Mackay HealthPathways HANDI Initiative Protocol

A controlled, before-after intervention study of the uptake of evidence-based non-drug interventions (*HANDI*) by General Practitioners provided via the already established *HealthPathways* platform.

HANDI Making non-drug interventions easier to find and use

phn NORTHERN QUEENSLAND An Australian Government Initiative

BOND UNIVERSITY BRINGING AMBITION TO LIFE

CREBP Centre for Research in Evidence-Based Practice

MIRI Integrated Health

Mackay Hospital and Health Service

Title, Schema and Summary - Mackay HealthPathways – HANDI Initiative

A controlled, before-after intervention study of the uptake of evidence-based non-drug interventions (*HANDI*) by General Practitioners provided via the already established *HealthPathways* platform.

1.1 Schema

1. Collection of 12 months baseline data for control and intervention sites.
2. Mackay *HealthPathways* re-drafted to highlight the role of evidence based non-drug interventions based on RACGP *HANDI* resources.
3. Education and promotion to GPs of the revised pathways.
4. Measure outcomes monthly for 12 months post intervention.
5. Comparison of data between intervention and control regions
6. Sharing of outcomes data and resources with control site and the rest of the *HealthPathways* Community (Currently 40 sites across Australia, New Zealand and UK).

1.2 Summary

Evidence-based non-drug interventions are underutilised in the management of a range of conditions presenting to general practice.

This trial will measure the impact of embedding an established, but underutilised, compendium of evidence based non-drug interventions (the RACGP's *Handbook of Non-drug Interventions (HANDI)*) into a local, well established decision-aid platform (Mackay *HealthPathways*). The pathways will be re-drafted to highlight the role of the HANDI entries and then re-released accompanied by General Practitioner focused education and promotion.

The effectiveness of the intervention will be compared to a control site, chosen for its similarities in demographics and maturity of its *HealthPathways* program, and also compared to national control data.

5 target conditions were chosen for promotion of related *HealthPathways* and *HANDI* entries (see table – page 3)

Condition	*HealthPathways*	*HANDI* resources
Osteoarthritis (OA)	Osteoarthritis	• Exercise: knee OA • Joint protection strategies: hand OA • Splints: hand OA • Taping: knee OA • Aquatic exercise for knee and hip OA •
Back pain	Back pain	• Advice to stay active: acute low-back pain • Exercise for chronic low back pain • Mindfulness and CBT for chronic low back pain
Chronic Obstructive Pulmonary Disease (COPD)	• Pulmonary rehabilitation (request) • Respiratory education and support (request) • COPD diagnosis • Medications in COPD • Stable COPD management and review • Acute exacerbation COPD	Pulmonary rehabilitation: COPD
Depression	Depression	• Bibliotherapy: depression • Exercise: depression • Internet based or computerised CBT (iCBT or CCBT): depression and anxiety
Metabolic syndrome (MetS)	• Metabolic syndrome • Hypertension • Hyperlipidaemia • Cardiovascular risk • Adult weight management • Fatty liver • Newly diagnosed type 2 diabetes • Diabetes dietary advice	• Exercise: type 2 diabetes • Mediterranean Diet: reducing cardiovascular disease risk

Contents

2. Trial Identifier, Registry Name

This protocol does not require trial registration:

- This is an educational intervention for health professionals
- There is no recruitment of individuals
- All health interventions in the trial already have an established evidence base and are recommended in best practice guidelines.

3. Version

Version 0.1 May 2018 – first draft
Version 0.2 June 2018 – review by PG.
Version 0.3 - edits
Version 0.4 - edits
Version 0.5 November 2018 – finalisation of required data sets, edits, inclusion of resources. Review by RT. Review by TS.

4. Funding and support

Mackay Hospital and Health Service (MHHS) – Queensland Health

- Co-funder of Mackay *HealthPathways*
- The primary investigators are employees or contracted to the MHHS

Mackay Institute of Research and Innovation (MIRI)

- Collaborative relationship to Bond CREBP
- Support and advice
- Support and promotion of educational interventions

North Queensland Primary Health Network (NQPHN)

- Co-funder of Mackay *HealthPathways*
- Support and Promotion of educational interventions

Bond University - Centre for Research in Evidence Based Practice (CREBP)

- Collaborative relationship with MIRI
- Professional support and expertise - research
- Training
- Support of educational interventions

5. Study Management

5.1 Protocol Contributors

Dr Aaron Kennedy (Mackay HealthPathways – Lead Clinical Editor)
Toni Simmons (Mackay HealthPathways – Integrated Health Manager/GPLO)
Dr Rae Thomas (CREBP)
Professor Paul Glasziou (CREBP)

5.2 Study Sponsor

Mackay Institute Research and Innovation (MIRI)
Dr David Farlow – project executive sponsor

5.3 Role of Funders and Sponsors

This study has been funded out of the existing budget of the Mackay *HealthPathways* project and leveraging off the existing partnerships with MIRI, NQPHN and CREBP.

- Mackay *HealthPathways* Project (MHP)
  - Dr Aaron Kennedy and Toni Simmons
    - Principle investigators
- Mackay Institute of Research and Innovation (MIRI)
  - Dr David Farlow
    - Project executive sponsor
- North Queensland Primary Health Network (NQPHN)
  - Karin Baron, Bianca Cross
    - Project collaborator
    - Sharing of Mackay and Control GP data
- Centre for Research in Evidence Based Medicine (CREBP)
  - Professor Paul Glasziou, Dr Rae Thomas, Clare Badenhorst
    - Project collaborator
    - Research support
    - Protocol development
    - Data analysis
- Royal Australian College General Practice (RACGP)
  - Gisele Rocha
    - Sharing of *HANDI* data
- Streamliners New Zealand (SNZ)
  - Hosting of *HealthPathways* platform
  - Technical writing support
  - Pathways sharing across the *HealthPathways* Community

5.4 Committees

Integrated Care Committee – Dr David Farlow executive sponsor and committee member

6. Introduction

Nearly half of the thousands of clinical trials conducted each year are for non-drug treatments. However, effective non-drug methods are less well known, less well promoted, and less well utilised than their pharmaceutical cousins. Recent examples of the underutilization of non-drug interventions (NDIs) in primary care in the literature include:

1. **Chronic knee pain/knee osteoarthritis:**

A 2010 systematic review (1) found that attitudes and beliefs of GPs towards exercise for chronic knee pain/knee osteoarthritis "vary widely and exercise appears to be underused" despite it being a first-line treatment in multiple evidence-based guidelines of the time. A follow-up larger UK questionnaire survey (2) was conducted in 2014 and concluded that although GPs were positive about exercise for patients with chronic knee pain, they identified "uncertainties with respect to the safety and efficacy of exercise and suboptimal approaches to the initiation of exercise with patients"

2. **Back Pain:**

Low back pain is a leading cause of disability worldwide. A 2018 series in The Lancet identified significant gaps between evidence and practice with limited use of recommended non-drug first-line treatments and inappropriately high use of low-value care (including imaging, rest, opioids, spinal injections and surgery) (3).

