NATIONAL CLINICAL EFFECTIVENESS COMMITTEE

Tús Áite do Shábháilteacht Othar
Patient Safety First

Management of Constipation in Adult Patients Receiving Palliative Care

National Clinical Guideline No. 10

Summary

An Roinn Sláinte
DEPARTMENT OF HEALTH

November 2015

Development Group
The Management of Constipation in Adult Patients Receiving Palliative Care Guideline was developed by a subgroup of the Health Service Executive (HSE)/Royal College of Physicians of Ireland (RCPI) National Clinical Programme for Palliative Care, known as the Guideline Development Group (GDG). The Guideline Development Group was supported by senior multidisciplinary service leads assembled by the National Clinical Programme for Palliative Care who evaluated the quality of the development process and documentation at key time points. This group was called the Guideline Steering Group.

The All Ireland Institute of Hospice and Palliative Care (AIIHPC) awarded an educational bursary to three members of the Guideline Development Group. The AIIHPC had no editorial influence on the content of this guideline.

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This Summary Guideline should be read in conjunction with the full version National Clinical Guideline. The full version is available on the website: http://health.gov.ie/patient-safety/ncec/

Reference numbers in this summary refer to the complete list of references, which can be found in the full version National Clinical Guideline No. 10.

Disclaimer
The Guideline Development Group's expectation is that healthcare staff will use clinical judgement, medical, nursing and clinical knowledge in applying the general principles and recommendations contained in this document. Recommendations may not be appropriate in all circumstances and the decision to adopt specific recommendations should be made by the practitioner taking into account the individual circumstances presented by each patient/ resident and available resources.

Therapeutic options should be discussed with the responsible physician on a case-by-case basis as necessary. Drug costs may fluctuate and the costs contained in Tables 5 and 6 were prepared in 2014.

National Clinical Effectiveness Committee (NCEC)

The National Clinical Effectiveness Committee (NCEC) was established as part of the Patient Safety First Initiative. The NCEC is a partnership between key stakeholders in patient safety. NCEC's mission is to provide a framework for national endorsement of clinical guidelines and audit to optimise patient and service user care. The NCEC has a remit to establish and implement processes for the prioritisation and quality assurance of clinical guidelines and clinical audit so as to recommend them to the Minister for Health to become part of a suite of National Clinical Guidelines and National Clinical Audit.

The aim of the suite of National Clinical Guidelines is to provide guidance and standards for improving the quality, safety and cost-effectiveness of healthcare in Ireland. The implementation of these National Clinical Guidelines will support the provision of evidence-based and consistent care across Irish healthcare services.

NCEC Terms of Reference

1. Provide strategic leadership for the national clinical effectiveness agenda.
2. Contribute to national patient safety and quality improvement agendas.
3. Publish standards for clinical practice guidance.
4. Publish guidance for National Clinical Guidelines and National Clinical Audit.
5. Prioritise and quality assure National Clinical Guidelines and National Clinical Audit.
6. Commission National Clinical Guidelines and National Clinical Audit.
7. Align National Clinical Guidelines and National Clinical Audit with implementation levers.
8. Report periodically on the implementation and impact of National Clinical Guidelines and the performance of National Clinical Audit.
9. Establish sub-committees for NCEC workstreams.
10. Publish an Annual Report.

Information on the NCEC and endorsed National Clinical Guidelines is available at:
www.health.gov.ie/patient-safety/ncec

Using this National Clinical Guideline

This guideline is for use by healthcare professionals providing generalist or specialist palliative care to patients with a life-limiting illness in hospital, hospice and community-based settings (1). This includes specialist palliative care providers, physicians, surgeons, general practitioners, nurses, pharmacists and dietitians. For those providing generalist palliative care, the guideline recommendations indicate where specialist advice should be sought. This guideline may also be of interest to patients with a life-limiting condition and their carers.

This guideline should not be used in patients without a life-limiting illness. This guideline does not apply to children.

Constipation is one of the most frequently encountered symptoms in the palliative care population. It can significantly impact on a patient's quality of life and may necessitate the use of additional medications, emergency visits and hospitalisation.

The consequences of untreated constipation place a significant burden on the healthcare system. Prescribing practice lacks consistency and despite laxative therapy, up to seventy percent of patients receiving palliative care continue to experience symptomatic constipation. The expected outcome of the recommendations made in this guideline is to prevent or reduce constipation and improve quality of life.

This Guideline complements the National Clinical Guideline No 9, Pharmacological Management of Cancer Pain in Adults, also developed by the National Clinical Programme for Palliative Care.

I would like to acknowledge the work and commitment of the Guideline Development Group and Guideline Steering Group and all those who contributed to the development of the guideline and supporting resources. We would also like to acknowledge the support of the All Ireland Institute of Hospice and Palliative Care.

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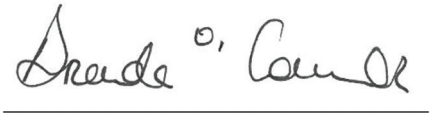
Finally we would like to thank the NCEC guideline appraisal team, and Dr Kathleen Mac Lellan, in particular for their assistance in bringing this guideline to completion.



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1 Definition and impact of constipation in adult patients receiving palliative care

1.1 Need for National Clinical Guideline

Constipation is one of the most common symptoms experienced by patients with advanced, progressive illness. There is a wealth of evidence to suggest that the treatment of constipation can and should be improved, yet this is frequently delayed until constipation has become a significant problem (11). So this is clearly a symptom that needs to be addressed. In order to successfully adopt best practice, standardisation of assessment and care processes is critical (21).

The purpose of this guideline is to provide recommendations based on best available evidence for the management of constipation in adult patients with life-limiting conditions in receipt of generalist or specialist palliative care across all healthcare settings. The expected outcome of the recommendations made in this guideline is to prevent or reduce constipation and improve quality of life.

1.2 Clinical impact of constipation in adults receiving palliative care

The prevalence of constipation is estimated at 30-90% depending on the population studied (4, 5). In palliative medicine, constipation is the third most frequently encountered symptom after pain and anorexia (6). Common factors which increase the risk of constipation in this population include physical illness, hospitalisation, reduced fluid intake and the use of opioids (7). Constipation can occur at any stage in the disease trajectory, but evidence suggests that constipation is more problematic in advanced disease (8). When present, constipation causes considerable suffering for the affected individual, either as a direct consequence of the physical symptoms or due to related social and psychological complications.

Constipation remains poorly recognised and undertreated by healthcare providers (7, 9). This is driven by the lack of a universally agreed definition of constipation and the disparity between patients and health professionals as to what constitutes constipation (4).

Frequently constipation has become a significant problem (11) before it is treated, leading to a range of symptoms including anorexia, nausea, abdominal pain, and bowel obstruction. Studies have demonstrated that constipation is inadequately treated in a significant proportion of palliative care patients (12, 13). Prescribing practice lacks consistency and despite laxative therapy, up to 70% of patients receiving palliative care continue to experience symptomatic constipation (14, 15). This suggests that the management of constipation in this population needs to be improved.

Although laxative use is commonplace in palliative care, there is surprisingly little evidence available to guide the choice of laxative (11). A Cochrane review conducted by Miles et al, 2006, concluded that "the treatment of constipation in palliative care is based on inadequate experimental evidence". As a result, there persists an uncertainty about "best" management in this group of patients (16).

As scientific evidence is so limited, long years of clinical experience have yielded recommendations based primarily on consensus expert opinion (7, 17-20).

1.3 Scope of National Clinical Guideline

This guideline applies to adult patients with a life-limiting illness and is for use by healthcare professionals providing generalist or specialist palliative care in hospital, hospice and

community-based settings. This includes specialist palliative care providers, physicians, surgeons, general practitioners, nurses, pharmacists and dietitians. For those, providing generalist palliative care, the guideline recommendations indicate where specialist advice should be sought.

This guideline may also be of interest to patients with a life-limiting condition and their carers. A patient information leaflet can be accessed on the National Clinical Programme for Palliative Care Website http://www.hse.ie/palliativecareprogramme and NCEC website www.health.gov.ie/patient-safety/ncec.

This guideline should not be used in patients without a life-limiting illness. This guideline does not apply to children.

1.4 Grading of recommendations

1.4.1 Key to grading method used to highlight quality of evidence and recommendations:

This guideline uses a system for grading the quality of evidence based on the CEBM (Centre for Evidence Based Medicine) method of Oxford University (1) as follows:

- Level 1a Meta analyses of randomised control trials (RCT)
- Level 1b At least one RCT
- Level 2a At least one well designed controlled study without randomisation or Systematic Review (SR) of cohort studies
- Level 2b A well designed cohort study
- Level 3 Well designed experimental descriptive studies, such as case control or cross sectional studies
- Level 4 Case Series
- Level 5 Expert Committee/Clinical experience

1.4.2 Grading the strength of recommendations:

- A Level 1 studies
- B Level 2 or 3 studies
- C Level 4 studies
- D Level 5 studies or inconsistent or inconclusive studies of any level

1.4.3 Considered judgement:

The Scottish Intercollegiate Guideline Network (SIGN) introduced the concept of considered judgement when formulating evidence-based recommendations for SIGN 50 (2). Through the 'considered judgement' process, guideline developers are able to downgrade a recommendation where they consider there are important inconsistencies in the evidence base; evidence is not generalisable; not directly applicable to the target population; or for other reasons is perceived as being weaker than a simple evaluation of the methodology would suggest (3). As such, the recommendations made are a reflection of both the strength of the evidence informing the recommendation, but also the development group's decision as to the strength of recommendation that can be made based on that evidence.

2 National Clinical Guideline recommendations

2.1 Introduction to national recommendations

Key recommendations are outlined below numbered **Recommendation1-7**; with the strength of evidence for the recommendation to follow (A/B/C/D), based on the CEBM method of Oxford University. Grade A recommendations represent the strongest level of recommendation based on the strongest evidence, and Grade D recommendations are based on lower levels of evidence.

2.2 Constipation in palliative care

The primary goal of palliative care is the optimisation of patient quality of life. Collaboration between healthcare providers, the patient and family is essential in the development of management strategies that promote comfort and maintain dignity (17). Treatment of burdensome symptoms such as constipation is an essential part of palliative care.

2.2.1 Prevalence

Constipation is one of the most frequently encountered symptoms in the palliative care population and has the potential to significantly impair quality of life (5). Estimated prevalence rates of constipation in palliative care patients vary from 30% to 90% (42). Such wide variation is likely to reflect the lack of an agreed-upon definition of constipation and is dependent on the population of patients assessed (5).

