

## Dressing use issues in primary abdominal wounds

McMullan, Christel; Blazeby, Jane; Donovan, Jenny L.; Rooshenas, Leila; Elliott, Daisy; Mathers, Jonathan; Andronis, Lazaros; Blencowe, Natalie; Calvert, Melanie; Coast, Jo; Draycott, Tim; Gooberman-Hill, Rachael; Longman, Robert J; Magill, Laura; Pinkney, Thomas; Reeves, Barnaby; Rogers, Chris A.; Torrance, Andrew; Welton, Nicky J; Woodward, Mark

DOI:

[10.12968/bjon.2019.28.20.S10](https://doi.org/10.12968/bjon.2019.28.20.S10)

License:

Other (please specify with Rights Statement)

*Document Version*

Peer reviewed version

*Citation for published version (Harvard):*

McMullan, C, Blazeby, J, Donovan, JL, Rooshenas, L, Elliott, D, Mathers, J, Andronis, L, Blencowe, N, Calvert, M, Coast, J, Draycott, T, Gooberman-Hill, R, Longman, RJ, Magill, L, Pinkney, T, Reeves, B, Rogers, CA, Torrance, A, Welton, NJ, Woodward, M & Young, T 2019, 'Dressing use issues in primary abdominal wounds: a qualitative study of healthcare professionals' and patients' views', *British Journal of Nursing*, vol. 28, no. 20, pp. S10-S18. <https://doi.org/10.12968/bjon.2019.28.20.S10>

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# British Journal of Nursing

## Clinical and practical issues around dressing use in primary abdominal wounds: a qualitative study of healthcare professionals' and patients' views

--Manuscript Draft--

<b>Manuscript Number:</b>	bjon.2018.0308R1
<b>Full Title:</b>	Clinical and practical issues around dressing use in primary abdominal wounds: a qualitative study of healthcare professionals' and patients' views
<b>Short Title:</b>	
<b>Article Type:</b>	Original research
<b>Keywords:</b>	Feasibility studies; qualitative; wound dressings; exposed wounds; glue-as-a-dressing
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<b>Abstract:</b>	<p>Primary surgical abdominal wounds are usually covered with a dressing. However, little is known about practical issues and costs around these dressings. This study aimed to provide an in-depth description of patients' and healthcare professionals' (HCPs) perspectives on the clinical and practical issues associated with standard and novel dressing (glue-as-a-dressing) use on primary surgical wounds, and to establish whether and how their experience compares with these perspectives. During semi-structured interviews, patients and HCPs discussed their positive experience of glue-as-a-dressing and no dressing around six themes: wound contamination and infection, wound healing, wound care, physical protection afforded by simple dressings, potential psychological impact of an exposed wound, and ability to carry out everyday tasks. Current views on the practice of dressings for primary abdominal wounds are influenced by ingrained clinical practice. These views can be challenged when exposed to novel dressing strategies or as new evidence of the clinical effect of dressing strategies emerges.</p>
<b>Suggested Reviewers:</b>	
<b>Response to Reviewers:</b>	<p>Dear Editor,</p> <p>We would like to thank the reviewers for their constructive comments on our paper. We have responded to Reviewer 1's comment below and we hope it is to their satisfaction. We are happy to provide any further information and clarification, should they need any more.</p>

	<p>Reviewer #1</p> <p>"A picture of the glue-as-a-dressing and the standard dressing side by side would add to this paper but apart from that I can suggest no further changes or additions"</p> <p>Response:</p> <p>We agree that including a picture of a wound covered with glue-as-a-dressing and another one covered with a simple dressing would add to the paper and help the reader. We have included the pictures of page 4 (lines 81-82).</p> <p>Furthermore, in addition to the six co-authors included on this paper, we would like to make sure that the published paper will say "on behalf of the Bluebelle team" which includes all the co-authors mentioned on the title page.</p> <p>Yours sincerely,</p> <p>Christel McMullan</p>
<b>Additional Information:</b>	
<b>Question</b>	<b>Response</b>
Please enter the <b>word count</b> of your manuscript	3623