3. **Pulmonary Rehabilitation (PR) for COPD:**

Despite the known benefits of pulmonary rehabilitation, it is still underutilised. A systematic review of international surveys and practice audits indicated that between 3% and 16% of suitable COPD patients in general practice are referred to PR (4). A Danish study (5) of GP perceptions of COPD treatment found GPs were not fully committed to discuss non-pharmacological treatments and perceived the patients as unmotivated for PR. The study authors identified a need for optimizing non-pharmacological treatment of COPD and the referral process to PR.

While access to PR is less than ideal, the uptake and attendance of PR programs is also poor. An Australian study showed that between 8% and 50% of those referred to PR never attend, while between 10% and 32% of those who commence PR do not complete the program (6).

4. **Lifestyle advice for metabolic syndrome:**

Obesity: Although many guidelines exist to assist Australian GPs manage patients with obesity, an attempt in 2016 (7) to synthesis 5 of them found that they:

- are not in a readily useable format for the general practice setting
- disagree on key elements
- give some direction and general statements about interventions, but lack a clear and concise program for GPs to implement.

It was also noted that GPs do not have the time to do this type of synthesis on one condition, let alone the myriad conditions they are expected to manage.

Physical Activity: A national survey of GPs in Australia (2016) found that GPs are incorporating physical activity promotion into their practice, but primarily as a disease management tool and with limited specificity. It was concluded that "strategies to assist Australian general practitioners to effectively promote physical activity are needed" (8).

Nutritional Advice: A Swiss evaluation (9) of resident physicians' attitudes and self-proficiency in providing nutritional advice found that 70.5% agreed that doctors should know how to provide nutrition-based assessment (regardless of specialty) but only 11.4% felt they were adequately trained to do so.

HANDI

To address this imbalance the *Handbook of Non-Drug Interventions* (*HANDI*) project was launched by the Royal Australian College of General Practitioners (RACGP) in 2013 to promote effective non-drug treatments.

HANDI is an online formulary of non-drug interventions for use in primary care, which have solid evidence of their effectiveness. The aim is to make 'prescribing' a non-drug therapy as easy as writing a prescription for a drug.

However, now with over 60 entries, the *HANDI* remains an underutilized resource. As noted by the NHMRC on research translation, the "creation of knowledge does not, of itself, lead to widespread implementation and positive impacts on health. The knowledge must be translated into changes in practice and policy for the benefits to flow to consumers" (10).

There are many barriers to the uptake of evidence into clinical practice. Cabana and colleagues identified several common barriers to the adherence to guidelines including a lack of awareness and familiarity, lack of belief in a good outcome after adopting guidelines, and the inertia of previous practice including a lack of motivation (11). A lack of access and limited awareness are perceived barriers to systematic review uptake (12).

The need for local decision support tools was highlighted in the CareTrack Australia study, which found that adult Australians received appropriate care in only 57% (13) of healthcare encounters and children in 59.8% (14). In their perspectives article "Towards the delivery of appropriate health care in Australia" (15) they recognized that accessing clinical guidelines can be problematic for healthcare providers, with issues of a large number of repositories and guidelines, duplication and overlap, different recommendations for care practices, lack of currency, inconsistent structures and content, and hard-to-use voluminous documents (15). One of their recommendations (recommendation 3 of 4) was to adopt a systematic approach to developing local standards of care as an inclusive and collaborative process, and ensuring that material stays easy to use and up to date. This space seems to have been filled in the Australian context by *HealthPathways*.

HealthPathways

HealthPathways is a localised web-based health information system used by clinicians to help make assessment, management, and specialist request decisions. Each pathway represents an agreement between primary and specialist services on how patients with particular conditions will be managed in the local context.

Developed initially in Canterbury, New Zealand, in 2008, local use has grown steadily to the point that 99% of GPs surveyed use it weekly in their practice, 70% of whom use it daily (16). The platform is now localized to over 40 sites

across New Zealand, Australia and the UK. Mackay joined the HealthPathways community in 2015, and is now reaching a mature stage of pathway development and clinician engagement.

Benefits of *HealthPathways* include (17):

- **Patients benefit** from general practice and other services being able to do more for them in the community, from the greater clarity clinicians can provide about the appropriateness and likelihood of obtaining further specialist services, and about alternative options.
- **Clinician benefit** through relationship building with their primary care and hospital specialist colleagues as they localise *HealthPathways*, and through greater confidence and options in managing their patients.
- **Local health system benefits** through less demand on acute and residential care services as patients are better managed in the community, freeing up resources to provide more elective services and increase assistance to primary care.

Although widely adopted throughout Australia and New Zealand, *HealthPathways* remains under-evaluated. As it is a platform that is often adopted in the context of broader health system reform it is often difficult to quantify the true impact of the program itself. By embedding the *HANDI* resource into *HealthPathways* we aimed to increase the awareness, availability and uptake of non-drug interventions in primary care, and to measure the impact this has on patient health outcomes in a regional context.

6.1 Summary of Evidence to Date

HANDI

The *HANDI* entries to be used in this study are all graded as NHMRC Level 1 evidence, supported by the following randomized trials and systematic reviews:

Osteoarthritis (OA)

Exercise for knee OA

- Uthman OA, van de Windt DA, Jordan JL et al. Exercise for lower limb osteoarthritis: systematic review incorporating trial sequential analysis and network meta-analysis. BMJ 2013;347: f5555 DOI: 10.1136/bmj.f5555.
- Fransen M, McConnell S. Exercise for osteoarthritis of the knee (Review). Cochrane Database Syst Rev 2008;4:CD004376. DOI: 10.1002/14651858.CD004376.pub2.
- Juhl C, Christensen R, Roos EM et al. Impact of exercise type and dose on pain and disability in knee osteoarthritis: a systematic review and meta-regression analysis of randomized controlled trials. Arthritis Rheumatol, 2014;66(3): 622–36. DOI: 10.1002/art.38290.
- Bennell KL, Nelligan R, Dobson F, et al. Effectiveness of an Internet-Delivered Exercise and Pain-Coping Skills Training Intervention for Persons with Chronic Knee Pain: A Randomized Trial. Ann Intern Med. 2017;166(7):453–62. DOI: 10.7326/M16-1714.