Constipation remains poorly recognised and undertreated by healthcare providers (7, 9). In some cases, constipation may even be considered a low priority in the overall management of patients with advanced illness (7). The lack of a universally agreed definition of constipation and the disparity between patients and health professionals as to what constitutes constipation significantly contribute to the challenge of managing constipation in this population (43).

2.2.2 Defining constipation

Constipation is a highly subjective symptom and what constitutes normal bowel habit varies between individuals. In general, two aspects should be taken into consideration in defining constipation in patients with advanced illness (44).

- The first of these are measurable objective symptoms including frequency of defecation and stool characteristics.
- The second is the patient's perception of constipation including ease of defecation and associated level of discomfort.

For the purpose of this guideline, constipation is considered to be the infrequent (relative to a patient's normal bowel habit), difficult passage of small, hard faeces (44). However, the use of these criteria alone in defining constipation may fail to capture associated subjective symptoms which should also be taken into account. These include pain on defecation, flatulence, bloating, straining, unproductive urges or a sensation of incomplete evacuation (7, 17, 44). Although bowel frequency varies between individuals, if a patient is defecating less than three times per week, as used in the Rome III criteria for defining chronic constipation, assessment is recommended (17).

2.2.3 Impact of constipation in palliative care

The negative impact of constipation should not be underestimated. Constipation has been reported to rival the distress caused by pain (45). Constipation-related sequelae include nausea, vomiting, anorexia, haemorrhoids, anal fissures, bowel obstruction and urinary retention. Furthermore, constipation itself is an independent cause of delirium (46). These factors can significantly impact on a patient's quality of life and may necessitate the use of additional medications, emergency visits and hospitalisation (47). The consequences of untreated constipation are not limited to those experienced by patients and carers. It also places a significant burden on the healthcare system. Constipated palliative care patients receive more community nursing support and are 20% more likely to be hospitalised (48, 49). Hospitalised patients with constipation require increased nursing time. A study undertaken with hospice patients suggests that earlier and more effective interventions for this group will result in significant clinical and economic benefits (24).

2.2.4 Causal factors of constipation in palliative care

Multiple factors, both organic and functional, place patients with advanced illness at greater risk of constipation. The evidence that underlies opioids as a cause for constipation in palliative care is robust but the literature for other important causative factors is limited. Table 2 lists the common causes of constipation affecting palliative care patients.

Level 5

Table 2 Contributing factors to constipation in patients with advanced progressive illness
(Adapted with permission from Sykes* 2004 (44))

Organic Factors	
Pharmacological agents	Opioid analgesics, anti-cholinergics, antacids, anti-convulsants, anti-emetics, anti-tussives, anti-diarrhoeals, anti-parkinsonians, neuroleptics, anti-depressants, iron, diuretics, chemotherapeutic agents
Metabolic disturbances	Dehydration, hypercalcaemia, hypokalaemia, uraemia, hypothyroidism, diabetes mellitus
Weakness/fatigue	Proximal and central myopathy
Neurological disorders	Cerebral tumours, spinal cord impingement or infiltration, autonomic dysfunction
Structural abnormalities	Pelvic tumour mass, radiation fibrosis
Pain	Painful anorectal conditions, uncontrolled bone pain and other cancer pain
Functional Factors	
Diet	Anorexia, reduced food intake, poor fluid intake, low fibre diet
Environmental/cultural	Lack of privacy, comfort or assistance with toileting, cultural sensitivities regarding defecation
Other factors	Advanced age, inactivity, decreased mobility, depression, sedation

*Source: Oxford Textbook of Palliative Medicine 3E edited by Derek Doyle, Geoffrey Hanks, Nathan Cherny & Sir Kenneth Calman (2004) Ch. 8.3.3 "Constipation and diarrhoea" by Nigel Sykes pp. 483–496, Table 2 (p. 485) and Table 6 (p. 487) adapted. See www.oup.com

2.2.5 Disciplines responsible for the management of constipation in palliative care

Collaborative and informed discussions between the patient, family and all healthcare professionals, particularly the disciplines of medicine, nursing and pharmacy, are essential to create an optimal multidisciplinary strategy for the assessment and management of constipation.

Best practice point
Where possible, the assessment and management of constipation should be delivered within a multidisciplinary team with a clearly identified clinical lead and active communication between all team members.

This guideline is for use by healthcare professionals providing generalist or specialist palliative care to patients with a life-limiting illness in hospital, hospice and community-based settings(1). This includes specialist palliative care providers, physicians, surgeons, general practitioners, nurses, pharmacists and dietitians. For those providing generalist palliative care, the guideline recommendations indicate where specialist advice should be sought.

2.3 Constipation assessment

A comprehensive history and physical examination is required.

2.3.1 Bowel history

The history should include a systematic assessment taking into account the patient's overall illness including their physical, psychosocial and functional needs.

A thorough history should establish the difference between the patient's current and usual bowel pattern. Particular attention should be paid to the common causes of constipation in patients with advanced progressive disease (see Table 2).

It is important to recognise that constipation may lead to paradoxical or 'overflow' diarrhoea, with leakage of fluid faeces past an impacted mass.

Assessment of current bowel performance should include the following:

- Onset of symptoms
- Aggravating and alleviating factors
- Frequency and pattern of bowel motions
- Stool volume and appearance (consistency, colour, odour, blood, mucous)
- Nausea
- Abdominal discomfort
- Bloating or flatus
- Tenesmus.

2.3.2 Constipation assessment scales

A number of constipation assessment scales have been developed to evaluate the presence and severity of constipation. They can be particularly useful in encouraging patient self-assessment or when communication is difficult. The use of images to describe stool consistency has been shown to be meaningful to patients (17). Although these scales are useful, validated tools for research and training, further prospective analysis in day-to-day practice is needed to confirm the clinical utility and as such, they are not recommended for routine practice. In order to be useful in clinical practice, essential elements of any scale include readability and completion time (7).

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2.3.3 Physical examination

Conduct a thorough physical examination for signs of constipation, taking into account cultural sensitivities and privacy.

The important elements of abdominal examination include the following:

- Distension
- Visible peristalsis
- Abdominal tenderness
- Faecal masses
- Nature of bowel sounds.

2.3.4 The use of digital rectal examination

The 2007 National Institute for Health and Care Excellence (NICE) guidelines recommend that a digital rectal examination (DRE) be included as an essential component of bowel assessment (50). This practice is underutilised in both non-palliative and palliative care patients (51). In supporting implementation of the guideline and if not already doing so, it is expected that providers of education and training in constipation management will include DRE training in existing and future programmes, with reference to this guideline, local practice, procedures, protocols and guidance (see section 1.10.2).

A DRE should be considered to exclude faecal impaction if it is more than 3 days since the last bowel movement, or the patient complains of incomplete evacuation (7). Individual patient circumstances should guide this decision. DRE should not be routinely conducted in actively dying patients. **Level 5**

Issues that should be assessed during a DRE include the following:

- Anal fissures or tears
- Haemorrhoids
- Anal sphincter tone
- Rectal dilatation
- Presence or absence of stool
- Stool consistency
- Rectal masses.

As the normal state of the rectum is empty, the absence of faecal matter on DRE does not necessarily exclude constipation (52). One study found that 30% of patients with an empty rectum had faecal loading in the sigmoid colon on x-ray (53). **Level 4**

Caution should be exercised in performing a DRE in thrombocytopaenic (Platelets $<20 \times 10^9$/L) or immuno-compromised patients (52). **Level 5**

2.3.5 The use of radiology

A plain film of the abdomen (PFA) is a simple, inexpensive and widely available test that is frequently used in patients in whom constipation is suspected (54).

However, the evidence assessing the validity and reliability of a PFA in the routine evaluation of constipation is contradictory (55-57).

There is little evidence specific to the palliative care population. A retrospective study by Bruera et al 1994, reviewed the assessment and diagnosis of constipation in 103 terminal cancer patients admitted to a palliative care unit. All patients underwent a PFA that scored for the presence of stool in the colon. There was good correlation between blinded assessments by two physicians (0.78). The authors suggest that a PFA might allow for faster diagnosis and treatment of constipation for inpatients and outpatients, potentially preventing or shortening hospital admissions (58). **Level 3**

A PFA may be particularly useful in patients who cannot provide a reliable bowel history, for example, patients with cognitive impairment. It may also provide clarification in suspected "overflow diarrhoea" (57). **Level 5**

Recent developments including manometric, neurophysiologic and radiologic techniques have been assessed in the diagnosis of chronic constipation. There are no studies investigating the use of these techniques in a palliative setting and their role is likely to be limited.

Recommendation 1 Constipation assessment

The following are responsible for implementation of recommendation 1

CEO/General Managers/Line managers are responsible for ensuring all healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key Finding A comprehensive assessment is required to accurately diagnose the presence and potential causes of constipation in patients with life-limiting illnesses.	
Key recommendations	
D	**1.1** A thorough history and physical examination are recommended as essential components of the assessment process.
D	**1.2** Constipation assessment scales may be useful in encouraging patient self-assessment or when communication is difficult. Due to a lack of evidence in the use of constipation assessment scales in day-to-day clinical practice they are **not** recommended for routine use.
D	**1.3** A digital rectal examination (DRE) should be considered to exclude faecal impaction if it has been more than 3 days since the last bowel movement or if the patient complains of incomplete evacuation (following appropriate DRE training).
D	**1.4** Caution is advised when considering a DRE in immuno-compromised or thrombocytopaenic patients.
D	**1.5** A plain film of the abdomen (PFA) is **not** recommended for routine evaluation but may be useful in combination with history and examination in certain patients.

2.4 Prevention

In order to prevent or reduce constipation, patient and caregiver education is essential. Patients should be encouraged to take a proactive role in the prevention of constipation, however, research has highlighted that this strategy cannot be solely relied upon (7). **Level 5**

Prevention, like assessment, should be carried out on a continuous basis. Key elements of prevention should include (7):

- Ensuring maintenance of patient privacy and comfort to enable normal defecation
- Encourage physical activity within the patient's limits
- Increasing fluid and fibre intake where appropriate
- Recognition of potential constipating pharmacological agents with discontinuation when possible or provision of prophylactic laxative therapy for patients prescribed opioids.

Recommendation 2 Prevention

The following are responsible for implementation of recommendation 2

CEO/General Manager/Line managers are responsible for ensuring all healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key finding Preventative measures for constipation should be ongoing throughout the patient's disease trajectory.	
Key recommendations	
D	**2.1** Education on the importance of pharmacological and non-drug measures is essential to enable patients and caregivers to take an active role in constipation prevention.
D	**2.2** Medications should be reviewed in order to identify potentially constipating agents and prophylactic laxatives prescribed when appropriate. Unless there are existing alterations in bowel patterns (bowel obstruction or diarrhoea) all patients prescribed regular opioids should be started on a laxative regimen and receive education on bowel management.