# Clinical and practical issues around dressing use in primary abdominal wounds: a qualitative study of healthcare professionals' and patients' views

acknowledgment, conflict of interest statement

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## **Abstract**

Primary surgical abdominal wounds are usually covered with a dressing. However, little is known about practical issues and costs around these dressings. This study aimed to provide an in-depth description of patients' and healthcare professionals' (HCPs) perspectives on the clinical and practical issues associated with standard and novel dressing (glue-as-a-dressing) use on primary surgical wounds, and to establish whether and how their experience compares with these perspectives. During semi-structured interviews, patients and HCPs discussed their positive experience of glue-as-a-dressing and no dressing around six themes: wound contamination and infection, wound healing, wound care, physical protection afforded by simple dressings, potential psychological impact of an exposed wound, and ability to carry out everyday tasks. Current views on the practice of dressings for primary abdominal wounds are influenced by ingrained clinical practice. These views can be challenged when exposed to novel dressing strategies or as new evidence of the clinical effect of dressing strategies emerges.

**Keywords:** Feasibility studies; qualitative methods; wound dressings; exposed wounds; glue;

## **Acknowledgements**

The Bluebelle team are grateful to all of the patient and professional research participants who made this study possible.

## **Competing interests**

None declared

## Introduction

Abdominal surgical procedures are amongst the most common operations performed (Eurostat, 2014). At the end of most procedures the wound is closed and the healing process begins (Dumville et al, 2016). The next step, recommended by the National Institute for Health and Care Excellence (NICE), is to cover the wound with a dressing, despite insufficient evidence to demonstrate that dressings reduce surgical site infection (SSI) (NICE, 2008). A recent survey undertaken as part of the Bluebelle feasibility study (NIHR HTA 12/200/04) found that 68% of primary abdominal wounds were covered with simple adhesive dressings, 27.4% of wounds had tissue adhesive applied over closed skin (termed 'glue-as-a-dressing' here), and 3.6% of wounds did not have a dressing (Bluebelle Study Group, 2016a). The remaining 1.0% of wounds were covered with advanced dressings.

Most wound dressing research focuses on the association with risk and cost of SSI (NICE, 2008; Smyth et al, 2008; Borkar & Khubalkar, 2011) despite well-known uncertainties around whether dressings are needed at all (Dumville et al, 2016; Blazeby et al, 2016). In their systematic review of dressing use and SSIs, Dumville et al. (2016) recommended that the views of HCPs and patients should be considered in decisions that concern dressing strategies. Such decisions about the use of post-surgical wound dressings may require the consideration of practical as well as clinical and cost-related issues (Blazeby et al, 2016).

Some existing qualitative research has explored patients' perspectives on specific and specialised wound dressing types used in open and chronic wounds (Kelly et al, 2016; Fagerdhal et al, 2013; Abbotts, 2010). Very little is known, however, about patients' perspectives about having their wound covered with common wound dressings. Patients' views on exposed wounds have been described qualitatively, but only after early removal of a dressing (Meylan & Tschantz, 2001). Although a small number of patients found dressing removal uncomfortable and reported not liking