Joint protection strategies: hand OA

- Dziedzic K, Nicholls E, Hill S et al. Self-management approaches for osteoarthritis in the hand: a 2x2 factorial randomised trial. Ann Rheum Dis 2013. doi:10.1136/annrheumdis-2013-203938.

Splints: hand OA

- Hochberg MC, Altman RD, April KT et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis Care Res 2012;64(4):465–74.
- Kjeken I, Smedslund G, Moe RH et al. Systematic review of design and effects of splints and exercise programs in hand osteoarthritis. Arthritis Care Res 2011;63(6):834–48.
- Ye L, Kalichman L, Spittle A et al. Effects of rehabilitative interventions on pain, function and physical impairments in people with hand osteoarthritis: a systematic review. Arthritis Res Ther 2011;13(1):R28.

Taping: knee OA

- Hochberg MC, Altman RD, April KT, Guyatt G, McGowan J, Towheed T, Welch V, Wells G, Tugwell P. American College of Rheumatology 2012 Recommendations for the Use of Nonpharmacologic and Pharmacologic Therapies in Osteoarthritis of the Hand, Hip and Knee. *Arthritis Care & Research* 2012 Apr; 64(4): 465-74
- Page CJ, Hinman RS, Bennell KL. Review Article: Physiotherapy management of knee osteoarthritis. *International Journal of Rheumatic Diseases* 2011; 14: 145-151
- Warden SJ, Hinman RS, Watson MA Jr, Avin KG, Bialocerkowski AE, Crossley KM. Patellar Taping and Bracing for the Treatment of Chronic Knee Pain: A Systematic Review and Meta-Analysis. *Arthritis & Rheumatism* 2008 Jan 15; 59(1): 78-83

Aquatic exercise for knee and hip OA

- Bartels EM, Juhl CB, Christensen R, et al. Aquatic exercise for the treatment of knee and hip osteoarthritis. Cochrane Database Syst Rev 2016;(3): CD005523. doi: 10.1002/14651858.CD005523.pub3.

Back Pain

Advice to stay active: acute low-back pain

- Dahm K, Brurberg K, Jamtvedt G, Hagen K. Advice to rest in bed versus advice to stay active for acute low-back pain and sciatica. Cochrane Database of Systematic Reviews. 2010;(6):CD007612. DOI: 10.1002/14651858.CD007612.pub2.

Exercise for chronic low back pain

- Chou R. Low back pain (chronic). Systematic review 1116. BMJ Clinical Evidence. October 2010. Accessed 10 September 2015.
- Crow EM, Jeannot E, Trewhela A. Effectiveness of Iyengar yoga in treating spinal (back and neck) pain: A systematic review. Int J Yoga. 2015;8(1):3-14.
- Hall AM, Maher CG, Lam P, Ferreira M, Latimer J. Tai chi exercise for treatment of pain and disability in people with persistent low back pain: a randomized controlled trial. Arthritis Care Res (Hoboken). 2011;63(11):1576-83.
- Hoffmann TC, Glasziou PP, Briffa T, Bennell K, Alison J, Maher CG, Singh MF, Sherrington C. Prescribing exercise interventions for patients with chronic conditions. 2016;188(7):510-518.
- Javadian Y, Akbari M, Talebi G, Taghipour-Darzi M, Janmohammadi N. Influence of core stability exercise on lumbar vertebral instability in patients presented with chronic low back pain: A randomized clinical trial. Caspian journal of internal medicine. 2015;6(2):98-102.
- Lawford BJ, Walters J, Ferrar K. Does walking improve disability status, function, or quality of life in adults with chronic low back pain? A systematic review. Clinical rehabilitation. 2015.

- Macedo LG, Latimer J, Maher CG, Hodges PW, McAuley JH, Nicholas MK, Tonkin L, Stanton CJ, Stanton TR, Stafford R: Effect of motor control exercises versus graded activity in patients with chronic nonspecific low back pain: a randomized controlled trial. Phys Ther. 2012;92:363-377.
- Maher CG, Underwood M, Buchbinder R. Non-specific low back pain. Lancet. 2016;[Epub ahead of print]:PMID: 27745712
- McClean S, Brilleman S, Wye L. What is the perceived impact of Alexander technique lessons on health status, costs and pain management in the real life setting of an English hospital? The results of a mixed methods evaluation of an Alexander technique service for those with chronic back pain. BMC Health Serv Res. 2015;15:293.
- Meng XG, Yue SW. Efficacy of aerobic exercise for treatment of chronic low back pain: a meta-analysis. Am J Phys Med Rehabil. 2015;94(5):358-65.
- Patti A, Bianco A, Paoli A, Messina G, Montalto MA, Bellafiore M, et al. Effects of Pilates exercise programs in people with chronic low back pain: a systematic review. Medicine. 2015;94(4):e383.
- Saragiotto BT, Maher CG, Yamato TP, Costa LOP, Menezes Costa LC, Ostelo RWJG, Macedo LG. Motor control exercise for chronic non-specific low-back pain. Cochrane Database of Systematic Reviews 2016;1:CD012004.
- Searle A, Spink M, Ho A, Chuter V. Exercise interventions for the treatment of chronic low back pain: A systematic review and meta-analysis of randomised controlled trials. Clinical rehabilitation. 2015.
- van der Giessen RN, Speksnijder CM, Helders PJ: The effectiveness of graded activity in patients with non-specific low-back pain: a systematic review. Disabil Rehabil. 2012;34: 1070-1076.
- van Middelkoop M, Rubinstein SM, Verhagen AP, Ostelo RW, Koes BW, van Tulder MW. Exercise therapy for chronic nonspecific low-back pain. Best Pract Res Clin Rheumatol. 2010;24(2):193-204.
- Yamato TP, Maher CG, Saragiotto BT, Hancock MJ, Ostelo RW, Cabral CM, et al. Pilates for low back pain. The Cochrane database of systematic reviews. 2015;7:Cd010265
- You YL, Su TK, Liaw LJ, Wu WL, Chu IH, Guo LY. The effect of six weeks of sling exercise training on trunk muscular strength and endurance for clients with low back pain. J Phys Ther Sci. 2015;27(8):2591-6.