2.5 Non-pharmacological management

Once a diagnosis of constipation has been confirmed the degree of intervention should be guided by a patient's clinical status. Factors to consider include performance status, stage of disease and disease trajectory, the level of distress resulting from constipation and the patient's preference. The clinician's paramount concern should be the maintenance of patient comfort and dignity (17).

The primary objective of preventing and treating constipation should be to re-establish comfortable bowel habit to the patient's satisfaction and avoid constipation-related complications (7). Education, dietary recommendations and non-pharmacological interventions are at least as important as pharmacological treatment (18). However, once constipation is established, a combination of these measures is generally required (17).

Level 5

2.5.1 *Optimised toileting*

The physical environment should be reviewed to facilitate good sitting position and ensure privacy (visual, auditory and olfactory). Positioning both feet on a solid surface maximises abdominal muscle function to aid defecation. Sitting decreases the acuity of the anorectal angle facilitating faecal propulsion from the rectum into the anal canal, hence toilets and commodes should be used in preference to bedpans (59, 60). The most powerful gastro-colic reflex occurs in the morning, the patient should be encouraged to use the toilet twenty minutes after breakfast (17, 52). **Level 5**

2.5.2 *Fluid and fibre intake*

Insoluble fibre (e.g. bran, vegetables, whole grains) increases stool bulk and plasticity leading to colonic distension and promotion of peristalsis. When combined with adequate fluid it can help prevent constipation. Fibre-containing oral nutritional supplements are available.

Many palliative care patients suffer from anorexia leading to reduced dietary fibre intake. The amount of fibre required may be beyond the capabilities of patients in this population. A study undertaken in cancer patients undergoing radiotherapy demonstrated that a 450% increase in fibre intake would be required to produce a 50% increase in bowel frequency (7). **Level 2b**

Adequate fluid intake is an important factor in promotion of normal bowel function, however the ability to consume fluids deteriorates with disease progression. Fluid intake can be improved using foods containing a large amount of water such as soups, fruit, gelatin desserts, yogurt, mousses, sauces, milky desserts and fortified supplements (17). Research in chronic functional constipation suggests that prevention of constipation requires at least 2 litres of fluid per day (61). **Level 1b**

A minimum of 1.5 litres is required for the effective and safe use of dietary fibre supplements. For these reasons, the use of fluid and fibre supplementation may not be an appropriate choice in the management of constipation in palliative care patients (7, 17). **Level 5**

2.5.3 *Mobility*

Literature suggests a correlation between exercise and improved bowel transit time (62). In a palliative care population the capacity for physical activity may be reduced. Activity should be encouraged within the patient's limits, however; the aim of maximising mobility should primarily be the improvement of quality of life (63). **Level 5**

2.5.4 *Abdominal massage*

Abdominal massage, also referred to as bowel or colonic massage, may be beneficial for some patients in the prevention and treatment of constipation. This remains an unproven intervention with a limited evidence base.

- A recent RCT of 60 Swedish patients with idiopathic constipation demonstrated that massage decreased the severity of gastrointestinal symptoms and increased bowel frequency, but did not lead to a reduction in laxative requirements. Abdominal massage initially produced a high healthcare cost per Quality-Adjusted Life Year (QALY) of €60,000- €75,000, depending on whether it was administered by the healthcare professional or patient. The authors suggest that abdominal massage should be seen as a complement to laxative use rather than a replacement (64, 65). **Level 1b**
- A small RCT in multiple sclerosis patients (n=30) with constipation suggested a positive effect of massage on symptoms of constipation (66).

Despite recent studies there remains a lack of clear direction in the existing literature on the most efficacious type, intensity or timing of massage. Although added advantages of this technique are that patients perceive it as relaxing and that it can be taught to patients and carers to enable it to be carried out at home, the cost involved must be taken into account (52, 65).

Recommendation 3 Non-pharmacological management

The following are responsible for implementation of recommendation 3

CEO/General Managers/Line managers are responsible for ensuring healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key finding Non-pharmacological strategies in the management of constipation are at least as important as the use of pharmacological agents.	
Key recommendations	
D	**3.1** Attention should be paid to the provision of optimised toileting while ensuring adequate privacy and dignity for all patients.
D	**3.2** Consideration should be given to lifestyle modification including the adjustment of diet and activity levels within a patient's limitations.

2.6 Pharmacological management

Although non-pharmacological measures will help many patients, pharmacological treatment is often necessary. Laxatives are commonly prescribed in palliative care, with 50% of patients receiving two or more laxatives simultaneously (67). However, little evidence-based data exists in relation to the efficacy and safety of laxatives in this patient population. Where studies exist, laxatives are usually compared to placebo with little evidence available to establish differential efficacy. Much of the published research pertains specifically to chronic constipation and many therapeutic recommendations remain based on clinical experience.

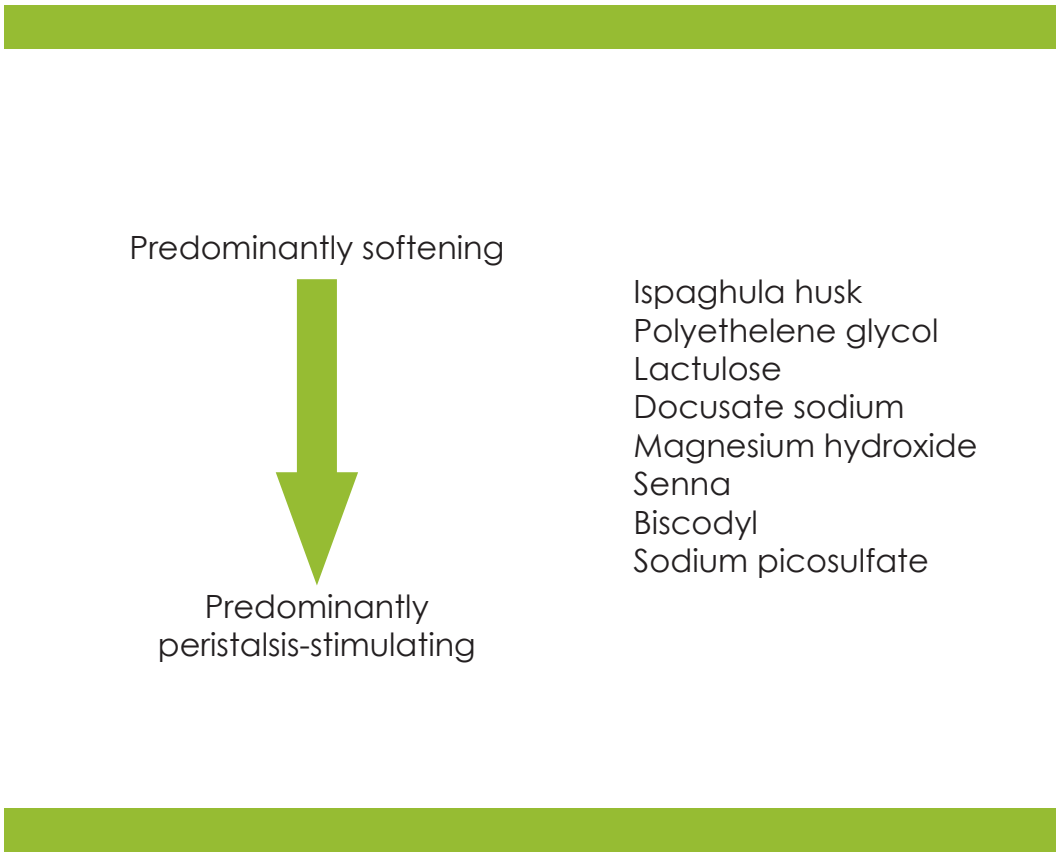
A review undertaken by the Cochrane Collaboration explored the use of laxatives for the management of constipation in palliative care patients. Only four trials fit the Cochrane criteria for evaluation, where minimal differences were shown in effectiveness between individual laxatives. The authors conclude that due to a lack of comparative randomised controlled trials (RCTs), the treatment of constipation in palliative care patients is based on inadequate evidence. "There persists an uncertainty about the "best" management of constipation in this group of patients" (16).

Level 1a

Laxatives can be classified into two broad categories; those that act to predominantly soften faecal matter and those that stimulate gut peristalsis (7) (see Figure 1). Within each category, there is no conclusive evidence to support any specific laxative preparation and individual patient characteristics, their preference and laxative cost are essential considerations. The assessment process will help to identify which type of laxative is indicated but a combination of the two categories may be most effective and is the recommendation made for general use in the United Kingdom Palliative Care Formulary (68, 69). The Management Algorithm (Appendix XII) can be used as a guide for treatment.

Level 5

Figure 1 Oral laxative classification
(Adapted with permission from Skyes*, 2004, (44))



*Source: Oxford Textbook of Palliative Medicine 3E edited by Derek Doyle, Geoffrey Hanks, Nathan Cherny & Sir Kenneth Calman (2004) Ch. 8.3.3 "Constipation and diarrhoea" by Nigel Sykes pp. 483–496. See www.oup.com

If single-agent oral laxative treatment is given alone, a bowel motion should be expected within 3 days. If this does not occur, the combination of softening and stimulating laxatives is essential; the dose of which should be titrated daily or alternate days according to response. The development of faecal leakage suggests a need to reduce the softener and perhaps increase the stimulant. If bowel colic occurs the dose of the softening laxative should be increased relative to the stimulant dose (7). **Level 5**

The different laxatives available and the cost of commonly used laxatives in palliative care are shown in Tables 3-6.

2.6.1 Classification of laxatives

2.6.1.1 Bulk-forming laxatives

Bulk-forming laxatives are fibre supplements, e.g. Ispaghula husk and methylcellulose. These hydrophilic agents absorb water from the intestinal lumen, softening stool consistency and increasing stool bulk, thus promoting peristalsis. Their onset of action is approximately 10-24 hours. Adequate fluid intake must be maintained when using these agents in order to avoid mechanical bowel obstruction. Bulk-forming agents can also interfere with the absorption of several common medications including warfarin, aspirin and calcium (70).

- The American College of Gastroenterologists chronic constipation task force deemed that there was sufficient evidence to support a Grade B recommendation for the use of Ispaghula to increase stool frequency in patients with chronic constipation (71). **Level 2**
- In the palliative care population their use is largely limited by tolerance (44).

2.6.1.2 Osmotic Laxatives

Osmotic laxatives can be subdivided into saline laxatives, sugars and polyethylene glycols (PEG).