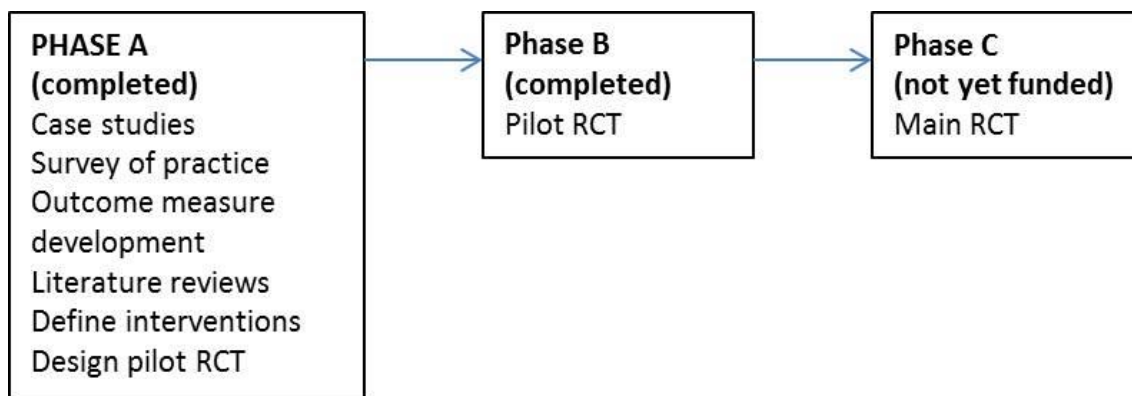
the sight of their undressed wounds, these findings lack detailed information about patients' views on dressed and undressed wounds. Other than research conducted in the context of the Bluebelle study (Elliott et al, 2017), we are not aware of any in-depth research that has examined HCPs' and patients' views on the practical and clinical issues associated with routine post-surgical dressing use, novel dressing strategies (e.g. glue-as-a-dressing), and no dressing use (Elliott et al, 2017; Bluebelle Study Group et al, 2016b).

## **Aim**

The aims of this article are to (i) provide an in-depth description of HCPs' and patients' perspectives on the clinical and practical issues associated with post-surgical wound dressing use, and (ii) establish how experience of novel dressing strategies (including no dressing use) compares with these perspectives.

## **Methods**

Qualitative data were collected as part of the Bluebelle feasibility study to explore the perspectives of patients and HCPs on post-surgical dressing use (Figure 1 & Box 1). Semi-structured interviews were conducted in the three NHS University Teaching hospitals and three district general hospitals in the South West and the West Midlands regions of England, focusing on gastrointestinal (GI) and obstetric surgery. Ethical approval for this work was granted by the Camden and King's Cross Research Ethics Committee (14/LR/0640) on the 10<sup>th</sup> April 2014.



*Figure 1 – Overall structure of the Bluebelle study*

#### **Box 1 – Description of the Bluebelle study**

Bluebelle was designed to investigate the feasibility and acceptability of conducting a randomised controlled trial (RCT) of post-surgical dressing use that included a no dressing group. Bluebelle was conducted in two phases: Phase A consisted of preparatory qualitative research exploring HCPs' and patients' perspectives on wound dressing use and practice, as well as their views regarding the proposed trial (Bluebelle Study Group et al, 2017\_14). Findings from Phase A informed Phase B, an external pilot RCT, allocating patients to one of three groups: simple dressing, glue-as-a-dressing, or no dressing (Fig 1) (The Bluebelle Study Group et al, 2017\_15). Qualitative data were collected during both Phase A and Phase B.

#### **Sampling and recruitment**

For the qualitative interviews in Phase A and B the research team recruited HCPs working in upper/lower GI and obstetric surgery, including surgeons, nurses, research nurses, and midwives. Eligible patients in Phase A were aged 18 years or over and had recently undergone, or were due to undergo abdominal surgery. Patients in Phase B were 16 or over and had recently undergone elective or unplanned abdominal or obstetric surgery. The qualitative research team used purposive sampling for both phases to ensure a diverse range of patients were included, according to age, gender, type of surgery, and in Phase B according to dressing allocation. In Phase B, the sample was weighted toward patients who were allocated to receive either glue-as-a-dressing or no dressing in



order to explore the experience of these dressing strategies. Written informed consent was provided before each interview.

## Data collection

One-to-one semi-structured interviews were conducted face to face or via telephone by CM, LR, DE and JM. Face-to-face interviews took place on hospital premises or in participants' homes.