Mindfulness and CBT for chronic low back pain

- Cherkin DC, Sherman KJ, Balderson BH, et al. Effect of mindfulness-based stress reduction vs cognitive behavioral therapy or usual care on back pain and functional limitations in adults with chronic low back pain: A randomized clinical trial. JAMA 2016;315(12):1240–9. doi:10.1001/jama.2016.2323.
- Morone NE, Greco CM, Moore CG, et al. A mind-body program for older adults with chronic low back pain: A randomized clinical trial. JAMA Intern Med 2016; 176(3):329–37. PMID: 26903081.
- Chou R, Deyo R, Friedly J, et al. Nonpharmacologic therapies for low back pain: A systematic review for an American College of Physicians Clinical Practice Guideline. Ann Intern Med 2017. doi: 10.7326/M16-2459. [Epub ahead of print]
- Blacker M, Meleo-Meyer F, Kabat-Zinn J, Santorelli SF. Stress reduction clinic mindfulness-based stress reduction (MBSR) curriculum guide. Worcester, MA: Center for Mindfulness in Medicine, Health Care, and Society, Division of Preventive and Behavioral Medicine, Department of Medicine, University of Massachusetts Medical School, 2017.

Chronic obstructive pulmonary disease (COPD)

Pulmonary rehabilitation: COPD

- McCarthy B, Casey D, Devane D, Murphy K, Murphy E. Pulmonary rehabilitation for chronic obstructive pulmonary disease. Cochrane Dtabase of Systematic Reviews 2015. **DOI:** 10.1002/14651858.CD003793.pub3.
- Puhan MA, Gimeno-Santos E, Cates CJ, Troosters T. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease. Cochrane Database of Systematic Reviews 2016. **DOI:** 10.1002/14651858.CD005305.pub4

Depression

Bibliotherapy: depression

- Anderson L, Lewis G, Araya R, Elgie R, Harrison G, Proudfoot J, et al. 2005. Self-help books for depression: how can practitioners and patients make the right choice? The British Journal Of General Practice: *The Journal Of The Royal College Of General Practitioners,* 55(514), 387-392.
- GPNotebook: diagnostic criteria for depression (DSM versus ICD-10 classification).
- Gregory R J, Canning SS, Lee TW & Wise JC. 2004. Cognitive bibliotherapy for depression: A meta-analysis. *Professional Psychology-Research and Practice, 35*(3): 275-280.

Exercise: depression

- Cooney G, Dwan K, Greig CA et al. Exercise for depression. Cochrane Database Syst Rev 2013;9:CD004366. doi: 10.1002/14651858.CD004366.pub6.
- Stanton R, Reaburn P. Exercise and the treatment of depression: a review of the exercise program variables. J Sci Med Sport 2014;17(2):177–82.
- Perraton LG, Kumar S, Machotka Z. Exercise parameters in the treatment of clinical depression: a systematic review of randomized controlled trials. J Eval Clin Pract 2010;16:597–604.

Internet based or computerized CBT (iCBT or CCBT): depression and anxiety

- Christensen H, Griffiths KM, Jorm AF. Delivering interventions for depression by using the internet: a randomised controlled trial. *BMJ.* 2004; doi:10.1136/bmj.37945.566632.EE
- Kaltenthaler E, Brazier J, De Nigris E, Tumur I, Ferriter M, Beverley C, Parry G, Rooney G, Sutcliffe PA. Computerised cognitive behavioural therapy for depression and anxiety update: as systematic review and economic evaluation. *Health Technology Assessment* 2006; 10(33):1-186
- National Collaborating Centre for Mental Health. Depression: the NICE guideline on the treatment and management of depression in adults (updated edition). London: National Institute for Health and Clinical Excellence, 2010. (Accessed 1 March 2013)

Metabolic Syndrome

Exercise: type 2 diabetes

- Balducci S, Zanuso S, Nicolucci A et al. Effect of an intensive exercise intervention strategy on modifiable cardiovascular risk factors in subjects with type 2 diabetes mellitus. Arch Intern Med 2010;170(20):1794–803.
- Umpierre D, Ribeiro P, Kramer C et al. Physical activity advice only or structure exercise training and association with HbA1c levels in type 2 diabetes: a systematic review and meta-analysis. JAMA2011;305(17):1790–9.

Mediterranean diet: reducing cardiovascular disease risk

- de Lorgeril M, Renaud S, Mamelle N, et al. Mediterranean alpha-linolenic acid-rich diet in secondary prevention of coronary heart disease. *Lancet*, 1994;343: 1454–9.
- Estruch R, Ros E, Salas-Salvado J, et al; PREDIMED Study Investigators. Primary prevention of cardiovascular disease with a Mediterranean diet. *N Engl J Med*, 2013;368: 1279–90.
- Nordmann AJ, Suter-Zimmermann K, Bucher HC, et al. Meta-analysis comparing Mediterranean to low-fat diets for modification of cardiovascular risk factors. *Am J Med*, 2011;124: 841–51.e2.
- Itsiopoulos C, Brazionis L, Kaimakamis M, eet al. Can the Mediterranean diet lower HbA1c in type 2 diabetes? Results from a randomized cross-over study. *Nutr Metab Cardiovasc Dis*, 2011 Sep;21(9): 740–7. DOI: 10.1016/j.numecd.2010.03.005. Epub 2010 Jul 31.

HealthPathways

Although the *HealthPathways* platform has been in use for about a decade it has proven difficult to establish its effect on health outcomes as it is difficult to isolate the effect of the platform from other ongoing system improvements. *HealthPathways* is usually implemented as one facet of a system wide approach to health reform. The following bibliography outlines the existing evidence base for the *HealthPathways* platform.

