**Critical Care Guideline for Prevention and Treatment of Constipation**

**Introduction**
This guideline is designed to provide guidance for the Intensive Care Units of BCUHB in treating and preventing constipation in critically ill patients. It is not intended to cover the use of lactulose in patients with acute hepatic impairment, who may need to remain on treatment even in the presence of satisfactory bowel movements.

**Background**
Constipation is a common problem in the critical care patient population, and prevention of continuing constipation may help reduce delay in weaning patients from ventilation which can affect length of stay (LoS) and mortality. Constipation has been frequently defined as failure to pass stool for 72 hours. Definitions around urge to defecate or straining are not relevant to a large percentage of the critically ill population and have not been used here. Laxatives have been shown to be effective and safe in relieving constipation in critically ill patients and to be associated with reduced LoS. Reasons for this increased risk in critical care include immobility, opiate infusions and pre-existing surgical disease.

**Surgical considerations**
Where patients have abdominal surgical pathology the referring team will need to be consulted on continuing use of laxatives. This is particularly important when bowel surgery has recently been performed or may be needed, when bowel obstruction or pseudo-obstruction are present, or an anastamosis has been formed. (Laxative use may form part of the treatment of pseudo-obstruction).

**Classes of laxatives**

**Osmotic**
- Lactulose
- Polyethylene glycol (Macrogol i.e. Movicol, Laxido)
- Magnesium salts

**Stimulants**
- Senna
- Glycerol (glycerine suppositories)
- Docusate
- Bisacodyl
- Neostigmine
- Metoclopramide (prokinetic)

**Bulking Agents**
- Ispaghula (Fybogel)

**Costs**
Costs given, correct at time of writing, are hospital costs for BCUHB, at daily doses suggested below, with bisacodyl and docusate prices for comparison purposes.

<table>
<thead>
<tr>
<th>Laxative</th>
<th>Dose</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactulose</td>
<td>20mls bd</td>
<td>17p</td>
</tr>
<tr>
<td>Senna</td>
<td>10ml (15mg) od</td>
<td>7p</td>
</tr>
<tr>
<td>Laxido</td>
<td>one sachet tds</td>
<td>42p</td>
</tr>
<tr>
<td>Bisacodyl</td>
<td>10mg od</td>
<td>16p</td>
</tr>
<tr>
<td>Docusate</td>
<td>200mg bd</td>
<td>80p</td>
</tr>
</tbody>
</table>

**Evidence**
There is relatively little good quality evidence in this area. Mostafa et al. showed in 2003 that constipation was associated with slower weaning from mechanical ventilation but did not comment on use of specific laxatives. Masri et al., in Annals of thoracic medicine, showed that laxative prophylaxis in critical care patients is successful in preventing constipation and did not demonstrate any complications. Van der Spoel et. al. reported a Randomised Controlled trial.
in Critical Care Medicine in 2007 which assessed lactulose or macrogol against placebo. Both drugs were associated with shorter time to defecation, and reduced time to defecation was associated with shorter LoS. Both lactulose and macrogol were associated with a shorter LoS compared to placebo, although only lactulose reached significance. Macrogol patients had a significantly lower rate of intestinal pseudo-obstruction (1.0% vs. 4.1%). Macrogol also mitigated the effects of morphine administration which otherwise increased time to defecation.

This protocol therefore uses laxatives already in widespread use across BCUHB on the assumption that they are effective in treating or preventing constipation, and aims to extend the benefit of avoiding constipation to critical care patients based on evidence suggesting that this is likely to be beneficial to our patients and highly unlikely to cause harm.

Summary
With the benefits noted above, for patients staying more than 48 hours, there is a case for prescribing 1\textsuperscript{st} line laxative treatment to all new admissions unless they are known to have diarrhoea\* on admission.

\*Exclude diarrhoea due to overflow from constipation.

Pathway: Patients \textbf{without} known or suspected bowel pathology

1. Consider immediate prophylaxis for all patients expected to stay in ICU for more than 48 hours, using lactulose and senna (1\textsuperscript{st} line treatment) where no contraindication exists.
2. All patients should receive 1\textsuperscript{st} line treatment if they have not had a bowel movement within 48 hours. If not already prescribed, start lactulose and senna. Check PR, and if rectum full add glycerine suppositories daily.
3. 2\textsuperscript{nd} line treatment should be commenced if there is no bowel movement after a further 48 hours.
4. 3\textsuperscript{rd} line treatment should be commenced if there is no bowel movement after a further 24 hours.

Pathway: Patients \textbf{with possible/known bowel pathology, or recent surgery}

1. Consult surgical team over decision to commence laxatives
2. If agreed, commence lactulose & senna unless other drugs specifically requested by surgical team
3. Consider escalating to 2\textsuperscript{nd}/3\textsuperscript{rd} line treatments on subsequent days
References