The interview schedules were informed by the research objectives of the Bluebelle feasibility study (Bluebelle Study Group et al, 2016b) and evolved as data collection progressed. Interviews during Phase A of the study focused on HCPs' perspectives on wound dressing use and practice and patients' experiences of wound dressing use, as well as hypothetical perspectives on the use of no dressing within the pilot trial. Further interviews were carried out during Phase A to investigate participants' views around the use of glue-as-a-dressing. Phase B interviews aimed to explore HCPs' and patients' actual experience of the use of simple dressings, glue-as-a dressing and no dressing within the pilot trial. An example of wounds covered with glue-as-a-dressing and a simple dressing can be seen in pictures 1 and 2.

A total of 106 HCPs and 88 patients were interviewed. The breakdown of HCPs and patients interviewed in Phase A and Phase B is shown in tables 1-3. Procedures were wide ranging and included hernia repair, colectomy, recto-anal surgery, gallbladder removal, liver surgery, and caesarean sections.

STAFF	Upper / Lower Gastro-intestinal Surgery					Obstetric surgery		
	Consultant surgeon	Registrar	Ward nurse	Theatre staff	Research nurse	Consultant Surgeon	Registrar	Midwife
Understanding wound dressing practice (Phase A)	25	11	23	n/a	n/a	7	7	15
Pilot trial	1	2	4	4	4	0	0	3

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(Phase B)

---

PATIENTS	Upper / Lower Gastro-intestinal Surgery	Obstetric surgery
Understanding wound dressing practice (Phase A)	44	7
Pilot trial (Phase B)	30	7

PATIENTS (Pilot trial - Phase B)	Upper / Lower Gastro-intestinal Surgery	Obstetric surgery
Simple Dressing	4	1
No dressing	15	3
Glue-as-a-dressing	11	3

## Analysis

Interviews were audio-recorded and transcribed verbatim. Data were analysed thematically using NVivo10, guided by the constant comparison method (Glaser & Strauss, 1967). A sample of interview transcripts was coded independently by two researchers to help develop an initial coding framework. Each transcript was then read several times. Some codes were developed *a-priori*, based on the topic guide. More codes were subsequently developed inductively. These codes were then reviewed and indexed into broader categories. The research team met on a regular basis to discuss the coding frame, data interpretation, and whether the topic guide needed to be adapted in light of the emerging findings.

## Findings

### Themes emerging from Phase A interviews

During Phase A interviews six core themes were identified as integral to HCPs' and patients' perspectives on the purposes and practice of wound dressings in GI and obstetric surgery: wound contamination and infection, wound healing, wound care, physical protection afforded by simple dressings, potential psychological impact of an exposed wound, and carrying out everyday tasks.

### **1. Wound contamination and infection**

It was clear, during the initial interviews, that a consensus about the role of simple dressings in SSI prevention did not exist, despite SSI being a key topic for discussion in relation to dressing use.

Some nurses posited a role for simple dressings in preventing infection as they provide a physical barrier against the external environment, such as the hospital environment or patients picking at their wound, which otherwise could contaminate it, thereby causing infection (quote 1).

When SSI prevention was discussed as a reason for simple dressing use it was suggested, predominantly by surgeons, that this mechanism of SSI prevention was only a purported or theoretical role of simple dressings. These participants questioned the notion that dressings prevent infection via wound contamination. Indeed, some went further to suggest that dressing use might actually cause infection, for instance by keeping the wound area moist and providing an environment that promoted the growth of 'bugs' (quote 2).

Further demonstrating the complexity of this issue and perhaps the uncertainty surrounding it, surgeons offered different explanations at different points of Phase A interviews. Others suggested scenarios where they felt that the risk of SSIs associated with contamination of the post-surgical wound was higher without the use of some form of dressing. Examples included wounds near caesarean sections (the theatre environment following the delivery of a baby was considered as 'messy') and stomas, where glue-as-a-dressing was used to protect the wound from contamination from the ostomy, resulting in lower infection rates and perhaps providing advantages over simple dressings (quote 3).

The specific post-surgical events following delivery of a baby were a further reason for obstetric professionals' concern about leaving wounds undressed. Mothers' attention was thought to be concentrated on their newborn babies, not on keeping their wound clean. This, according to some, made these women especially in need of a dressing (quote 4).