- Xing JL, Blythe R, Choudhury A, simmons T, Graves N and Kularatna S. review of methods and study designs of evaluations related to clinical pathways. Australian Health Review, 2018 https://doi.org/10.1071/AH17276
- Gill SD, Mansfiled S, McLeod M, von Treuer K, Dunn M and Quirk F. HealthPathways improving access to care. Australian Health Review, 2018 https://doi.org/10.1071/AH17090
- Gray, JS et al. Hunter and New England healthpathways: a 4-year journey of integrated care. Australian Health Review, 2017 42(1) 66-71. https://doi.org/10.1071/AH16197
- Robinson S, Varhol R, Bell C, Quirk F, and Durrington L. HealthPathways: creating a pathway for health systems reform. Australian Health Review, 2014 39(1) 9-11. https://doi.org/10.1071/AH14155
- Mansfield SJ, Quirk F, von Treuer K, and Gill G. On the right path? Exploring the experiences and opinions of clinicians involved in developing and implementing HealthPathways Barwon. Australian Health Review, 2016 40(2) 129-135. https://doi.org/10.1071/AH15009
- HealthPathways: an evaluation of its implementation in five Australian Medicare Locals. Report prepared by Alison Boughey Consulting on behalf of AML Alliance March 2014.
- Timmins N and Ham C. The quest for integrated health and social care - a case study in Canterbury, New Zealand. The King's Fund 2013.
- Charles A. Developing accountable care systems – Lessons from Canterbury New Zealand. The King's Fund 2017.
- McGeoch G, McGeoch P, Shand B. Is HealthPathways effective? An online survey of hospital clinicians, general practitioners and practice nurses. NZMJ Vol128 (1408): 30 Jan 2015
- McGeoch G, Anderson I, Gibson J, Gullery C, Kerr D, Shand B. Consensus pathway: evidence into practice. NZMJ Vol128(1408): 30 Jan 2015.

7. Objectives

7.1 Primary

This trial will assess the ability of *HealthPathways* to be used as a tool for increasing the utilisation of known effective non-drug intervention modalities (the *HANDI* resources) among GPs.

7.2 Secondary

The effect of this on regional health outcomes will also be measured. Although the time frame (12 months) for assessing the health outcomes will likely be too short, it is important to collect this data as an initial data set for potential follow-up studies.

This trial will also provide feedback on the effectiveness of the *Mackay HealthPathways* local engagement and education strategies.

8. Trial Design

– this is a controlled, before-after intervention study

9. Study Setting

Health demographics taken from The Health of Queenslanders 2016, www.health.qlg.gov.au/CHO_report

Demographics		**Mackay PHN Region (intervention site)**	**Townsville PHN Region (control site)**
HealthPathways Program	Live implementation date Localised pathways in target conditions	June 2015 Osteoarthritis, Back pain, COPD, Depression, Metabolic syndrome	February 2014 Osteoarthritis, back pain, COPD, Depression.
Hospital Health Service	Facility type Beds	Regional facility 318	Tertiary facility 775
Hospitalisations		36,338 per 1000,000 • 8% potentially preventable	40,159 per 1000,000 • 8% potentially preventable
Population	Total Projected growth by 2026 Indigenous Age 65+	181,977 (2014) 18% 5% 11%	241,318 (2014) 21% 8% 12%
Age standardised mortality rate		603/100,000 • 42% premature • 39% lifestyle related	631/100,000 • 41% premature • 42% lifestyle related
Risk factors (adults)	Daily smokers Obesity Risky drinkers	14% 28% 29%	15% 28% 24%
Practices registered to provide PENCAT data		89%	74%

10. Interventions

10.1 Intervention

1. The Mackay *HealthPathways* will be re-drafted to highlight the role of evidence-based non-drug interventions and to embed the *HANDI* resources. See appendix 21.2 for examples for the target conditions.
2. A variety of implementation strategies will be used over an initial 3-month intensive period and subsequent follow-up reminders continuing for 12 months. The intervention will follow the Mackay *HealthPathways* current engagement strategies. The main difference from our usual practice will be the inclusion of "opinion leaders" from the CREBP team in education events and materials.

   These strategies include:

   1. Education forum: From recent experience, attendance at GP focused forums have been low. To overcome barriers of distance and time, these education sessions are recorded so GPs can listen in their own time (accessible via the *HealthPathways* platform).
      The aim of the forum will be to:
      a. Highlight the chosen *HANDI* resources
      b. Presentation on evidence based practice in primary care
      c. Presentation of the new Pathways and how they incorporate the *HANDI* resources

   2. Printed education materials: A simple resource document introducing the *HANDI* and the relevant Pathways will be developed to increase awareness. See Appendix 21.1 for sample.

   3. Face to face practice visits: Are considered essential to the local utilisation of *HealthPathways.* These visits will be conducted by the GPLO (Toni Simmons) and HealthPathways Clinical Editor (Dr Aaron Kennedy). Visits will include information about HANDI and where to find them in the pathways.

   4. Subscription to the online newsletter: Current subscription rates are 404.

   5. Reminders: The relevant pathways and resources will be highlighted on the *HealthPathways* home page at regular intervals.

10.2 Intervention – control

The control group will be another PHN region (Townsville) who are also using *HealthPathways* but will not have embedded the *HANDI* into their suite of pathways and will not be conducting specific education about *HANDI*.

National data will also be collected as a "tertiary" control.

HANDI is an openly available resource and no restrictions can be placed on other regions and clinicians independently accessing this. However, this effect can be considered equal across all sites. At the time of study design there were only 2 references to *HANDI* in the control HealthPathways site, neither of these are in the target conditions.

11. Outcome measures

11.1 Primary

The primary outcome will be to measure the use of the *HealthPathways* and the linked *HANDI* resources using Google-analytics data.

The analytics will be averaged monthly - the 12 months before the intervention, the intervention period of three months, and post-intervention for 12 months via two data sources:

We will compare the data from Mackay PHN (intervention site), Townsville PHN (regional control) and nationally (tertiary control).

Other analytics data that will be captured include:

- How the *HANDI* were accessed (i.e.: via HP or direct to RACGP site)
- Measures of the 5 target conditions separately and also the overall use of the *HANDI* resources (to measure any "spill over effect")

11.2 Secondary

The following health impacts and resource utilisation will be measured for the 12 months prior to the intervention, and the 12 months post intervention from the following data sources:

1. General Practice data - Aggregated, de-identified data from PATCAT and PATBI provided by NQPHN

2. Hospital and Health Service data – aggregated, de-identified data
    - HHS Specialist Out Patient Department (SOPD) referral data (ESM and HBCIS)
    - Surgical outcome data (Surginet)
    - HHS ED presentation data (FirstNet)

