- Modified Brief Pain Inventory questions, reproduced with acknowledgement of the Pain Research Group, the University of Texas MD Anderson Cancer Centre
- Depression, Anxiety and Stress Scale, Lovibond SH & Lovibond PF (1995)
- Pain Self-Efficacy Questionnaire, Nicholas MK (1989)
- Pain Catastrophising Scale, Sullivan MJL (1995)
- Work productivity questions from the Work Productivity and Activity Impairment Questionnaire, Reilly MC, Zbrozek AS & Dukes EM (1993)

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IASP brings together scientists, clinicians, healthcare providers, and policymakers to stimulate and support the study of pain and translate that knowledge into improved pain relief worldwide.