Saline laxatives e.g. magnesium salts, draw water into the intestinal lumen from the bowel wall and thereby promote peristalsis. Their use can result in dehydration and electrolyte imbalance. Magnesium hydroxide may interfere locally with the absorption of other drugs by increasing gastric pH. This can be avoided by giving other medications 2-3 hours before the administration of magnesium hydroxide.

Lactulose, a synthetic sugar remains unabsorbed until it reaches the colon, where it is metabolised by bacteria. This results in a decrease in the intraluminal pH value and subsequently promotes peristalsis. The fermenting process leads to flatulence as a result of gas production. Patients may find the sweet taste unpalatable.

High molecular weight PEGs are non-absorbable, non-metabolised soluble polymers that form hydrogen bonds with water in the gut. Due to high osmotic pressure PEGs act as both a softening and bulk-forming agent due to water retention within the bowel.

- Numerous RCTs have demonstrated the sustained efficacy of PEG in the treatment of chronic constipation. Superiority of PEG in comparison with lactulose has also been demonstrated in increasing stool frequency and reducing straining. PEG has also been shown to be effective in faecal impaction (72, 73). **Level 1a**

2.6.1.3 Surfactants

These laxatives moisten the stool through a detergent action, thereby softening it e.g. docusate sodium. The onset of action is approximately 24-72 hours. Although relatively well tolerated, docusate is not completely free of side effects (74). Administration is recommended 2 hours before or after other medication to avoid disturbance in their absorption. There is a lack of evidence supporting the use of docusate in advanced illness.

- In a systematic review of docusate in the chronically ill conducted in 2000, Hurdon et al. concluded that the use of docusate for constipation in palliative care is based on inadequate experimental evidence (75). **Level 2a**
- A recent RCT exploring the use of docusate and sennosides compared to placebo and sennosides in hospice patients; reported no significant difference in stool frequency, volume or consistency between both groups (76). **Level 1b**

2.6.1.4 Lubricants/emollients

Lubricants, such as liquid paraffin, ease defecation by softening the stool. Caution should be used in this patient population due to the risk of anal seepage, irritation and granuloma formation in chronic use, reduced absorption of fat soluble vitamins and the potential for lipoid pneumonia if aspirated (77).

2.6.1.5 Stimulants

Stimulant laxatives work by stimulating the myenteric nerve plexus resulting in rhythmic muscle contractions and increased intestinal motility. They also inhibit sodium and water reabsorption and increase secretion of water into the bowel lumen. Stimulant laxatives provide a logical approach to opioid-induced slowing of colonic transit time by increasing propulsive activity. The most widely used stimulant laxatives are anthracenes (sennosides and dantron) and polyphenolics (bisacodyl and sodium picosulfate). Onset of action typically occurs within 6-12 hours. As a result of their peristaltic activity, stimulant laxatives can cause abdominal cramping, pain, diarrhoea and electrolyte imbalance.

Senna is a naturally occurring plant-derived anthranoid. Hydrolisation by bacterial flora in the colon yields active compounds. Individual responses vary and may be a result of differences in bacterial flora.

- Limited evidence, but much clinical consensus in palliative care, demonstrates that sennosides are as effective as lactulose (78). **Level 3**

Bisacodyl is a prokinetic with a hydrogogue effect, which acts locally in the large bowel by directly enhancing motility, reducing transit time and increasing the water content of the stool.

- A limited number of RCTs have demonstrated that bisacodyl is effective in increasing stool frequency and improving consistency when compared with placebo in patients with chronic constipation (79, 80). **Level 1b**

Sodium picosulfate has a similar mode of action to bisacodyl. Taken orally in liquid form, it is hydrolysed by the colonic microflora.

- A limited number of RCTs have demonstrated the efficacy of sodium picosulfate compared to placebo in the acute management of chronic constipation (81, 82). **Level 1b**

- One RCT compared the efficacy and safety of bisacodyl and sodium picosulfate. Both treatments were equally effective in treating constipation, providing a sustained improvement in symptoms. There was a trend towards better tolerability of bisacodyl based on the number of drug-related adverse events (82). **Level 1b**

Dantron is a synthetic anthranoid, which acts on the small and large bowel. It is used in combination with stool softening agent poloxamer, e.g. Co-danthramer. Dantron containing laxatives are only licensed for use in advanced illness due to evidence of carcinogenesis in animal studies. These agents should not be used in patients with urinary or faecal incontinence due to local dermatitis and excoriation.

- One study undertaken in 51 cancer patients demonstrated that patients had a higher stool frequency when taking lactulose plus senna compared to dantron combined with poloxamer. Patients with reduced constipation following lactulose plus senna subsequently reported an increase in constipation on changing to the dantron plus poloxamer arm (83). **Level 1b**

Of note, Dantron-containing products are due to be discontinued and withdrawn from the market in 2015.

2.6.1.6 Rectal Laxatives

Patients and carers may find rectal measures uncomfortable and undignified and in general, oral laxatives should be used in preference. However their rapid mode of action can be useful. They may have a necessary role (alone or in combination with oral laxatives), in patients with faecal impaction, in patients with spinal cord lesions disrupting bowel innervation or patients who cannot tolerate or swallow oral laxatives.

Digital rectal examination is required to assess the type of stool in the rectum and guide appropriate therapy (See Table 4). Rectal treatments can be given as either suppositories or enemas. These work by a combination of stool softening/lubrication and stimulation of the defecation reflex through rectal distension.

Bisacodyl is the only suppository that works by pharmacologically stimulating peristalsis and therefore needs to be in direct contact with the rectal wall to have effect.

Limited evidence suggests that microenemas may have almost equal efficacy and a more favourable side effect profile when compared with phosphate enemas. They could therefore be considered in preference (44, 84). **Level 3**

2.6.2 Adjuvant Therapies

2.6.2.1 Neostigmine

Neostigmine is an acetylcholinesterase inhibitor that can rapidly reverse intestinal atony by facilitating the transmission of impulses through the neuromuscular junction, stimulating intestinal tone and peristalsis. Its use has been studied in acute colonic pseudo-obstruction (85). Neostigmine is associated with adverse effects such as abdominal cramps, nausea, salivation, bronchoconstriction and bradycardia when administered at high doses without antimuscarinic drugs.

- Experience using neostigmine in advanced cancer patients is limited to case series. Reports suggest efficacy and tolerability when used at low doses in the treatment of refractory constipation (86, 87). **Level 4**

2.6.2.2 *Amidotrizoate (Gastrografin)*

Amidotrizoate (AM) is an anionic mixture of sodium diatrizoate, meglumine diatrizoate and a wetting agent, polysorbate 80. It is a hyperosmolar water-soluble contrast medium, which has been used for diagnostic purposes. It has been found to be effective in recovery of bowel transit in malignant bowel obstruction in combination with other agents (88).

- A single observational, open-label, prospective study evaluated the use of AM as a rescue treatment in constipation unresponsive to conventional laxative therapy in 99 patients with advanced cancer. This preliminary study suggests that AM is effective and well tolerated, inducing a bowel motion within 24 hours of administration in 44% of patients (89). Further controlled studies are needed. **Level 3**

Recommendation 4 Pharmacological management

The following are responsible for implementation of recommendation 4

CEO/General Managers/Line managers are responsible for ensuring all healthcare staff are aware of this guideline. All healthcare staff and in particular physicians, surgeons, general practitioners, nurses, pharmacists and dietitians, caring for patients with palliative care needs are responsible for implementation.

Key finding a. Pharmacological agents are a necessary component of the management of established constipation in life-limiting illness. b. There is a lack of evidence to support the use of any one laxative over another.	
Key recommendations	
D	**4.1** The choice of laxative should be guided by individual patient preference and circumstances.
D	**4.2** Where there is no evidence to differentiate between medications in terms of efficacy, tolerability and side effect profile, and where clinical expertise allows, the medication with lowest cost base should be used.
D	**4.3** The combination of a softening and a stimulating laxative is often required. Optimisation of a single laxative is recommended prior to the addition of a second agent. The ratio of softener: stimulant should be guided by faecal consistency.
D	**4.4** The laxative dose should be titrated daily or alternate days according to response.

Prescribers notice: Healthcare staff should use clinical judgement and knowledge in prescribing and give due regard to individual circumstances presented by each patient and available resources.

2.7 Opioid induced constipation

2.7.1 *Definition and incidence*

Pain occurs in 50-90% of patients with advanced cancer and approximately 65% of patients suffering from terminal non-malignant disease (90). Opioids remain the mainstay in the treatment of cancer pain and are increasingly used in the management of chronic non-cancer pain. Evidence-based recommendations on the management of cancer pain can be found in the National Clinical Guideline

No 9, Pharmacological Management of Cancer Pain in Adults (www.hse.ie/palliativecareprogramme or www.health.gov.ie/patient-safety/NCEC).

The therapeutic benefits of opioids are compromised by adverse effects, which include opioid-induced bowel dysfunction (OIBD). This comprises a constellation of gastrointestinal (GI) symptoms and signs such as gastro-oesophageal reflux, abdominal distension, incomplete evacuation, straining and constipation (91, 92). Opioid-induced constipation (OIC) is the most common clinical aspect of OIBD, affecting up to 90% of patients on opioid therapy (93). Uncontrolled symptoms of OIBD can have a profound effect on quality of life, rivalling the distress caused by pain (45). Yet these symptoms remain underappreciated by healthcare professionals (94). Constipation is one of the most common reasons that patients avoid or discontinue opioids, compromising effective analgesia (95). Unlike other side-effects, such as nausea and sedation, patients rarely develop tolerance to opioid-induced constipation (96).

The constipating effect of opioids is predominantly mediated by their action on mu-opioid receptors in the submucosa of the GI tract. Binding of opioids to these receptors reduces GI motility, promotes fluid reabsorption and inhibits fluid secretion into the intestinal lumen causing delayed colonic transit and dry, hard stools (97).

2.7.2 General principles

In the palliative care setting, the use of analgesic medications, despite their side effects, is a necessity for the majority of patients. The WHO recommends preventive measures against constipation for all palliative care patients receiving opioid medications (98). The initiation of a bowel regimen early in the course of opioid therapy is considered to be the standard of care (91,99). Although all opioids are associated with a degree of bowel dysfunction, there is limited evidence that some, including fentanyl and methadone, are less constipating than others. Further prospective studies are required to confirm this. In a single small series (n=4), opioid switching of morphine to methadone resulted in a reduction in constipation(100). Changing the route of opioid administration to transdermal fentanyl or buprenorphine has been shown to have better GI tolerability (101-103) however, contradictory data also exists (104). Whether the decrease in laxative usage is clinically significant, and whether the decrease relates to the opioid type or the route of administration needs to be demonstrated.

