

It brings a tear to the eye...

Post-repair management and follow-up of women sustaining third- and fourth-degree perineal tears at Waikato Hospital



WAIKATO HOSPITAL

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Introduction

Vaginal delivery causes considerable trauma to the perineum, with an estimated 85% of women who deliver vaginally sustaining a tear, of whom up to 70% require sutures (1). Perineal tears are classified as follows (1):

Grade	Definition
1	Injury to the skin only
2	Injury to the perineum involving perineal muscles but not involving the anal sphincter
3	Injury to the perineum involving the anal sphincter complex 3a: Less than 50% of external anal sphincter thickness torn 3b: More than 50% of external anal sphincter thickness torn 3c: Internal anal sphincter torn
4	Injury to perineum involving the anal sphincter complex and anal epithelium

Traumatic injury of the anal sphincter sustained during childbirth can have a significant impact on women in terms of short-term morbidity and long-term quality of life (2). In the short term, there is risk of infection and wound dehiscence (3). Long-term sequelae include faecal and urinary incontinence, and sexual dysfunction (2). Incontinence of faeces affects 2 to 6% of primiparous women, and incontinence of either stool or flatus affects between 13 and 25% (4). The number of affected women increases after several perineal lacerations towards 17 to 62% (4). Women often present with symptoms later in life, possibly because of the cumulative effects of multiple deliveries, progressive neuropathy, ageing and the menopause overcoming the ability to compensate for perineal insufficiency (4).

Incontinence of stool, flatus, and sexual dysfunction are highly sensitive issues, and many women will not present due to shyness or feelings of shame. They may not realize that their symptoms are not the normal outcome of childbirth.

Anecdotally, there have recently been a number of women treated at Waikato Hospital for third and fourth degree tears. Canterbury DHB has a protocol for management of third and fourth degree perineal tears (5), and both Auckland DHB and Canterbury DHB run specific clinics for follow-up of women who sustain perineal tears. Waikato DHB has neither a protocol nor a perineal tear clinic. Discussion of the correct management of these women is therefore both topical and relevant.

Comprehensive management of perineal tears is a very broad topic. Because women presenting for tear repairs may not have sustained the tear at Waikato Hospital, having been transported from another location, discussion of risk factors and preventative strategies is of limited relevance. Consequently, this audit is targeted specifically to post-repair management and follow-up of the affected population.

Management of perineal tears is a topic that has been covered in previous audits at Waikato Hospital, but no changes appear to have been implemented. Therefore the aim of this audit is not to re-audit the same area after implementation of change, but to investigate whether the problem still exists (or if it has somehow spontaneously resolved), and to recommend changes to practice where appropriate.

This audit uses the quality cycle devised by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) (6). Of the seven stages, this audit addresses stage 1-4 (from identifying an area for improvement through to developing an action plan).



The quality cycle

Step One: Identify an area for improvement

Question: Are women who sustain third- or fourth-degree perineal tears during labour receiving post-repair management and follow-up that is consistent with best practice?

There is currently no protocol for management of third- and fourth-degree perineal tears at Waikato Hospital. This audit aims to determine how closely the business-as-usual post-operative management of women with tears adheres to best practice as defined by the Royal College of Obstetricians and Gynaecologists (RCOG) (3).

Step Two: Develop standards

The Royal College of Obstetricians and Gynaecologists Green-top Guideline for the management of third- and fourth-degree perineal tears provides recommendations for the post-repair management and follow-up of tears and is used as the basis for standards for this audit.

Standard One

Criterion: All women who receive obstetric and anal sphincter repair will receive broad-spectrum antibiotics intra-operatively, and as a post-operative course for at least 5 days to reduce the incidence of postoperative infections and wound dehiscence.

Target: 100%

Exceptions: Allergy or other contraindication to all appropriate antibiotics.

Standard Two

Criterion: All women who receive obstetric and anal sphincter repair will receive laxatives for at least 5 days post-repair to reduce the incidence of postoperative wound dehiscence.

Target: 100%

Exceptions: Allergy or other contraindication to all appropriate laxatives.

Standard Three

Criterion: All women will be offered physiotherapy and pelvic floor exercises for 6-12 weeks after obstetric anal sphincter repair.

Target: 100%

Exceptions: None.

Standard Four

Criterion: All women who have had obstetric anal sphincter repair will be reviewed 6-12 weeks postpartum by a consultant obstetrician and gynaecologist.

Target: 100%

Exceptions: Women from out-of-area (e.g. overseas tourists, etc.).

