

Mechanical bowel preparation for elective colorectal surgery

NICE has developed the Cochrane Quality and Productivity topics to help the NHS identify practices that could be significantly reduced or stopped completely, releasing cash and/or resources without negatively affecting the quality of NHS care. Each topic has been derived from a Cochrane systematic review that has concluded that the evidence shows that the practice is harmful or ineffective and should not be used, or that there is insufficient evidence to support widespread use of the practice.

Unless otherwise stated, the information is taken with permission from the Cochrane systematic review.

NICE summary of Cochrane review conclusions

Evidence shows that mechanical bowel preparation is not effective for improving outcomes in patients undergoing elective colorectal surgery and should not be used routinely. It should be reserved for procedures in which intraoperative colonoscopy might be performed or close visualisation of the bowel mucosa is needed.

Stopping or reducing the routine use of mechanical bowel preparation in patients undergoing elective colorectal surgery is likely to lead to improved quality of patient care, improved patient experience and productivity savings. Mechanical bowel preparation should still be used at the surgeon's discretion during procedures to identify pathology or when intraoperative colonoscopy might be performed.

The 'Implications for practice' section of the Cochrane review stated:

'Prophylactic mechanical bowel preparation prior to colonic surgery has not been proven to be valuable for patients. This review suggested that in cases of well-defined location and size of the lesion, the surgeon and his patient are free to choose. Bowel cleansing should be considered when a surgeon needs to identify pathology - for example, a small tumour - or when an intra-operative colonoscopy might be performed.'

Details of Cochrane review

Cochrane review title

Mechanical bowel preparation for elective colorectal surgery (Review)

Citation

[Güenaga KF, Matos D, Wille-Jørgensen P. Mechanical bowel preparation for elective colorectal surgery. Cochrane Database of Systematic Reviews 2011, Issue 9. Art. No.: CD001544. DOI: 10.1002/14651858.CD001544.pub4.](#)

When the review content was assessed as up to date

25 June 2011

Relevant codes	OPCS	ICD10	HRG
	Various codes beginning	n/a	Various codes

Programme budget:

Gastrointestinal surgery

Evidence

Relevance to the NHS

The presence of bowel contents during colorectal surgery has been related to anastomotic leakage, but the belief that mechanical bowel preparation (MBP) is an efficient agent against leakage and infectious complications is based on observational data and expert opinions only. An enema before the rectal surgery to clean the rectum and facilitate the manipulation for the mechanical anastomosis is also used for many surgeons.

The Cochrane review included randomised controlled trials of any MBP versus no MBP. Primary outcomes included anastomosis leakage - both rectal and colonic - and combined figures. Secondary outcomes included mortality, peritonitis, reoperation, wound infection, extra-abdominal complications, and overall surgical site infections.

For the comparison of MBP versus no MBP, the results were: Anastomotic leakage for low anterior resection: 8.8% (38/431) for MBP compared with 10.3% (43/415) for no MBP; Peto odds ratio (OR) 0.88 [0.55, 1.40]. Anastomotic leakage for colonic surgery: 3.0% (47/1559) for MBP, compared with 3.5% (56/1588) for no MBP; Peto OR 0.85 [0.58, 1.26]. Overall anastomotic leakage: 4.4% (101/2275) for MBP, compared with 4.5% (103/2258) for no MBP; Peto OR 0.99 [0.74, 1.31]. Wound infection: 9.6% (223/2305) for MBP, compared with 8.5% (196/2290) for no MBP; Peto OR 1.16 [0.95, 1.42].

Sensitivity analyses did not produce any differences in overall results.

For the comparison of MBP versus rectal enema, the results were: Anastomotic leakage after rectal surgery: 7.4% (8/107) of Group A, compared with 7.9% (7/88) of Group B; Peto OR 0.93 [0.34, 2.52]. Anastomotic leakage after colonic surgery: 4.0% (11/269) of Group A, compared with 2.0% (6/299) of Group B; Peto OR 2.15 [0.79, 5.84]. Overall anastomotic leakage: 4.4% (27/601) of Group A, compared with 3.4% (21/609) of Group B; Peto OR 1.32 [0.74, 2.36]. Wound infection: 9.9% (60/601) of Group A, compared with 8.0% (49/609) of Group B; Peto OR 1.26 [0.85, 1.88].

Despite the inclusion of more studies with a total of 5805 participants, there is no statistically significant evidence that patients benefit from mechanical bowel preparation, nor the use of rectal enemas. In colonic surgery the bowel cleansing can be safely omitted without a higher rate of complications. The few studies focused in rectal surgery suggested that mechanical bowel preparation could be used selectively, even though no significant effect was found. Further research on patients submitted for elective rectal surgery, below the peritoneal verge, in whom bowel continuity is restored, and studies with patients submitted to laparoscopic surgeries are still warranted.

Relevant NICE guidance and products

[CG74: Surgical site infections: prevention and treatment](#) (2008, updated 2017) contains the Do Not Do recommendation 'Do not use mechanical bowel preparation routinely to reduce the risk of surgical site infection'.

Other accredited guidance and products

[Scottish Intercollegiate Guidelines Network \(2016\) Guideline 126: Diagnosis and management](#)

Cochrane Quality and Productivity topics

[of colorectal cancer](#)

Potential productivity savings

Estimate of current NHS use

Current NICE guidance states that mechanical bowel preparation should not be used routinely. The Cochrane review, although recommending mechanical bowel preparation should be abandoned for elective colorectal surgery, recognised that there are times when it should be considered, for example when the surgeon needs to identify a pathology. There is no information on the number of colorectal surgery involving mechanical bowel preparation in the NHS.

Level of productivity savings anticipated

The cost of bowel cleaning preparation per patient ranges from £3.25 to £18.92 (2 sachets citrafleet £3.25, 2 sachets picolax £3.39, 90ml fleet phospho soda £4.79, 4 sachets Klean-prep £8.23 and 10 sachets citramag £18.92,). Drug costs are based on the [Dictionary of Medicines and Devices Browser Portal](#).

Type of saving

Savings are likely to be cash releasing.

Any costs needed to achieve the savings

There is unlikely to be a cost barrier to change, although surgical practice has been noted as slow to change in this area.

Other information

The savings would benefit provider trusts.

Potential impact on quality of NHS care

Impact on clinical quality

Not expected to affect outcomes significantly.

Impact on patient safety

A reduction in unnecessary invasive procedures may improve safety to a slight extent, although this has not been proven in this case.

Impact on patient and carer experience

A reduction in unnecessary invasive procedures should improve the patient and carer experience.

Likely ease of implementation

Time taken to implement

Can be achieved in the medium term: 3 months to 1 year.

Healthcare sectors affected

Affects one team or department or team.

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Stakeholder support

Likely to receive good buy-in from most key influencers although some individuals may be slow to change due to long-held practices.

References

[Dictionary of Medicines and Devices Browser Portal](#)

[National Institute for Health and Care Excellence \(2008; updated 2017\) CG74: Surgical site infections: prevention and treatment](#)

[Scottish Intercollegiate Guidelines Network \(2016\) Guideline 126: Diagnosis and management of colorectal cancer](#)