Condition	Health outcome measures
Osteoarthritis (OA)	GP data • Disease: osteoarthritis • Medication prevalence (pain relief – particularly opioid prescribing) HHS data • Presentation to emergency department (FirstNet) • Referrals to orthopaedic outpatients (ESM and HBCIS) • Conversion rate to operation (Surginet, HBCIS)
Back pain	GP data • Disease: low back pain • Medication prevalence (pain relief – particularly opioid prescribing) HHS data • Presentation to emergency department (FirstNet) • Referrals to orthopaedic outpatients (ESM and HBCIS)
Chronic Obstructive Pulmonary Disease (COPD)	GP data • Disease: COPD • Medication prevalence (glucocorticoids) HHS data • Referrals to pulmonary rehabilitation (ESM and HBCIS) • Presentations to emergency department with exacerbation(FirstNet) • Referrals to medical/respiratory outpatients (ESM and HBCIS)
Depression	GP data • Disease: anxiety and depression • Medication prevalence (antidepressants and anti-anxiety)

Metabolic syndrome (MetS)	GP data
	• Disease (Diabetes type II, Hypertension, Hyperlipidaemia, obesity)
	• Medication prevalence
	  ○ Antihypertensive (ACE, ARB, CCB)
	  ○ Lipid modifying
	  ○ Antidiabetic
	• Pathology
	  ○ Lipids
	  ○ HbA1C
	  ○ FBG
	• Clinical measures
	  ○ BP
	  ○ Waist circumference
	  ○ BMI

12. Study Timeline

(proposed – dates to be modified to exact start date)

- Pre-intervention period – 12 months from February 2018 – January 2019. This start date has been chosen to minimise the effect that codeine rescheduling (Feb 1st 2018) could have on prescribing data sets.
- Intervention period – February 1st 2019 – go-live with revised pathways and begin intensive period of promotion and education.
- Post-intervention period – February 2019 – January 2020

13. Data Collection

13.1 Data Sources

1. Google analytics data – utilisation of *HealthPathways* (Toni Simmons and Alison Berigan)
2. Google analytics data – utilisation of HANDI (RACGP – contact person Gisele Rocha)
3. General practice data – aggregated, deidentified data provided by NQPHN from PATCAT and PATBI
4. Hospital and Health Service data – aggregated and de-identified data
    - HHS Specialist Out Patient Department (SOPD) referral data (ESM and HBCIS)
    - Surgical outcome data (Surginet)
    - HHS ED presentation data (FirstNet)

13.2 Data Management

All electronic data will be saved with password protection on Queensland Health secure server in folders only accessible to the nominated research staff. Any hard copies of the data will be stored in securely locked cabinets at Mackay Base Hospital for the duration required by data retention laws.

13.3 Access to Data

The final datasets will be shared and analysed by the principle research teams at Mackay *HealthPathways* and the Centre for Research in Evidence Based Practice (Bond University)
Data sharing agreements will be arranged with the primary data custodians.

14. Statistical Methods

14.1 Primary Analysis Methods

The primary analysis will be a comparison of the before-after rates of use of HANDI based on the web access data. We will treat the web accesses as a Poisson variable, and hence compare counts before and after using a comparison of the two Poisson rates. We will use a 2-sided significance level of 0.05, and provide an estimate and confidence interval for the difference between the two rates. (18)

14.2 Secondary Analyses

Similar methods to the primary analysis will be used for the secondary outcomes analysis. However, we note that the frequency of the secondary events will be lower, and hence all secondary analyses will likely be under-powered.
In addition, we plan to conduct an interrupted times series analysis of the outcomes using segmented Poisson regression (19). For this analysis we will model monthly rates for the 12 months prior to the intervention and contrast these with

the monthly rates for the 12 months post intervention. Comparisons between the intervention group will be made with the control groups.

14.3 Handling of Missing Data and Loss to Follow-up

We are not anticipating missing data. However, if unanticipated missing data does occur we will consider sensitivity analysis to assess the potential impact of the missing data on the results.

14.4 Subgroup Analyses

There are no plans to conduct subgroup analyses

14.5 Definition of Populations for Analyses

See section 9 for a description of the population of the study. This population will be used for the analyses.

15.Ethical Approvals

15.1 Ethics committee approvals

Low risk ethics approval will be sought from the Townsville Human Research Ethics Committee.

15.2 Justification of potential risks and benefits

This is a low risk intervention of non-drug treatments with known benefits and very few risks/adverse effects. These interventions have NHMRC Level 1 evidence and are already recommended and available, but underutilised by GPs.

Only de-identified records will be requested for this analysis.

HHS: We are requesting a limited number of aggregated, de-identified data fields and do not anticipate any risk or harm to individuals. This project requires authorisation by the Data Custodian, and Public Health Act (PHA) approval to access the HHS de-identified data. We will seek these approvals in due course.

Practice Data: PenCAT software platforms have been designed and structured to ensure the safety, integrity and security of patient data is compliant with the Privacy Act 1988, Privacy Amendment Act 2012 and the Privacy Regulation 2013. Moreover, practices follow the Royal Australian College of General Practitioners (RACGP) Guidelines on privacy and all data leaving the general practices is de-identified.

15.3 Protocol Amendments

Any significant or important modifications to this protocol will be notified to all protocol contributors, HREC, and any other relevant parties as required.

15.4 Obtaining Consent

Not applicable. No specific consents will be sought or required. The data sets to be analysed will be in keeping with the data custodian's current agreements, freedoms and obligations.

15.5 Protection of participant confidentiality

No personal data will be collected. All data sources are either aggregated and de-identified or do not contain personal data.

16. Declaration of Interests

No conflicts of interest to declare.

17. Dissemination Policy

The findings will be published in reputable journals, and presented at relevant conferences and seminars in Australia and internationally.

Also, we will provide reports of the findings to CREBP, NQPHN, and the participating *HealthPathways* programs for their consideration and action.

The results and resources will also be disseminated via the *HealthPathways* Community website for consideration of wider adoption in other regional and international *HealthPathways* programs.

18. Appendices

18.1 Sample GP Handout Sheet

HealthPathways is an online manual used by clinicians to help make assessment, management and specialist request decisions. Each pathway represents an agreement between local and primary specialist services on how patients with a particular condition should be managed in the local context.

The **Handbook of Non-Drug interventions (HANDI)** is making effective non-drug treatments more visible and easier to use.

By embedding the **HANDI** resource into **HealthPathways** we aim to increase the awareness, availability and uptake of non-drug interventions in primary care, and to measure the impact this has on patient health outcomes in the Mackay region.