Step Three: Confirm opportunity for improvement

Data collection methods

The Clinical Audit Support Unit (CASU) provided a list from Enterprise Reporting of women who had sustained third- and fourth-degree tears during the six month period between 1/8/2010-31/1/2011, based on a search on the appropriate ICD codes (O702 and O703). This yielded a list of 30 women. Two of these women had incomplete notes and only outpatient appointment information was available for them. They have therefore been excluded from the analysis, giving a total population of 28 women included in the audit. It was noted that two of the women were incorrectly coded as having sustained third degree tears when in fact they had fourth degree tears. They were included in the analysis as fourth degree tears and CASU were alerted to the issue.

Hard copies of the clinical records for these women were accessed and reviewed. The information gained came primarily from the following sources in the notes:

Information	Source
Intraoperative antibiotics	Anaesthetic record
Postoperative antibiotics	Operation note, drug chart, continuation notes
Laxatives	Operation note, drug chart, continuation notes
Physiotherapy referral	Operation note, referral form, continuation notes
Follow-up recommendation	Operation note, continuation notes

Additionally, patient outpatient appointments were reviewed in iSoft for both Gynaecological Outpatient Clinic and Women's Health Physiotherapy appointments, to assess whether appointments were actually made and attended.

All data gathered was entered into a Microsoft Excel spreadsheet for analysis.

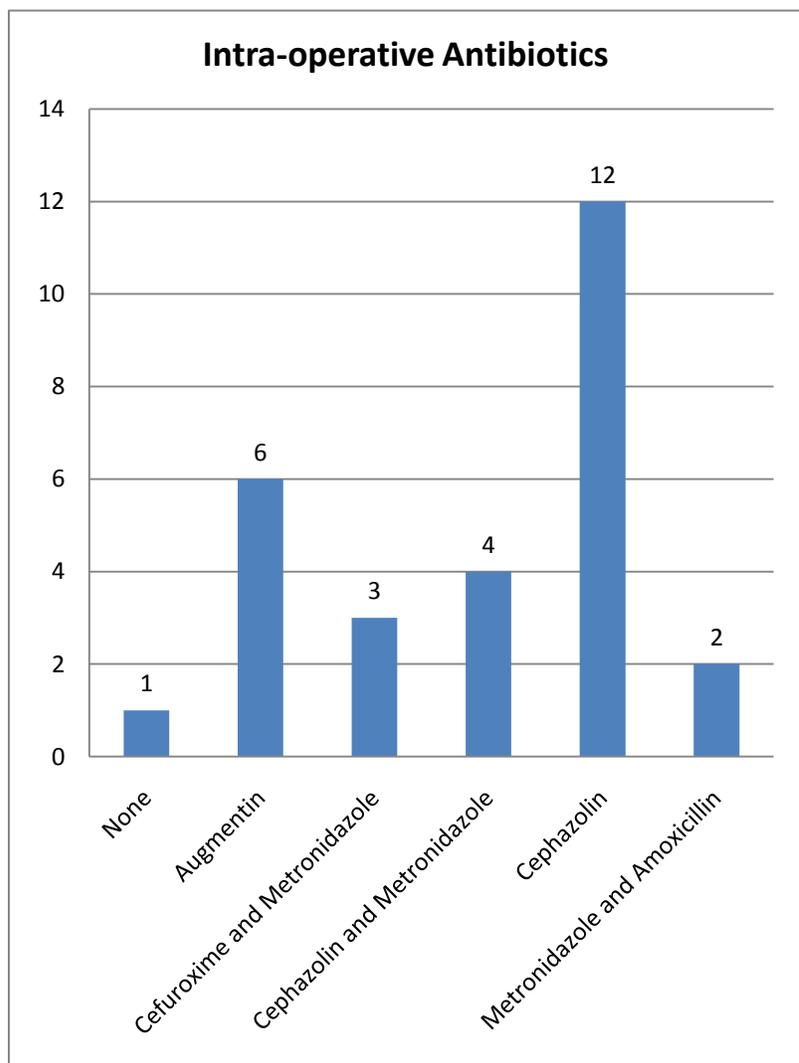
Data analysis and interpretation

Of the 28 women included in the analysis, 26 sustained third degree tears and 2 sustained fourth degree tears.

Standard One: Antibiotics

27 of the 28 women (96%) included in the audit received intra-operative antibiotics, and all of them received a post-operative course of antibiotics. The one woman who did not receive an intra-operative dose, however, did receive IV doses of Augmentin and Metronidazole over 24 hours. A variety of antibiotics were used in differing regimes, but all of the antibiotics used were appropriate options for prophylaxis in management anal sphincter tears.