Level 5

Level 4

Tapentadol, a combined mu-opioid agonist and noradrenaline reuptake inhibitor, has been shown to have a more favourable gastro-intestinal side effect profile due to a reduced level of mu-opioid agonism.

- A double-blinded randomised clinical trial investigating gastro-intestinal tolerability of oxycodone compared to tapentadol in patients with non-malignant joint disease, demonstrated superior outcomes for nausea, vomiting and constipation in the tapentadol arm (105).

Level 1b

The EAPC recommends the following strategies for managing established opioid-induced side effects: reduction of opioid dose, opioid rotation, changing the route of administration and symptomatic management (106).

Level 2a

Currently the most viable option for relieving OIC is symptomatic management. In practice, non-pharmacological strategies are rarely sufficient and most individuals will require aggressive pharmacological management (99).

- Sykes et al, 1996 conducted a volunteer model study comparing laxative use in OIC (n=25). This study concluded that the combination of a stimulant laxative and a stool softener was most likely to maintain bowel function at the lowest dose with the least adverse effects (107). This recommendation was endorsed by the European Consensus Group on Constipation in Palliative Care, 2008 (7). **Level 5**

- Recent evidence in patients with advanced illness and OIC supports the optimisation of a stimulant laxative as first line prior to the addition of a softener or osmotic agent (108,109). There is no evidence to favor the choice of one particular stimulant laxative over another. **Level 2b**

Maximal conventional laxative therapy may only provide partial benefit, as the underlying opioid-receptor mediated mechanism is not addressed. Evidence suggests that of those receiving standard treatments, over half will remain dissatisfied with the outcome (110). If OIC has not responded to standard laxative treatment, the use of opioid receptor antagonists may be considered.

2.7.3 Opioid receptor antagonists

Initial attempts to block opioid-induced adverse effects led to the development of naloxone.

Efficacy of naloxone in restoring laxation during opioid therapy has been demonstrated in small studies (111-113). When given orally, immediate release naloxone undergoes extensive first-pass hepatic metabolism leading to negligible systemic bioavailability (<2%) (114). However, because of its ability to cross the blood-brain barrier, despite its low oral bioavailability, reversal of centrally mediated analgesia and precipitation of withdrawal can occur. Its use is therefore limited by a narrow therapeutic index due to the need to titrate peripherally versus centrally active doses (115). A prolonged-release formulation of naloxone may reduce these risks.

2.7.3.1 Prolonged release opioid-receptor agonist/antagonist combination

A combination of prolonged-release naloxone with prolonged-release oxycodone has been licensed in 13 European countries since 2008. This was formulated to counteract OIC development through the antagonistic effect of naloxone on mu-opioid receptors in the bowel wall while maintaining analgesia due to the slow absorption of the formulation and the low bioavailability of naloxone (114).

- Phase III studies have confirmed that the combination of prolonged-release naloxone and oxycodone (OXN PR) provides safe and effective pain relief with superior bowel function over oxycodone alone in cancer and non-cancer patients (116-120). **Level 1b**

- The majority of adverse effects observed in these trials were mild or moderate and consistent with the adverse effect profile of opioid analgesics. The long-term analgesic efficacy has been demonstrated in open-label extension studies in patients with chronic non-cancer pain for up to 52 weeks (121). **Level 1b**

- The optimal ratio of oxycodone to naloxone identified in trials is 2:1 (122). The dose studied in the majority of clinical trials has been limited to a maximum dose of 80/40mg per day. Doses were extended to 120/60mg daily in a randomised controlled trial in cancer patients, without reported loss of analgesia (123). **Level 1b**

- A case report of a cancer patient receiving 240/120mg per day observed declining analgesia at this dose; substitution with the same dose of regular prolonged-release oxycodone resulted in recovery of adequate analgesia (124). Further studies are needed, particularly in cancer patients where the analgesic requirement may be higher. **Level 5**

At present, oxycodone/naloxone preparations are significantly more expensive than standard oxycodone prescribed with a regular laxative. This should be taken into consideration in practice.

2.7.4 Selective peripheral opioid-receptor antagonists

In order to avoid the centrally mediated effects of opioid receptor antagonists, selective peripherally acting agents have been developed. A recent Cochrane review conducted a meta-analysis on mu-opioid receptor antagonists for OIBD. This demonstrated that methylnaltrexone and alvimopan were better than placebo in reversing OIC (125).

2.7.4.1 Methylnaltrexone

Methylnaltrexone bromide is a quaternary N-methyl derivative of the opioid receptor antagonist naltrexone. The addition of a methyl group at the nitrogen ring increases polarity and reduces lipid solubility, thus restricting ability to cross the blood-brain barrier (126, 127).

Subcutaneous methylnaltrexone was initially demonstrated to reverse opioid-induced delays in gastric emptying and oral-caecal transit time and to induce laxation in chronic methadone users with OIC (128). Efficacy and tolerability of methylnaltrexone in patients with advanced illness has subsequently been demonstrated in phase III trials.

- A randomised-controlled trial by Portenoy et al (2008) included 22 patients with advanced illness on chronic opioid therapy. In this dose-ranging study patients received doses of methylnaltrexone between 1 and 20mg. No dose response relationship was observed beyond 5mg. Of those patients who received 5mg or above, almost half had a laxation response within 4 hours (129).

- Similar results were observed in a double blind, randomised placebo-controlled trial by Thomas et al (n=133), in 2008. This demonstrated that 48% of patients had a laxation response within 4 hours of first dosing of methylnaltrexone (0.15 mg/kg) as compared with 15% in the placebo arm. In a three-month open-label extension phase, 82 patients with OIC who did not respond to laxatives received methylnaltrexone as needed for up to 3 months. Mean laxation response rates in the methylnaltrexone group (DB phase, months 1, 2, 3 open-label phase) were 45.3%, 45.5%, 57.7%, and 57.3%, respectively, for patients treated with DB methylnaltrexone and 10.8%, 48.3%, 47.6%, and 52.1%, respectively, for patients treated with DB placebo. Approximately 50% of patients reported improvement in constipation-related distress (130, 131). **Level 1b**

- In 2009, a multi-centre, double-blind, randomised, placebo-controlled trial comparing two dosages (0.15 mg/kg and 0.3 mg/kg) of methylnaltrexone in 154 patients with advanced illness and OIC found a significant reduction in time to laxation in both methylnaltrexone groups compared with placebo ($p<0.0001$; each dose vs. placebo). Approximately half of the methylnaltrexone responders defecated within 30 minutes of administration. Notably, increasing the dose to 0.3 mg/kg did not show improved laxation response and was associated with more abdominal pain (132).

Level 1b

No trial has demonstrated evidence of reduced analgesic efficacy or opioid withdrawal with methylnaltrexone. The most frequent adverse event reported was abdominal cramping, with flatulence, nausea and dizziness at higher doses. As yet no clinical trials directly comparing methylnaltrexone to conventional laxatives have been conducted.

2.7.4.2 Methylnaltrexone dosage and administration

Methylnaltrexone is administered by subcutaneous injection on alternate days. In adults over 18 years, the dose of methylnaltrexone is 8mg for a body weight of 38-61kg and 12mg for a body weight of 62-114kg. Outside this range, a dose of 150mcg/kg on alternate days is recommended. The interval between administrations can be varied, although is not recommended more than once daily(69).

Methylnaltrexone is contraindicated in patients with known or suspected intestinal obstruction or acute abdominal distress. Pharmacokinetic studies have resulted in a recommendation to reduce the methylnaltrexone dose by 50% in patients with severe renal impairment (CrCl <30mls/min). No dose adjustment has been deemed necessary for patients with mild or moderate renal impairment or hepatic impairment (69).

2.7.4.3 Alvimopan

Alvimopan, an orally administered peripherally acting mu-opioid receptor antagonist has been investigated in the management of post-operative ileus and in patients taking opioids for chronic non-cancer pain. In a limited number of studies alvimopan has been shown to counter opioid-induced delays in GI transit. However, further clinical studies in OIC have been suspended due to an apparent increase in cardiovascular events, neoplasms and fractures in patients on alvimopan compared to placebo (125).

2.7.5 Novel pharmacological approaches

2.7.5.1 Prokinetic agents

Serotonin is a major mediator of bowel contractility; 5HT receptors (particularly $5HT_{1P}$ and $5HT_4$ receptors subtypes) are therefore compelling targets for prokinetic agents (99). Metoclopramide, a dopamine antagonist and partial $5HT_4$ agonist, is primarily effective in gastric motility but is believed to have little colonic effect and is not useful as a laxative (133).

Prokinetic agents, cisapride and tegaserod, previously showed promise in the management of constipation, however have demonstrated clinically significant cardiac toxicity limiting their use. Prucalopride is a new selective $5HT_4$ agonist, which has shown promising early results in the relief of OIC in chronic constipation without cardiac toxicity (134). Further studies are awaited. **Level 1b**

2.7.5.2 Erythromycin

Erythromycin acts by stimulating motilin receptors in the upper gastrointestinal tract and has been shown to be effective in diabetic gastroparesis (135). There are no data for its use in palliative care.

2.7.5.3 Selective chloride channel agonist

Lubiprostone is a chloride-channel (CIC-2) agonist, which enhances intestinal secretion and augments intestinal motility. Clinical studies have demonstrated the efficacy and safety of this agent in the management of OIBD in chronic, non-cancer pain (136). The most frequent adverse effect is nausea, which has been reported in up to 30% of patients in clinical studies (137). Its role in the palliative care population is yet to be investigated. **Level 1b**

2.7.6 New developments

A number of peripherally restricted opioid receptor antagonists are currently in development and have shown favourable results in clinical trials. These include Pegylated naloxone (Naloxegol [previously known as NKTR-118]), and other orally administered mu-opioid receptor antagonists including methylnaltrexone (138). **Level 1b**

- Two randomised controlled trials in patients with OIC have demonstrated significantly improved stool frequency with a rapid onset of action with the investigational, oral, peripherally-acting, μ-opioid receptor antagonist Naloxegol (139-141). **Level 1b**

Recommendation 5 Opioid induced constipation

The following are responsible for implementation of recommendation 5:

CEO/General Managers/Line managers are responsible for ensuring healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key finding Constipation is a common and distressing side effect of opioid therapy.	
Key recommendations	
D	**5.1** The development of opioid induced constipation should be anticipated. A bowel regimen should be initiated at the commencement of opioid therapy.
D	**5.2** In the management of opioid induced constipation, optimised monotherapy with a stimulant laxative is essential followed by the addition of a softener if required. The current evidence is too limited to provide evidence-based recommendations for the choice of stimulant laxative and selection should be made on an individual basis.
D	**5.3** Where there is no evidence to differentiate between medications in terms of efficacy, tolerability and side effect profile, and where clinical expertise allows, the medication with lowest cost base should be used.
D	**5.4** The use of opioid receptor antagonists **under specialist guidance** should be considered in patients whose treatment is resistant to conventional laxative therapy.