Some patients also demonstrated uncertainty around the role of simple dressings in SSI, and whether or not it would be best to leave a wound open to the air (quote 5).

## **2. Wound healing**

There was a lack of consensus from HCPs regarding whether or not simple dressings promoted wound healing. Some believed that they contributed to wound healing by maintaining warmth around the wound site by not disturbing the wound and avoiding lifting the dressing too often (quote 6).

In addition, nurses felt that simple dressings would help the wound healing process by absorbing any exudate or sweat (quote 7).

However, some HCPs and patients disagreed with this idea, suggesting that simple dressings slowed down the wound healing process by preventing the wound from drying (quote 8).

Similar to discussions concerning the role of dressings in SSIs it was clear that many HCPs were uncertain about the relationship between dressing use and wound healing. Again, some interviewees expressed this doubt and when probed further challenged their own earlier statements about the impact of wound dressings on wound healing (quote 9).

## **3. Wound care**

The main concerns regarding post-operative wound care were the ability to manage exudate and the identification of wound infections.

Several HCPs and patients felt that simple dressings should be used to absorb exudate, avoiding the possibility of leaky undressed wounds soiling their clothes or bedding (quote 10).

155 Some HCP interviewees were also concerned that glue-as-a-dressing could delay the detection and  
156 management of SSIs, as they would prevent leakage associated with infection (quote 11):  
157 Other interviewees, however, said that infection could be detected through other ways, such as the  
158 redness of the skin, the level of pain, swelling, fever, and a raised pulse rate.

159 **Box 2 – Quotes from participants**

Quote 1

*From my experience I would say a wound dressing is to protect the wound, and basically it's to prevent infection, that's what I would believe it to do from my nursing practice and midwifery. The whole reason they have a dressing is to protect that area from, you know, foreign bodies and bacteria and the environment (Midwife, Phase A)*

Quote 2

*I would imagine that if the skin flora can get under the dressing then all the dressing does is keep a nice warm moist growbag environment for whatever bugs are there (Obstetric surgeon, Phase A)*

Quote 3

*I like the idea that it's nice and sealed, particularly when we make stomas [...] The great thing about the superglue is that it glues it shut so it feels like it's sealed away from the muck (Registrar, General surgery, Phase A)*

Quote 4

*Especially when they're preoccupied with their babies and the last thing on their mind is hmm looking after their wound site (Midwife, Phase A)*

Quote 5

*It may do [prevent infection], but if it's left and you haven't got anything on and it was...to the air, it may do, I don't know. But otherwise, it's probably best without the dressing on and left how it is (Patient, Phase A)*

Quote 6

*We try and not disturb open wounds too frequently [...] Every time you take a dressing off, the natural body heat drops. So the temperature around that wound bed drops when you remove a dressing, because you're opening it to the air (Nurse, General surgery, Phase A)*

Quote 7

*When there's an overhang then it gets sweaty and wet and that's probably not conducive to the wound healing (Midwife, Phase A)*

Quote 8

*By having it [the wound] open [in the air] earlier would it mean it would heal quicker, or by having a dressing on, is it going to make the dressing, is the dressing going to keep it like moist and soft where it's not going to heal so quick? (Patient, Phase A)*

Quote 9

*I think specifically related to C-sections I would answer that, you know, they're (simple dressings) used again to, I keep reiterating: promote healing, prevent infection*

*[Later during the interview]*

*I don't think in terms of promoting healing [...] I don't think a wound dressing by itself can necessarily speed up healing. I don't know, it's interesting to (see) (Midwife, Phase A)*

Quote 10

*The day after, two days after, that's fine, I don't mind not having a dressing but straight after surgery, especially because it's leaking blood and all the rest of it, I would want it covered. It would worry me (Patient, Phase A)*

Quote 11

*If there is sufficient amount of pressure I suppose underneath that wound then that could probably*

### Box 3 – Quotes from participants

#### Quote 12

*Because your wound when it's new is very sensitive so if it brushes against something then in theory it might protect it. And some of our wounds are very big, particularly in my speciality, we're talking about things all across the abdomen, so our patients' pain issues are very important* (General surgery registrar, Phase A)