Canterbury DHB recommends an intraoperative IV dose of 1.2g Augmentin and 3-5 day course of Augmentin, 625mg PO three times daily (5). They also provide guidelines for women who have an allergy to Augmentin (5). However, there is no evidence that the antibiotics recommended are actually the most efficacious in preventing adverse outcomes. A recent Cochrane review concluded that further research into antibiotic prophylaxis in the context of perineal trauma is required, having identified only one small study concerning this premise (7). This study compared a single intravenous dose of a second generation cephalosporin



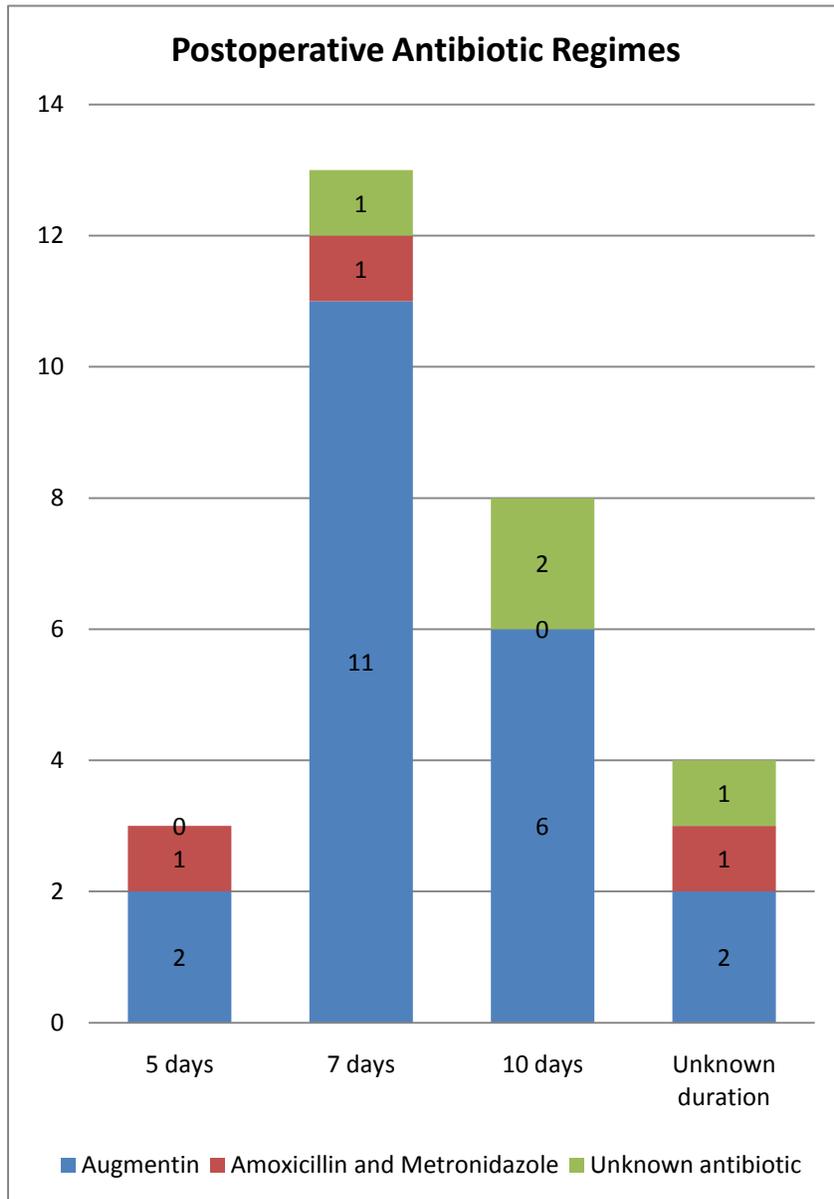
against placebo, and demonstrated that an incidence of perineal wound complication of 8.2% in the treatment group and 24.1% in the control group (8). The rationale for using cephalosporins in this setting is that they have a low risk of allergic reaction and provide broad-spectrum cover against the mixed aerobic and anerobic flora likely to be present in this type of injury (7). The RCOG recommend

the use of intra-operative antibiotics followed by a post-operative course of antibiotics on the basis of the clinical experience of the guideline development group, due to the increased risk of anal incontinence and fistula formation in the event of wound dehiscence (3). They recommend inclusion of Metronidazole for anaerobic cover (3).