2.8 Intestinal obstruction

2.8.1 Aetiology and prevalence

Intestinal obstruction is a frequent complication in patients with advanced cancer, especially of gastrointestinal or gynaecological origin. The obstruction may be mechanical or functional, partial or complete, and may occur at one or more sites. The global prevalence is estimated to be 3-15% of cancer patients (142).

2.8.2 Assessment

If clinically suspected, radiological investigation (including PFA and/or computed tomography (CT) scan of abdomen) may be appropriate depending on the goals of care for each individual patient.

2.8.3 Laxative use in bowel obstruction

In the case of partial bowel obstruction, the introduction of a stool softener should be considered. Stimulant laxatives should be avoided due to potential exacerbation of bowel colic. If the obstruction is complete, laxatives should not be used and consideration should be given to specialist referral for either surgical or conservative medical management (7).

Level 5

Full explanation of the medical management of intestinal obstruction is outside the scope of this guideline but health professionals caring for adult palliative care patients should consider specialist referral when intestinal obstruction is diagnosed.

Recommendation 6 Intestinal obstruction

The following are responsible for implementation of recommendation 6:

CEO/General Managers/Line managers are responsible for ensuring healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key findings a. If intestinal obstruction is suspected, this should be evaluated by history, examination and appropriate radiological investigations. b. **Specialist referral for either surgical or medical management should be considered.**	
Key recommendations	
D	**6.1** A stool softener should be considered in partial intestinal obstruction. Stimulant laxatives should be avoided.
D	**6.2** In complete intestinal obstruction, the use of all laxatives should be avoided as even softening laxatives have some peristaltic action.

2.9 Management of constipation in the dying patient

In the last days of life, regardless of the use of laxatives, bowel movements become less frequent as a consequence of proximity to death (143). During this phase, numerous factors lead to reduced bowel transit time. These include deteriorating performance status, impaired oral intake and the use of medications including opioid analgesia and anticholinergic agents (144). **Level 5**

It is important to regularly assess the aims of management at this stage. With deteriorating functional status patients may become less aware of the symptoms of constipation and its management becomes a lower priority in their overall care (7). As a patient's level of consciousness deteriorates, oral laxatives should be discontinued. Rectal intervention is rarely required at this stage. **Level 5**

Recommendation 7 Management of constipation in the dying patient

The following are responsible for implementation of recommendation 7:

CEO/General Managers/Line managers are responsible for ensuring healthcare staff are aware of this guideline. All healthcare staff caring for patients with palliative care needs are responsible for implementation.

Key finding In the last days of life, bowel movements become less frequent as a consequence of proximity to death.	
Key recommendation	
D	**7.** As a patient's level of consciousness deteriorates, oral laxatives should be discontinued. Rectal intervention is rarely required at this stage.

Table 3 Oral laxatives for the treatment of constipation in palliative care
(Adapted from Larkin, 2008 (7))

Prescribers notice: Healthcare staff should use clinical judgement and knowledge in prescribing and give due regard to individual circumstances presented by each patient and available resources.

Category	Examples	Formulation	*Starting dose	Mechanism of action	Onset of action	Common side effects	Contraindications	Volume of liquid required
Bulking agents	Ispaghula	Powder for oral solution	Variable 1-2 sachets daily	Increase in stool bulk and water content, increasing colonic transit time	Initially 24-72h, later 8-24h	Distension, bloating, abdominal pain	May be poorly tolerated in patients unable to tolerate adequate fluid volume, Intestinal obstruction	150 mL daily
Predominantly Softening Laxatives								
Non-digestible sugars	Lactulose (10g/15mL)	Syrup	10-15 mL BD	Increases faecal weight	1-2 days	Flatulence, cramps, abdominal discomfort	Galactosaemia, Intestinal obstruction	15-30 mL daily
Saline laxatives	Magnesium hydroxide BP (415mg/ 5mL)	Syrup	15-30 mL BD	Increases intestinal wall secretion and stimulates peristalsis	12h	Electrolyte and fluid imbalance	Risk of hypermagnesaemia in patients with renal impairment, Intestinal obstruction	30-60 mL daily
Macrogol	Polyethylene glycol	Powder for oral solution	1-3 sachets daily in divided doses	Increases stool water content and stool volume stimulating peristalsis	1-3 days	Abdominal distension and pain, nausea, borborygmi, mild diarrhoea that usually responds to dose reduction	Intestinal perforation or intestinal obstruction, severe gastrointestinal inflammatory conditions (Crohn's, Ulcerative colitis, toxic megacolon)	125 mL per sachet
Surfactants	Docusate sodium	Liquid (50mg/ 5mL) Capsule 100 mg	10mL BD 100 mg BD	Increases water penetration and softens stools	1-3 days	Diarrhoea, nausea, abdominal cramps, or skin rash	Abdominal pain, nausea, vomiting, intestinal obstruction Hereditary problems with fructose intolerance	20 mL daily Water required for ingestion of capsules
Lubricants/ Emollients	Liquid paraffin	Oral Emulsion, BP	5-15 mL BD	Lubricates and softens stools	1-3 days	Anal seepage, perianal irritation, risk of lipoid pneumonia	Abdominal pain, nausea or vomiting, Intestinal obstruction	10-30 mL daily
Predominantly Stimulant Laxatives								
Sennosides	Senna	Syrup: Sennosides 7.5mg/5 mL (240 mL) Tablet: Sennosides (7.5 mg)	15 mL nocte 1-2 tablets nocte	Alters intestinal mucosal permeability and reduces absorption of water from the gut, increases intestinal motility through direct stimulation of the nerve endings in the colonic mucosa	8-12h	Watery diarrhoea, may cause abdominal cramping, electrolyte imbalance, dermatitis	Intestinal obstruction	15-30mL daily Volume required for ingestion of tablets
Sodium Picosulfate	Dulcolax Pico Liquid Dulcolax Perles	Syrup (5mg/5mL) Capsules (2.5mg)	5-10mg nocte 2 capsules BD	Increases intestinal motility through direct stimulation of the nerve endings in the colonic mucosa	6-12h	Abdominal cramps, diarrhoea, electrolyte disturbance	Avoid in active inflammatory bowel disease, severe dehydration, Intestinal obstruction	5-10mL Volume required for ingestion of tablets
Bisacodyl		Tablet (enteric coated): 5 mg	10-20 mg BD	Increases intestinal motility through direct stimulation of the nerve endings in the colonic mucosa	6-12h	Abdominal cramps, diarrhoea, electrolyte disturbance	Intestinal obstruction	Volume required for ingestion of tablets
Combination Softener/Stimulant Laxatives								
Softener and stimulant	Poloxamer and dantron**	Codalax Suspension (200/25) Codalax Forte Suspension (1000/75) Codalax Capsule (200/25) Codalax Forte Capsule (500/35.5)	5-10 mL nocte 5mL nocte 1-2 capsules nocte 1-2 capsules nocte	Acts on nerve endings of myenteric plexus and stimulates muscles of large intestine	6-12h	Temporary pink or red urine and skin discoloration, excoriation of perianal area	Intestinal obstruction	5-10 mL daily 5-10 mL daily Water required for ingestion of capsules Water required for ingestion of capsules

*Always consult the product literature for starting dose recommendations

**Dantron-containing products are due to be discontinued and withdrawn from the market in 2015

Table 4 Rectal laxatives for the treatment of constipation in palliative care
(Adapted from Larkin, 2008 (7))

Prescribers notice: Healthcare staff should use clinical judgement and knowledge in prescribing and give due regard to individual circumstances presented by each patient and available resources.

Category	Examples	*Starting dose	Mechanism of action	Speed of action	Common side effects
Lubricant laxative	Mineral oil enema Vegetable oil enema	60-120 mL	Allows penetration of water into faeces to soften stool	Up to 1h	Local irritation
Osmotic laxative	Glycerin suppository (softening and irritant properties)	1	Increases water in intestinal lumen and faecal weight	15-60 minutes	Local irritation
Stimulant (irritant) laxative	Bisacodyl suppository	1-2 (10 mg per suppository)	Increases intestinal motility, directly stimulates the nerve endings in the colonic mucosa	15-60 minutes (must come into contact with the bowel wall to be effective)	Abdominal cramping and pain, diarrhoea, local irritation
Saline laxative	Phosphate enema (Microlax-proprietary) Each mL contains: sodium citrate, sodium lauryl sulfoacetate, glycerin, sorbitol, sorbic acid, purified water in a disposable plastic tube fitted with a flexible enema tip about 5 cm long. Tubes of 5 mL	1 1	Increases intestinal water secretion and stimulates peristalsis	15-30 minutes 30-60 minutes	Local irritation (phosphate enema) Excessive use may cause diarrhoea and fluid loss

*Always consult the product literature for starting dose recommendations

Table 5 Cost of oral laxatives in Republic of Ireland and Northern Ireland

Drug	Brands available	GMS/DPS	Cost per dosage unit (€)	Cost per dosage unit (£)
Co-danthramer**	Codalax capsules Poloxamer '188' 200mg +Dantron 25mg per capsule	Yes	€14.40/60	£12.86/60
	Codalax Forte Capsules Poloxamer '188' 500mg +Dantron 35.5mg per capsule	Yes	€15.65/60	£15.55/60
	Codalax Suspension Poloxamer '188' 200mg +Dantron 25mg per 5mls	Yes	€26.09/300mL	£11.27/300mL
	Codalax Forte Suspension Poloxamer '188' 1g +Dantron 75mg per 5mls	Yes	€7.80/300mL	£30.13/300mL
Polyethylene Glycol	Movicol 13g	Yes	€7.07/20 €10.62/30	£4.45/20 £6.68/30 £11.13/50
	Molaxole	Yes	€7.02/20 €8.91/30	N/A
	Laxido	Yes	€8.29/30	N/A
Lactulose	Duphalac 3.335g/5ml	Yes	€1.23/300mL €3.72/1000mL	N/A
	Laxose 3.335g/5ml	Yes	€1.20/300mL €3.64/500mL €4.07/1000mL	£2.04/300mL £2.28/500mL
Docusate Sodium	Dioctyl	No	€24.83/100	£6.40/100
Magnesium Hydroxide	Milk of Magnesia	No	€3.00/100mL €5.63/200mL	N/A
Senna	Senokot tablets (7.5mg)	No	€2.62/20 €5.46/60	£1.44/60
	Senokot 15mg/10mg	No	€7.26/100 €18.77/500mL €5.19/150mL	£2.69/500mL
Bisacodyl	Bisacodyl 5mg tablets	No	€1.21/10 €2.01/40 €3.89/50 €4.64/60	£3.27/100
Sodium Picosulfate	Dulcolax Pico Perles	No	€4.28/50	N/A
	Dulcolax Pico Liquid 5mg/5ml	No	€2.76/100mL €7.78/300mL	£1.89/100mL
Ispaghula Husk	Fybogel Citrus	Yes	€2.68/30 €5.35/60	£1.84/30
	Fybogel Mebeverine (Mebeverine 135mg + Ispaghula husk 3.5g)	Yes	€3.15/10 €18.93/60	N/A
Methylcellulose	Celevac 500mg	No	€3.58/112	£3.22/112