#### Quote 13

*When I'm sat up the wound is kind of tucked under because of my belly so big the wound actually pushes against my legs hmm so when I stand up I can feel the hmm the wound and when I'm hot as well peeling away from my legs. If I didn't have a dressing on it I think, I think the stitches would like stick to my leg and it would hurt a lot more* (Obstetric patient, Phase A)

#### Quote 14

*I mean that's just my bias view but you know when you do a ward round and you take the dressing off to have a look at the wound for example they are always very anxious about having the wound exposed and they're you know very keen for the wound to be dressed and covered up quite quickly* (General surgeon, Phase A)

#### Quote 15

*Maybe if I did not have a dressing [...] maybe I would have been a little more, I would say a little more careful and more concerned about how I did things around my daily chores, like having a shower or going to the toilet and stuff like that* (Patient, Phase A)

#### Quote 16

*I think it dried quicker [...] because the air was going to it [...] it healed quicker* (Patient, no dressing, Phase B)

#### Quote 17

*If we have got things like oozing or redness or something that doesn't look quite right, we are spotting it earlier* (Nurse, general surgery, Phase B)

#### Quote 18

*I'm just making sure I be careful at night time and [...] I'm making sure I'm wearing sort of tops and um so I don't knock it or rub myself or when I roll I don't pull* (Patient, no dressing, Phase B)

#### Quote 19

*Well that's where, that sort of having the baby stomach is actually a bit of help in that as well because then it just tends to keep everything away from... [clothes]* (Obstetric patient, no dressing, Phase B)

#### Quote 20

*Um... to be honest, it didn't really bother me, um, it didn't affect me in any way being able to see it [my wound]* (Patient, no dressing, Phase B)  
*I've been quite pleased with it actually, it's, it's quite neat* (Patient, glue-as-a-dressing, Phase B)

#### Quote 21

*It gave me a bit of confidence because the more I can see the more then I feel I'm in control and therefore I know what's going on with my body* (Patient, glue-as-a-dressing, Phase B)

#### Quote 22

*It was completely straightforward you know. I got home from hospital on... So I got there in the evening, the following day I had a shower and you know my wounds were absolutely fine, I had not, not an ounce of [...] bother or trouble* (Patient, no dressing, Phase B)

#### ***4. Physical protection afforded by simple dressings***

Both HCPs and patients in Phase A thought that simple dressings provide protection for the wound from physical trauma and from the wound closure catching on clothes. While patients expressed concern at the thought of an undressed wound leaving them vulnerable to knocks, HCPs suggested that this was partly mitigated by the use of simple dressings (quote 12). Interviewees, especially in obstetrics, also expressed some concern that the wound closure (sutures, staples, clips) on an undressed wound would catch on clothes. Indeed, interviewees in obstetrics seemed to be more concerned about the prospect of leaving wounds undressed during the Phase A interviews. For example, the following obstetric patient was concerned that her stitches would stick to her legs if she did not have a dressing, which eventually would be more painful for her (quote 13).

#### ***5. The potential psychological impact of an exposed wound***

Seeing the wound was a potential issue raised by several HCPs and patients during the Phase A interviews, especially in the case of undressed wounds. Despite the fact that a small minority of nurses believed that seeing an undressed wound could help patients come to terms quicker with their wounds, some HCPs thought that seeing an undressed wound would lead to psychological discomfort for patients who may be concerned by the appearance, which could look 'messy'. Several patients believed that they would not be comfortable seeing their wound, which according to some of the HCPs could lead to some anxiety among patients (quote 14).

#### ***6. Carrying out everyday tasks***

Although HCPs did not raise the issue during the Phase A interviews, some patients thought that they would need to be more careful without a simple dressing when carrying out everyday tasks, such as having a shower or moving around. This was perhaps interrelated with thoughts about

perceptions regarding the physical and psychological protection afforded by simple dressings (quote 15).