100% of women received a post-operative course of antibiotics. Eight women had additional IV doses for 24 hours following their repair (five received IV Augmentin, and courses of Amoxicillin, Augmentin

and Metronidazole, and Metronidazole and Cefuroxime were each given to one woman). All 28 women received courses of oral antibiotics, however it was difficult in some cases to establish what they actually received. 75% of women received a course of Augmentin, 11% received Amoxicillin and Metronidazole, and for the remaining 14%, the antibiotic used was not documented. Treatment duration was between 5-10 days, with most women taking antibiotics for 7 days. This is somewhat longer than the duration of treatment recommended in the Canterbury DBH protocol, which suggests a 3-5 day course only (5). However, there is no research at this point to support any antibiotic regime as being optimal.

The choice of antibiotic used at Waikato Hospital, and duration of treatment, are inconsistent, but in the absence of clear evidence-



based guidance, it's appropriate for doctors to make clinical decisions based on their own experience and preference. While it may be excessive to use a short IV course of antibiotics in women who sustain third- and fourth-degree tears, it's possible there was another reason the eight women here received these (e.g. PPRM). This was not investigated as part of the audit.

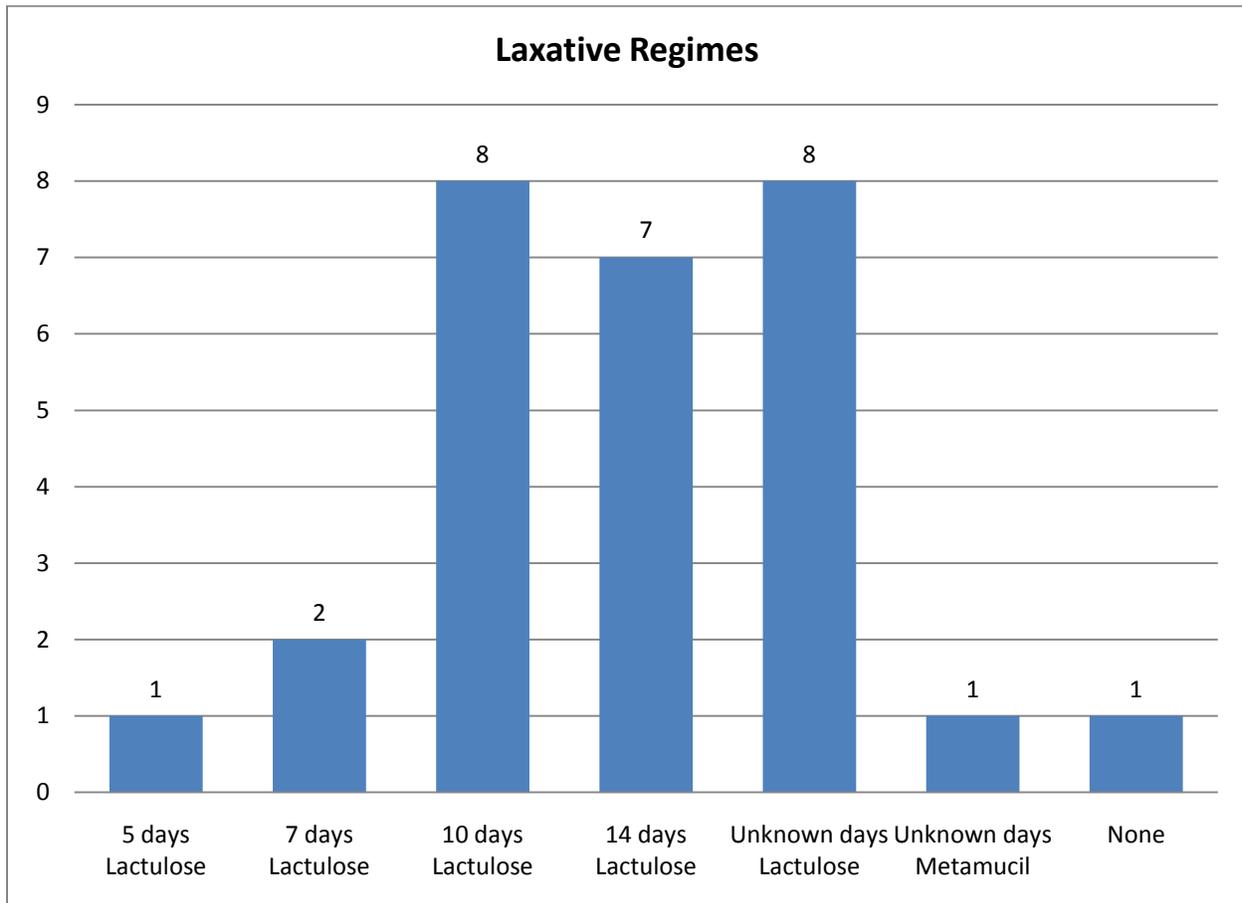
In conclusion, the use of prophylactic antibiotics in women sustaining perineal tears at Waikato Hospital is consistent with best practice as outlined in the literature.