Mackay Hospital and Health Service

phn NORTHERN QUEENSLAND An Australian Government Initiative
MIRI Integrated Health
Queensland Government

18.2 Examples of changes to the Mackay *HealthPathways*

Osteoarthritis pathway

Before – this pathway was split over 4 separate OA pathways (hip, knee, thumb and general)

After – the 4 pathways have been combined, and HANDI resources added.

2. Recommend conservative measures in all patients:
   - Provide education and an individualised self-management plan. Consider eligibility and need for a GP Management Plan.
   - If the patient is overweight, recommend weight loss interventions, especially if lower limb OA.
   - Recommend strength, aerobic and flexibility exercises:
     - Exercise and appropriate activities are a core treatment to relieve pain and improve functioning. See Physical Activity.
     - Exercise is usually optimised when a home-based program is initially, and subsequently periodically, individually supervised.

   See also HANDI listings for Exercise: Knee Osteoarthritis, Aquatic Exercise: Knee and Hip Osteoarthritis, Knee Strengthening Exercises
3. If appropriate recommend:
   - joint supports.

Joint supports

- May be effective if significant malalignment or instability
- Do not usually change prognosis, but may improve pain and level of functioning
- Includes:
  - taping – see HANDI – Taping: Knee Osteoarthritis
  - wedge insoles (for knee OA) – may be effective, consider a trial before requesting surgery
  - walking aids – see HANDI – Walking Cane: Knee Osteoarthritis
  - splints and braces

   - interventions to provide safety and independence in the home, and to maintain activities of daily living (ADL) e.g., adaptive equipment or housing modifications.

Back pain pathway

Before (un-localised pathway with a focus on managing acute pain)

7. For chronic low back pain, including neuropathic pain, consider further treatment options.

Further treatment options

- Medications in chronic pain including tricyclics, gabapentin, and SNRIs. Studies have mainly reported on their effectiveness in neuropathic pain. There is no evidence in chronic low back pain although they are often used.
- Before considering invasive techniques (such as epidural steroid injection or other injection therapies), seek appropriate specialist review.[7]
- Mobilisation and manipulation therapies are of limited benefit in reducing the time to resolve mechanical low back pain, although they may provide analgesia.
- Acupuncture or electrotherapies (e.g. TENS) are not recommended.
- Allied health therapists can often spend more time with patients than doctors and can support and educate through the painful episode.
- Allow patient choice and funding to guide therapy, therapist, and duration of treatment.
- Pain management services are funded by ACC for patients:
  - with an accepted injury claim.
  - with significant pain-related disability preventing them from undertaking their usual activities.
  - at risk of developing pain-related disability following an injury.
  - a short-form Örebro questionnaire score ≥ 50.

After – expansion of chronic care options and embedding of HANDI

3. If serious pathology has been ruled out or is not suspected, encourage activity and self-management:
   - Offer education and assurance.
   - Maintain normal physical activity as much as possible.

     Physical activity

     Maintaining physical activity increases the likelihood of a quicker recovery and avoiding recurrence. Activity modification may be required in patients with radiculopathy to reduce nerve root impingement or irritation.

     - Advise patient that:
       - they should continue normal activities within tolerable pain limits.
       - walking, swimming, low-impact aerobics and cycling can all be beneficial.
       - high-impact activities and activities that involve a lot of twisting and bending should generally be avoided.
     - Strongly encourage gradual return to normal activities.
     - Consider community-based physical activity programs, e.g., yoga, pilates, T'ai chi.

     See HANDI – Advice To Stay Active: Acute Low-Back Pain

   - Perform simple back exercises.

     Simple back exercises

     - Advise patient to perform back-specific exercises to improve flexibility and core muscle strength. These may increase pain levels temporarily, but are likely to hasten recovery and prevent recurrences.
     - Consider requesting a supervised exercise program, especially if patient has no prior experience of an exercise regimen.

     See HANDI – Exercise: Chronic Low-Back Pain

   - Provide advice about returning to work.

resources

6. Consider psychological therapy to help manage coexisting depression/anxiety and other psychosocial fact the patient's recovery.

   Psychological therapy

   - Cognitive behavioural therapy (CBT):
     - Psychoeducation about chronic pain, the relationships between thoughts and emotional and physical reactions, sleep hygiene, relapse prevention, and maintenance of gains.
     - Instruction and practice in changing dysfunctional thoughts, setting and working towards behavioural goals, relaxation skills (abdominal breathing, progressive muscle relaxation, and guided imagery), activity pacing, and pain-coping strategies.
   - Mindfulness-based stress reduction (MBSR):
     - Includes practices such as body scan, yoga, and meditation.
     - Attention to thoughts, emotions, and sensations in the present moment without trying to change them.
   - Consider requesting adult psychological mental health assessment.

   For more details, see HANDI – Mindfulness and Cognitive Behavioural Therapy: Chronic Low Back Pain

COPD pathway

Before – Pulmonary Rehab is a "consider" step and listed at the same level as oxygen therapy and surgery.

1. Monitor:
   - smoking status and stage of change – offer smoking cessation advice at every opportunity. Smoking cessation is the most important modifier of this disease process.
   - exercise tolerance and capacity to carry out activities of daily living. Regular exercise reduces deconditioning and breathlessness.
   - BMI, and advise about nutrition as appropriate.
   - medications and inhaler technique. Error rates increase with age, disease severity and number of different devices. Inhaler device technique should be taught and checked regularly.
   - complications.
   - associated conditions.
2. Consider:
   - Pulmonary rehabilitation
   - Oxygen therapy
   - Surgery – Some patients may symptomatically benefit from surgical interventions such as bullectomy, lung volume reduction surgery or transplant.
3. Provide patient education on symptom recognition and exacerbation management. Consider involving family and carers.

After – Pulmonary Rehab brought forward in the management process and changed to a "recommend" step.

1. Monitor smoking status and stage of change.
   - Offer smoking cessation advice at every opportunity.
   - Smoking cessation is the most important modifier of this disease process.
2. Recommend pulmonary rehabilitation for all symptomatic patients and an ongoing exercise maintenance program. Regular exercise reduces de-conditioning and breathlessness.

Pulmonary rehabilitation

Pulmonary rehabilitation is the cornerstone treatment of COPD, and is at least as effective as inhaled medications.

- Suitable for patients with stable COPD and following exacerbations of COPD.
- Benefits include:
  - improved fitness, strength and exercise capacity.
  - reduced feelings of breathlessness.
  - reduced hospital admission and re-admission after exacerbations.
  - reduced mortality.
  - improved health-related quality of life.
- For detailed reference, see HANDI – COPD: Pulmonary Rehabilitation.
- For patient information, see Exercise is Medicine – COPD and exercise.
- For service providers, see Pulmonary Rehabilitation.