****Dantron-containing products are due to be discontinued and withdrawn from the market in 2015**

Table 6 Cost of rectal laxatives in Ireland

Drug	Brands available	GMS/DPS	Unit Cost (€)	Unit Cost (£)
Bisacodyl	Dulcolax 5mg Dulcolax 10mg	No No	€1.49/5 (5mg) €2.75/12 (10mg) €5.10/20 (10mg)	£1.15/12 (10mg)
	Toilax	No	€3.73/5 €29.76/50	N/A
Arachis Oil Enema	Arachis Oil Enema	Unlicensed	N/A	£7.98/130mL
Docusate Enema	Norgalax Micro-enema	Unlicensed	€14.47	57p/10g unit
Glycerine (Glycerol)	Babylax* (Enema) Glycerin Suppositories	No	€8.95/3	£1.14/(1g) £1.16 (2g) £1.40 (4g)
Sodium Citrate	Microlax* (Enema)	No	€29.15/50	41p/5mL (single dose pack)
	Micolette* (Enema)	No	€8/12	42p/5mL (single dose pack)

*Contains other active ingredients

3 National Clinical Guideline development process

3.1 Aim of National Clinical Guideline

The purpose of this guideline is to provide recommendations based on best available evidence for the management of constipation in adult patients with life-limiting conditions in receipt of generalist or specialist palliative care across all healthcare settings.

The recommendations of this document should not be used in isolation without giving due consideration to individual clinical circumstances and patient preference.

This guideline aims to benefit adult patients with a life-limiting condition who are suffering from constipation. The expected outcome of the recommendations made in this guideline is to prevent or reduce constipation and improve quality of life.

3.2 Methodology and literature review

The recommendations of this guideline were developed according to the principles of the ADAPTE process for guideline adaptation and a summary of the process is given in the full guideline.

A number of international guidelines on the management of constipation in advanced illness were identified through a formal systematic literature search facilitated by the HSE library, graded for methodological rigour, and considered for inclusion in the development of this guideline. In order to identify the most rigorously developed recommendations, these eleven documents were assessed and scored by two members of the GDG according to the Appraisal of Guidelines through Research and Evaluation (AGREE II) tool (39) and the AGREE II scores are presented in Appendix V in the full guideline where there are further details in relation to decisions made by the GDG.

Following assessment with the AGREE II and ADAPTE tools, two high quality guidelines were selected for adaptation.

1. Consensus Recommendations for the Management of Constipation in Patients with Advanced Progressive Illness. The Canadian Consensus Development Group for Constipation in Patients with Advanced Progressive Illness (17).
2. The Management of Constipation in Palliative Care: Clinical Practice Recommendations. The European Consensus Group on Constipation in Palliative Care (7).

These guidelines were deemed as being of an acceptable standard directly to refer to in this adapted guideline. These source guidelines may be directly referenced in this document, without a requirement to cite a primary evidence source.

In parallel with the above process, the GDG identified relevant health questions related to key areas of importance in the management of constipation in patients with life-limiting conditions. These health questions reflected areas to be addressed within the guideline.

Once the two source guidelines were selected, the GDG commenced the process of identifying updated literature addressing the health questions. As the European Consensus Group completed their literature search in 2006, this was considered an appropriate starting point. So the literature search on each of the defined health questions covered the period January 2006 to July 2014. Further details of the methods used and completed processes undertaken are contained in the full version guideline.

So recommendations that are made in this guideline reflect the best evidence from the Canadian Consensus Development Group (17) and the European Consensus Group (7), in conjunction with the updated literature on the derived health questions.

3.3 Financial impact of constipation in adult palliative care patients.

Constipation affects up to 90% of patients with advanced illness (3, 4). In addition to the well-described impact on quality of life, suboptimal treatment may result in a number of serious complications that often necessitate hospitalization (7). Although the burden of constipation is well recognized, the economic impact remains difficult to estimate with a paucity of studies evaluating the cost of constipation on health services and society in general (22). This lack of data is particularly true of constipation in advanced life-limiting illness.

In the development of this guideline, a formal systematic literature search was undertaken to evaluate the economic impact of constipation. Forty eligible studies were identified but only 10 were deemed suitable for inclusion in the qualitative synthesis. The paucity of studies available for inclusion may be attributed to the fact that there is a historic lack of comparative studies evaluating older laxatives, and that few new laxatives have been produced in recent years. Further details in relation to the budget impact analysis for this guideline and how it informed the GDG conclusions are available in the full version of the guideline. The GDG group, however, supported by the HSE Medicine Management Programme did formalize the following 'best practice point'.

Best Practice Point: Pharmacoeconomics
Where there is no evidence of a differential benefit between different medications in terms of efficacy, tolerability or side effect profile, and where clinical expertise allows, the medication with lowest cost base should be used.

3.4 External review

The guideline was reviewed by two international experts. Professor Lukas Radbruch, Chair of Palliative Medicine, University of Bonn; Director of Department of Palliative Medicine, University Hospital Bonn, Director of Palliative Care Centre, Malteser Hospital Bonn/Rhein-Sieg and Associate Professor Max Watson, Consultant in Palliative Medicine/Lecturer in Palliative Care, Northern Ireland Hospice, Belfast provided their expertise without gratuity.

The external reviewers evaluated the draft document and provided commentary at key stages of the process. A thematic summary of their review is presented in Appendix X in the full guideline.

3.5 Procedure for update of National Clinical Guideline

This guideline was published in November 2015 and is due for review in three years. The evidence and recommendations will be reviewed and updated every three years by the National Clinical Programme for Palliative Care with support and will be reported through the National Clinical Programme for Palliative Care website. These are formal evidence searches on the clinical questions and the recommendations that follow a standardised methodology. In doing this, it is anticipated that the guideline will be maintained in terms of currency and relevance. Any updates will be submitted to NCEC for review and inclusion in the National Clinical Guideline.

3.6 Implementation of National Clinical Guideline

The National Clinical Programme for Palliative Care Working Group and the GDG will take responsibility for guideline dissemination through the following actions:

- The guideline document summary will be published on the National Clinical Programme for Palliative Care website and other forums such as the RCPI and NCEC websites.
- Local and national media will be used to publicise both the development process and the availability of the guidelines.
- Professional journals will be used to inform about the guideline development and to promote the completed guideline.
- Communication links developed by the HSE, specialist palliative care service providers and specialty societies, service user groups, and universities will be used to promote guideline dissemination and utilisation in all areas. This encompasses hospitals, hospices, community palliative care services, GPs and charitable foundations.
- The educational processes of relevant colleges, professional organisations, healthcare providers and consumer groups, (including conferences, workshops and Continuing Professional Development activities) will be used to promote guideline dissemination and utilisation.

Potential users and clinical leaders have been involved throughout the guideline development and consultation process, ensuring community ownership of the guideline. It is recognised that there is significant variation in multidisciplinary team structure and responsibilities between care settings. However, the recommendations are deemed relevant for implementation in all healthcare settings. A favourable implementation climate has been created through the work of the National Clinical Programme for Palliative Care to date.

Stakeholder advisory groups have been established for medical, nursing and allied health professional groups, and members are actively engaged in supporting Clinical Programme activities. Communication pathways exist between the Clinical Programme and the stakeholder advisory groups that will allow for regular communication with staff throughout the process and trouble-shooting of any possible implementation problems.

- A number of implementation tools have been developed and will be made available on the National Clinical Programme for Palliative Care and NCEC websites.
- Audit of important components will be promoted and encouraged, with feedback of the results, to highlight successes as well as challenges in their full implementation.
- Development of an online learning module would support implementation and is planned in collaboration with the AIIHPC.
- Regulators and education providers should give consideration to the education requirements highlighted by the guideline recommendations. Current curricula should be reviewed to incorporate these requirements.

3.7 Roles and responsibilities

It is the role of healthcare line managers (36) to ensure that relevant personnel are aware of this guideline. It is also the role of line managers to ensure that training is available for staff where necessary to ensure that staff possess an appropriate level of palliative care competence and knowledge, as outlined in the Palliative Care Competence Framework of 2014, to put these guidelines into practice (37).

Each healthcare provider is accountable for their own practice and answerable for decisions that he or she makes. Individuals should be prepared to make explicit the rationale for their decisions, and justify them in the context of legislation, evidence-based practice, professional and ethical conduct. All healthcare staff providing generalist and specialist palliative care in hospital, hospice and community-based settings should:

- comply with this National Clinical Guideline and related policies, procedures and protocols
- adhere to their code of conduct and scope of practice guidelines as appropriate to their role and responsibilities
- maintain competence in the management of constipation in adult palliative care patients
- in using this guideline be aware of the role of appropriate delegation and referral to specialists when necessary.

3.8 Audit criteria

To ensure that this National Clinical Guideline positively impacts on patient care, it is important that implementation is audited. Audit is recommended to support continuous quality improvement in relation to the implementation of the National Clinical Guideline (see Table 1). A number of Excel-based resources have been developed to assist in audit activities:

- Baseline assessment tool
- Audit tool

and these tools may be found on the National Clinical Programme for Palliative Care website and the NCEC website.