Standard Two: Laxatives

96% of women (27/28) received appropriate laxative treatment after sustaining third-or fourth-degree perineal tears.

The rationale for using laxatives is to avoid mechanical disruption of the repair (3). Laxative use has been shown to result in earlier and less painful first bowel movement, and earlier postnatal discharge after anal sphincter tear repair than bowel confinement using constipating medications (9). RCOG recommends the use of a laxative such as Lactulose and bulking agents such as Fybogel for about 10 days post repair (3). However, research has suggested that there is no additional benefit to be gained from routine prescribing of stool-bulking agents in addition to laxatives, and combination treatment was associated with increased incidence of incontinence in the postnatal period (10). Canterbury DHB recommends the use of Lactulose 10mg PO BD for 10 days, with Kiwicrush and Sodium Docusate tablets as acceptable alternatives (5).

27 of the women included in the audit (96%) received laxatives post-repair. 26 received Lactulose, and one woman received Metamucil because she could not tolerate Lactulose. Duration of treatment was not noted for 9 of the women, and for the rest, the duration varied from 5-14 days.

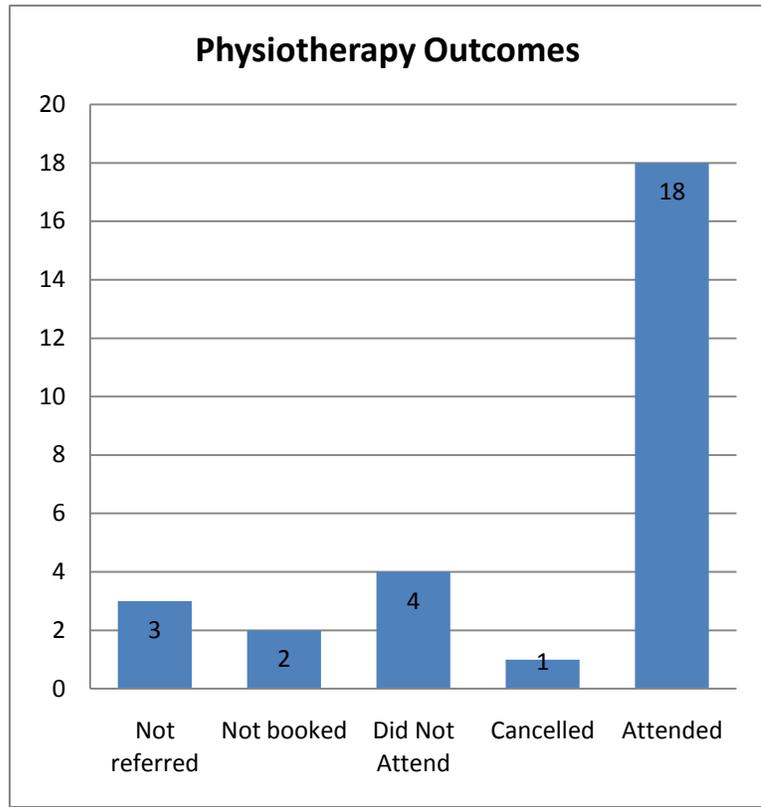


The duration of laxative treatment recommended varied greatly, but as with antibiotic therapy, there is little evidence in the published literature to guide management, and doctors must resort to their own clinical judgment.