### **How patients' experiences compare to their initial perceptions**

Overall, the main concerns raised by participants during the Phase A interviews were not confirmed in Phase B and the majority reported a positive experience of using glue-as-a-dressing or having exposed wounds.

No serious concerns relating to no dressing use and SSIs were reported by participants, even the obstetric ones. In addition, the idea that not using a wound dressing facilitated the process of wound healing by allowing the wound to dry was discussed several times both by patients and nurses (based on the understanding that no SSI was present) (quote 16).

HCPs and patients in Phase B were generally enthusiastic about wound care for an undressed wound or a wound covered with glue-as-a-dressing and appreciated the fact that in both cases there was no dressing to lift, re-apply or change. Some nurses suggested that undressed wounds allowed them to notice any issues faster than with a simple dressing (quote 17):

This also meant that that glue-as-a-dressing and undressed wounds were reportedly not intrusive for patients, making it easier to check for infection.

Patients and HCPs in Phase B did not report negative physical experiences of undressed wounds.

Patients also seemed content with the physical experience of glue-as-a-dressing, with several stating that they did not notice that they had glue on their wound. However, some patients with glue-as-a-dressing were aware of their wound and of a slight pulling sensation around it, implying that they had to be more careful around it, particularly at night (quote 18).

In order to avoid the wound closure catching on clothes, several patients with undressed wounds reported wearing loose clothing. One obstetric patient felt that her post-birth 'baby stomach' was an advantage as it provided some physical protection (quote 19).



211 Patients allocated to no dressing or glue-as-a-dressing did not find their wound 'messy' as  
212 mentioned by some participants in Phase A and felt at ease with seeing their wound (quote 20):  
213 In addition, some patients suggested that being able to view the wound had given them a feeling of  
214 control, increased their confidence in relation to it, and allowed them to check whether their wound  
215 was healing properly (quote 21)  
216 Overall, patients with undressed wounds and glue-as-a-dressing felt that they were able to carry out  
217 everyday tasks including having a shower, walking, getting up, lying down, and that they were able  
218 to do so sooner than with a simple dressing (quote 22).  
219 In the case of having a shower, it was the waterproof feature of glue-as-a-dressing that patients  
220 found to be a major advantage. Some explained this freedom of movement by the way glue-as-a-  
221 dressing stuck to the wound, enabling it to move with the contours of the body, therefore allowing  
222 patients to move freely.

223

## 224 **Discussion**

225 We have elicited and explored HCPs' and patients' views on the clinical and practical issues  
226 associated with wound dressing use in primary wounds following abdominal and obstetric surgery.  
227 We have also presented data showing how the experience of novel dressing strategies, in this case  
228 no dressing and glue-as-a-dressing, compare with these perspectives. Issues raised in the Phase A  
229 interviews related to the purpose and practice of wound dressings included concerns about wound  
230 contamination and infection; wound healing and wound care; the physical protection afforded by  
231 simple dressings; the potential for psychological impact resulting from exposed wounds; and the  
232 ability of patients to carry out everyday tasks. All of these were discussed by patients and staff in  
233 the exploratory work we undertook before our pilot trial, except the importance of being able to  
234 carry out everyday tasks following surgery, which was only raised as an issue by patients. During  
235 Phase B interviews it was clear that concerns raised during Phase A were not being confirmed by  
236 patients or staff. Rather, participants tended to discuss the advantages of the novel dressings used

instead. This work highlights the value of using qualitative research methods before and during an RCT to understand the acceptability and views of staff and patients about the trial interventions. To our knowledge, Bluebelle is the first study that has explored in-depth views of a range of HCPs, and of patients undergoing various GI and obstetrics procedures on having undressed wounds and views relating to immediate exposure (in the case of no dressing) of wounds (Elliott et al, 2017; The Bluebelle Study Group, 2016b), rather than early removal of wound dressings (Meylan & Tschantz, 2001). Bluebelle is also the first study to describe perspectives on the use of glue-as-a-dressing.