Table 1 Suggested recommendations for audit

Recommendation	Number
Assessment	
A thorough history and physical examination are recommended as essential components of the assessment process.	**1.1**
A digital rectal examination (DRE) should be considered to exclude faecal impaction if it has been more than 3 days since the last bowel movement or if the patient complains of incomplete evacuation (following appropriate DRE training).	**1.3**
A plain film of the abdomen (PFA) is **not** recommended for routine evaluation but may be useful in combination with history and examination in certain patients.	**1.5**
Prevention	
Education on the importance of pharmacological and non-drug measures is essential to enable patients and caregivers to take an active role in constipation prevention.	**2.1**
Non-pharmacological Management	
Attention should be paid to the provision of optimised toileting while ensuring adequate privacy and dignity for all patients.	**3.1**
Consideration should be given to lifestyle modification including the adjustment of diet and activity levels within a patient's limitations.	**3.2**
Pharmacological Management	
The combination of a softening and a stimulating laxative is often required. Optimisation of a single laxative is recommended prior to the addition of a second agent.	**4.3**
The laxative dose should be titrated daily or alternate days according to response.	**4.4**
Opioid Induced Constipation	
The development of opioid induced constipation should be anticipated. A bowel regimen should be initiated at the commencement of opioid therapy.	**5.1**
In the management of opioid induced constipation, optimised monotherapy with a stimulant laxative is essential followed by the addition of a softener if required. The current evidence is too limited to provide evidence-based recommendations for the choice of stimulant laxative and selection should be made on an individual basis.	**5.2**
The use of opioid receptor antagonists under specialist guidance should be considered in patients whose treatment is resistant to conventional laxative therapy.	**5.4**
Intestinal Obstruction	
A stool softener should be considered in partial intestinal obstruction. Stimulant laxatives should be avoided.	**6.1**
In complete intestinal obstruction, the use of all laxatives should be avoided as even softening laxatives have some peristaltic action.	**6.2**

Appendix 1: Guideline Development Group membership

The following lists the GDG members who contributed to the drafting and amending of the guideline.

- **Dr Brenda O'Connor:** Chairperson, Clinical Lecturer and Research Fellow in PalliativeMedicine, Our Lady's Hospice and Care Services, Harold's Cross, Dublin.
  Conflicts of Interest: nothing to declare

- **Dr Jodie Battley:** Specialist Registrar in Palliative Medicine, Royal College of Physicians of Ireland
  Conflicts of Interest: nothing to declare

- **Ms Louise Duddy:** Clinical Nurse Specialist in Palliative Care, Donegal Homecare Team, Letterkenny, Donegal
  Conflicts of Interest: nothing to declare

- **Dr Karen Ryan**, National Lead of the National Clinical Programme for Palliative Care, HSE/ RCPI & Consultant in Palliative Medicine, St Francis Hospice, Dublin.
  Conflicts of Interest: nothing to declare

- **Professor Philip Larkin**, Professor of Palliative Care, School of Nursing, Midwifery and Health Systems, University College Dublin. (Mentor)
  Conflicts of Interest: Professor Philip Larkin is a primary author in the recommendations published by the European Consensus Group on Constipation in Palliative Care in 2008 (7), which was supported by an unrestricted educational grant from Norgine Pharmaceuticals. Although these recommendations are used as a source for this guideline, Professor Larkin was not directly involved in the AGREE and ADAPTE grading which resulted in its selection.

The All Ireland Institute of Hospice and Palliative Care (AIIHPC) awarded an educational bursary to Dr Brenda O'Connor, Dr Jodie Battley and Ms Louise Duddy to develop the guideline. The AIIHPC had no editorial influence on the content of this guideline.

Guideline Steering Group
A larger group, termed the Guideline Steering Group reviewed the draft material and provided commentary at key stages of the process (see Appendix IV in the full guideline). The additional members were:

- Mr Stephen Ward, Clinical Pharmacist for Palliative Care, Northern Ireland Hospice, Belfast
- Ms Heather Weir, Director of Nursing and Patient Services, Northern Ireland Hospice, Belfast

The GDG was supported by (see full guideline for further details):

- Mr Gethin White, Librarian, HSE and Mr Owen Kinsella, Librarian, St. Luke's Hospital, Dublin.
- Ms Breffni Smith, Librarian, Beaumont Hospital and Ms Laura Rooney Ferris, Librarian, Irish Hospice Foundation.
- Mr Brendan Leen and his colleagues in the HSE Library.
- Mr Brian Lee, Programme Manager, National Clinical Programme for Palliative Care, replaced by Ms Sinéad Fitzpatrick in December 2013.
- Mr Louis Lavelle, Programme Co-ordinator, Clinical Care, RCPI.

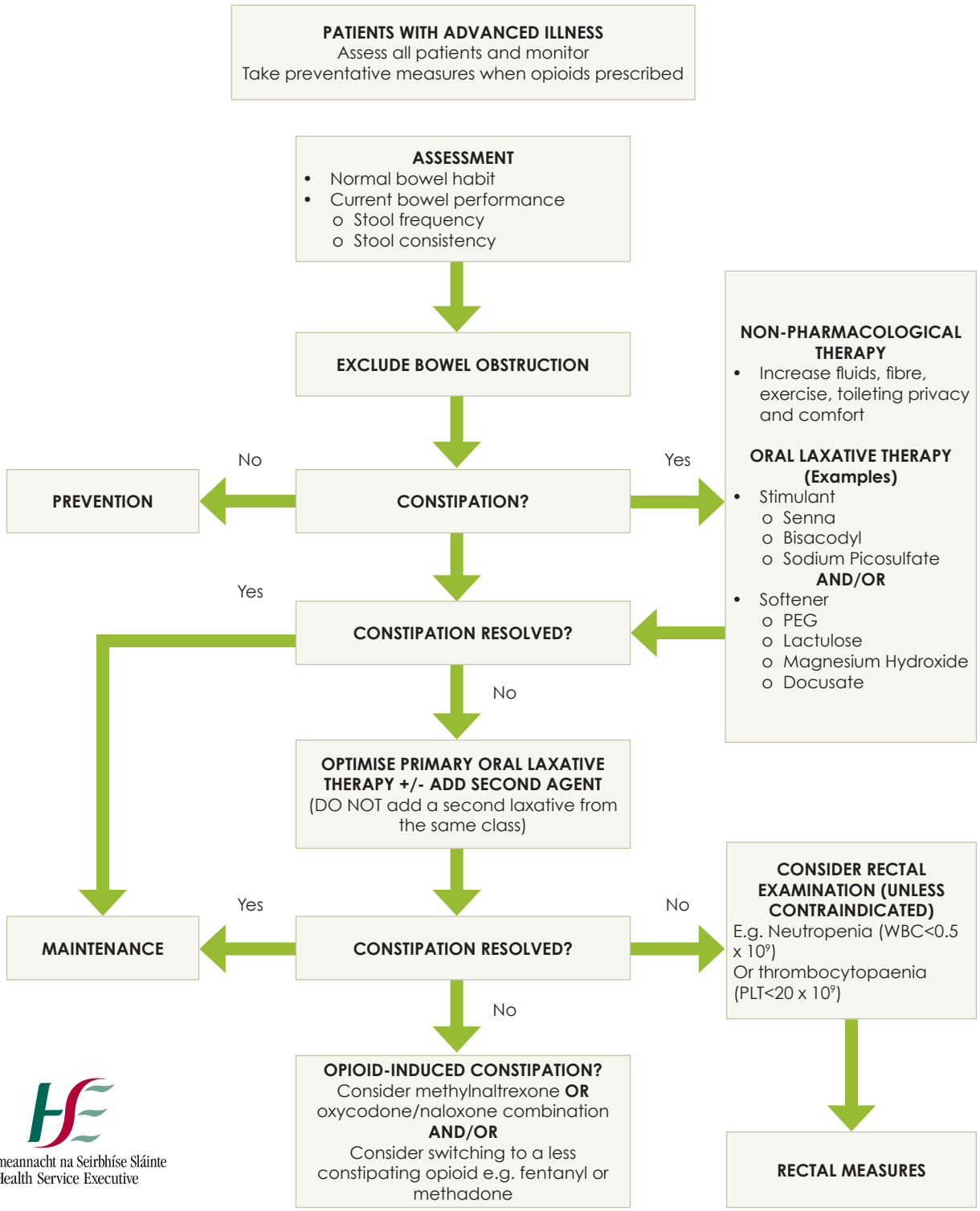
Appendix 2: Resources and tools to assist in implementation of National Clinical Guidelines

The following documents and resources are available at www.hse.ie/palliativecareprogramme and numbers 1, 2, 3, 4 and 5 are also available from www.health.gov.ie/patient-safety/NCEC

1. National Clinical Guideline No 10 Management of Constipation in Adult Patients Receiving Palliative Care Summary of Key Recommendations
2. National Clinical Guideline No 10 Management of Constipation in Adult Patients Receiving Palliative Care Guideline Audit Tool
3. National Clinical Guideline No 10 Management of Constipation in Adult Patients Receiving Palliative Care Guideline Audit Tool Guidance
4. *Relief from Constipation* Patient Information Leaflet
5. National Clinical Guideline No 9 Pharmacological Management of Cancer Pain in Adults
6. Palliative Care Competence Framework (37)
7. Glossary of terms (1)
8. Role Delineation Framework (41)

Appendix 3: Constipation management algorithm

Figure 6 Constipation Management Algorithm
(Adapted from Librach (2010)(17))



Appendix 4: Glossary of terms and abbreviations

Table 12 Abbreviations as per the Full Report

AGREE	Appraisal of Guidelines for Research & Evaluation
AIIHPC	All Ireland Institute for Hospice & Palliative Care
BD	Twice Daily
BFI	Bowel Function Index
BSFS	Bristol Stool Form Scale
CAS	Constipation Assessment Scale
CIC-2	Chloride-Channel
CINAHL	Cumulative Index of Nursing and Allied Health Literature
CrCL	Creatinine Clearance
CT	Computed Tomography
DIOS	Distal Intestinal Obstruction Syndrome
DRE	Digital Rectal Examination
EAPC	European Association for Palliative Care
5HT Receptors	5-Hydroxytryptamine Receptors
GI	Gastrointestinal
HIQA	Health Information and Quality Authority
HSE	Health Service Executive
Kg	Kilogram
MBO	Malignant Bowel Obstruction
MDT	Multidisciplinary Team
Mcg	Microgram
Mg	Milligram
ML	Millilitres
N/A	Not Applicable
NCEC	National Clinical Effectiveness Committee
NICE	National Institute for Health and Care Excellence
NKTR-118	Naloxegol
OD	Once Daily
OIBD	Opioid Induced Bowel Dysfunction
OIC	Opioid-Induced Constipation
PEG	Polyethylene Glycol
PFA	Plain Film of Abdomen
PRN	As Required
PR	Per Rectum
QALY	Quality-Adjusted Life Year
QDS	Four Times Daily
QOL	Quality of Life
RCPI	Royal College of Physicians of Ireland
RCT	Randomised Controlled Trial
SC	Subcutaneous
UK	United Kingdom
VBPS	Victoria Bowel Performance Scale
WHO	World Health Organisation

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