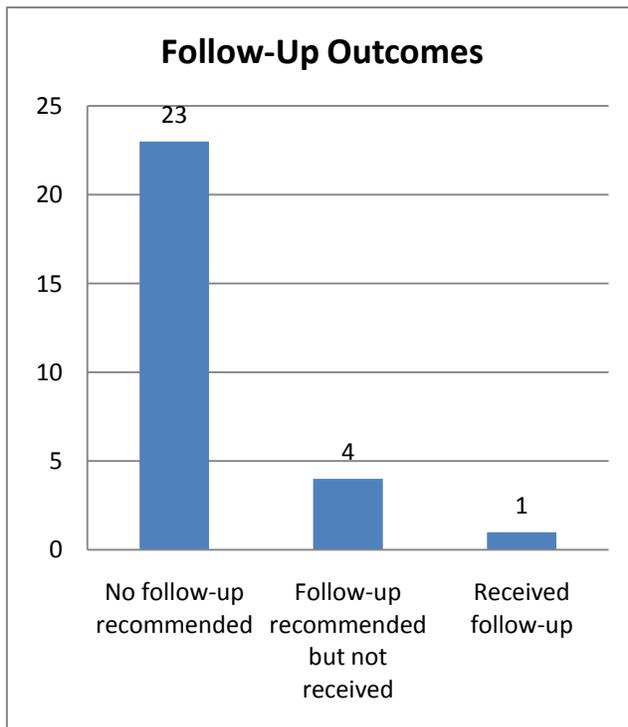
Standard Three: Physiotherapy

25 women, or 89%, received referral to physiotherapy, and of these, two were not booked into appointments. Of the remaining 23 women, four didn't attend the appointments that were made for them, and one cancelled her appointment. In total, 18 women (64%) received physiotherapy (including the two women who sustained fourth-degree tears).

Physiotherapy has an important role in minimizing the impact of anal sphincter injury, particularly in preventing urinary and faecal incontinence (1). There is some difficulty in arranging physiotherapy input and other follow-up for women who are only in hospital for a short time to receive suturing of tears prior to discharge to their birthing centres.



Standard Four: Follow-up



Only five women (18%) were recommended for follow-up at an outpatient gynaecology clinic, at varying intervals (from two weeks to six months), and of these five women, only one (4%) received a clinic appointment, for three months post-partum. Neither of the two women who sustained fourth-degree tears received follow-up. A number of the women's notes stated that they should be referred back if they became symptomatic – these weren't considered as referrals for follow-up.

There are a number of factors that make post-repair follow-up desirable. Women may not present with symptoms of sexual dysfunction or incontinence, either because they assume their symptoms are normal, or because they are too embarrassed, and symptoms may not appear until later in life. It is important to discuss options for delivery of subsequent

pregnancies. While this may be mentioned prior to discharge, it's likely that information given to the woman immediately after their repair will be forgotten in the chaos of becoming a new parent. Finally, it is important to assess the woman to enable referral where appropriate. For example, if a woman has incontinence or pain, they may require endoanal ultrasonography and anorectal manometry, and further follow-up or intervention (3). Some women may require referral to a colorectal surgeon for consideration of secondary sphincter repair (3). It is in this area that there is the greatest scope for improvement.

Step Four: Action plan

Some aspects of post-operative management for third- and fourth-degree tears are currently being managed well, but there is room for improvement in other areas – notably, in terms of follow-up. Improvements may be achieved using the following strategies:

- Developing and implementing a protocol for post-repair management and follow-up of women sustaining third and fourth degree tears in labour. A suggested protocol is included in an appendix to this document.
- Updating the current “Procedural record for perineal and vaginal suturing, manual removal, EUA, ventouse and forceps delivery” form to include the following:
 - An image on which tears can be superimposed.
 - A section for intraoperative antibiotic administration.
 - Tick-box options for further management (e.g. antibiotics, laxatives, analgesia, physiotherapy and gynaecological outpatient clinic follow-up).
- Establish a perineal tear clinic, to review women sustaining third- and fourth-degree tears, 6-12 weeks post-partum.
- Have endoanal ultrasonography and anorectal manometry available at this clinic.
- Re-audit of practice subsequent to protocol implementation.
- A more complete audit cycle, investigating identification of obstetric and anal sphincter injury, surgical techniques used, advice given regarding prognosis and subsequent deliveries, and referral to colorectal services where appropriate.
- Research to determine the most efficacious antibiotic and laxative regimes.
- Research to determine optimal analgesia for women post-tear (e.g. should opioids be avoided due to their constipating effect).

Strengths and Weaknesses

Strengths of this audit include:

- Clearly defined population with clear and specific inclusion criteria.
- Data collected directly from clinical notes.

Weaknesses include:

- Short time period reviewed (six months), and limited population size.
- Data collection dependent on the quality of clinical documentation.
- Long-term sequelae and outcomes not studied.
- Lack of definitive evidence-base on which to establish management guidelines.
- Other reasons for specific treatments were not investigated (i.e. indications for antibiotics).

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