Depression in Adults pathway

Before – this pathway already had many good lifestyle advice and self-help resources

4. Encourage a healthy lifestyle as an adjunct to treatment.

> **Healthy lifestyle**
>
> Encourage healthy eating, establishing good sleep hygiene, new hobbies, physical exercise, and avoiding harmful intakes (alcohol, smoking, caffeine, substance abuse).
>
> See also:
>
> - Mind.org.uk – Food and Mood
> - Beyond Blue (fact sheets):
> - Drugs, Alcohol and Mental Health
> - Sleeping Well
> - Black Dog Institute (fact sheets):
> - Exercise and Depression
> - Managing Depression with Exercise
> - Smoking Cessation pathway
> - Alcohol and Drug Treatment Requests

5. Consider self help resources and e-therapy resources.
6. Support and counselling:
   - Provide psychoeducation and support.
   - Give emergency contact numbers to patient and family/carers.
   - With the patient's consent, involve family and carers in their management.
   - Discuss the benefits of early return to, or engagement in, paid or unpaid work.
   - Consider focused psychological strategies. Depending on general practitioner experience this may be provided in general practice, or refer to a psychologist.

After – HANDI resources added including a new section on Bibliotherapy. E-therapy expanded into a drop down to save clinicians leaving the page for more information.

5. Provide non-pharmacological interventions:
   - Encourage effective healthy lifestyle strategies.

Healthy lifestyle strategies

- Healthy eating – Mind – Exploring Food and Mood
- Exercise and depression. See RACGP – HANDI – Exercise: Depression
- Good sleep habits
- Smoking Cessation – Beyond Blue – Depression and Quitting Smoking
- Abstaining from alcohol and recreational drugs
- Relaxation and mindfulness – Black Dog Institute:
  - Quick Relaxation Techniques
  - Mindfulness in Everyday Life (with GP notes)
- Daily planning and pleasurable activities

A single resource that combines all these elements is Beyond Blue – Staying Well – A Guide to Recovering from Anxiety and Depression

   - Consider self-help resources:
     - E-therapy

E-therapy

- Internet-based or computerised cognitive behavioural therapy programs
- The content is similar to, and based on, therapist-provided CBT programs
- Programs vary in style, complexity, content and clinician involvement
- For further information and recommended sites see:
  - Mental Health E-Therapy pathway
  - RACGP – HANDI – Internet-based or computerised CBT: depression and anxiety

     - Bibliotherapy

Bibliotherapy

- Bibliotherapy is the use of books in the treatment of mental or psychological disorders.
- Although books can sometimes work on their own (unguided self-help), research has shown that self-help works best with support from a health professional (guided self-help).
- For further information and recommended books see:
  - RACGP – HANDI – Bibliotherapy: Depression
  - Reading Well – Books on Prescription – Mental Health

   - Provide psychoeducation and offer practical emotional support.
     - Give emergency contact numbers to patient and family or carers and discuss crisis interven
     - With the patient's consent, involve family and carers in their management.
     - Consider specific social support needs (e.g., accommodation, addiction, carer support, respite Health Community Support.
     - Discuss the benefits of early return to, or engagement in, paid or unpaid work.
     - Consider focused psychological strategies.

Metabolic Syndrome pathway

Before – this is a new pathway for the region. Previously only access to separate pathways for hypertension, weight management, hyperlipidaemia, dietary advice, fatty liver, and diabetes management pathways.

After – featuring expanded lifestyle management advice section. The approach for this pathway will become standardised across other pathways in Mackay that have lifestyle management components. Townsville will not have a localised version of this specific pathway.

Assessment

1. Diagnosis is based on ≥ 3 of the diagnostic criteria. Measure waist circumference, blood pressure, fasting glucose and lipids.
2. Assess patient risks:
   - Co-morbidities:
     - Diabetes – complete the AUSDRISK assessment tool
     - Absolute cardiovascular risk – online calculator.
   - Increased risk of metabolic syndrome from:
     - medications.
     - other medical conditions e.g., Cushing syndrome, polycystic ovarian syndrome (PCOS).
3. Assess the patient's current lifestyle behaviours.
   - To do this well can take a significant amount of time.
   - Consider asking the patient to complete an online tool such as the Diet, Activity, and Behaviour (DAB) Questionnaires at home and bring the results to the next appointment.

Management

Take a broad approach to reducing central obesity and insulin resistance with a focus on the potential reversibility of metabolic syndrome.

1. Discuss current lifestyle factors and how these can be improved:
   - The results of the DAB questionnaire can help focus this discussion on specific changes relevant to the patient.
   - Advise that changes are best made in small, graduated steps that can be maintained long term.
2. Inform patient that habit is one of the most powerful predictors of lifestyle behaviour change[1]:
   - Recommend programs that can help to form new habits (e.g., Top Ten Tips for a Healthy Weight) and break old ones (e.g., Do Something Different – No Diet Diet).
   - Consider if the patient would benefit from a structured lifestyle support program.
3. Provide education about the general principles of healthy eating, which can be summarized [2] as eating food that is minimally processed, mostly plant-based and not too much:
   - Encourage the patient to adopt a healthy eating pattern that meets their individual requirements and that they will be able to maintain in the long-term.
   - Offer information about evidence-based dietary plans:
     - Australian dietary guidelines
     - Dietary approach to stop hypertension (DASH)
     - Mediterranean diet
     - Lower carbohydrate diet
   - Consider requesting advice from an accredited practising dietician (APD), especially if there are significant changes to a diet being considered.
4. Advise patient to increase physical activity.
5. Provide information on managing chronic stress:
   - Assist the patient to identify areas of their life that may contribute to chronic stress and plan ways of managing these.
   - Discuss the health benefits of achieving a restorative restful balance in the patient's life.
   - Consider requesting formal psychological mental health assessment or counselling and therapy programs.
   - See also:
     - BeyondBlue – Reducing Stress
     - healthdirect – Relaxation Techniques for Stress Relief
6. Consider pharmacotherapy for specific risk factors e.g., hypertension and dyslipidaemia. Plan to deprescribe over time, as the underlying metabolic derangement can be reversed with lifestyle modifications.

18.3 Glossary of Terms and/or Abbreviations

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