Limitations include the relatively low number of HCPs who delivered the pilot trial during Phase B, who were therefore available for interview. We also had a relatively low number of patients undergoing obstetric surgery who took part in an interview. However, the views of staff and obstetric patients that did participate were consistent and we did not see any clear differences in the views expressed between upper or lower GI and obstetric surgery. Further confirmatory research in obstetrics and other surgical specialties to strengthen this finding may be warranted. In addition, we have not been able to follow patients longitudinally to examine whether views and concerns related to dressing strategy change based on actual experience of novel approaches. There is a possibility that some patients who had strong concerns that would predispose them to negative views concerning the experience of no dressing or glue-as-a-dressing may not have agreed to take part in the pilot trial.

Our study demonstrates that current views and practice are not necessarily a consequence of active reflection on the part of the HCPs. We have described how some interviewees during Phase A challenged their own (automatically and initially) proffered reasons for dressing use, such as for SSI prevention. Indeed HCPs' views about pertaining to the role of wound dressings in infection and healing demonstrated considerable uncertainty. Whilst they suggested potential mechanisms for these outcomes, they were often unable to state whether these were valid or not. These clinical

concerns may be of less importance to HCPs than practical issues such as wound care. During Phase A, simple dressings were thought to have a clear role to play in this, for example, by absorbing wound exudate. In the pilot trial (Phase B) a specific protocol to deal with exudate was implemented without compromising allocation to no dressing. Thus, although participants expressed certain concerns, these concerns did not become manifest. Indeed, HCP interviewees saw certain advantages with no dressing and glue-as-a-dressing in terms of ability to view the wound easily. Whilst patients did discuss these issues in Phase A, they were also concerned with practicality and everyday tasks. Again, during Phase B the patients we spoke to suggested that the novel dressing strategies were advantageous in these respects. During Phase A, whilst the potential benefits of seeing the wound was briefly mentioned, a majority of HCPs hypothesised that patients may not like to see the wound and we were interested to explore whether this was the case. We subsequently found that Phase B patients reported a feeling of control, confidence and reassurance in being able to do so. This shows that assumptions about patients on the part of the HCPs may not always be correct and can be challenged through discussion and qualitative research with patients.

On the whole, participants were positive about their experience of glue-as-a-dressing. Glue-as-a-dressing sits in between simple (non-transparent) dressings and undressed wounds, providing the advantages of being able to view the wound that were detailed by HCPs and patients, whilst offering some covering to the wound. Other advantages include the absence of need for multiple applications or for assistance to remove a dressing. Previous research evaluating transparent wound dressings has also shown perceived benefits associated with being able to monitor the wound more easily (Stephen-Hayes et al, 2014).

## **Conclusions**

We have described the views of professionals and patients about the purpose and practice of wound dressings in primary post-surgical wounds. Findings suggest that views are embedded and ingrained clinical practice. Healthcare professionals and patients may start to challenge these views when they are exposed to the experience of novel dressing strategies, as in the Bluebelle study pilot trial, or as new evidence of the clinical effect of dressing strategies emerges, such as their role in wound infection and healing. Further research is required to explore the association between dressing use and the issues of concern to staff and patients, and to establish the association and underlying mechanisms of effects for the clinical and practical issues identified here, including those of psychological and practical relevance to patients. The Bluebelle study has demonstrated that there can be value in understanding the views of HCPs to enable those views to be discussed and challenged where appropriate.

#### **Key points**

- Six themes emerged from the interviews: wound contamination and infection; wound healing; wound care; physical protection afforded by simple dressings; potential psychological impact of an exposed wound; and ability to carry out everyday tasks.
- Overall, participants were positive about their experience of glue-as-a-dressing and the option of no dressing.
- Current views on wound dressing practice are not necessarily a consequence of active reflection on the part of the HCPs and views are part of embedded and ingrained clinical practice.
- These views can be challenged when they are exposed to the experience of novel dressing strategies within a randomised trial, or as new evidence of the clinical effect of dressing strategies emerges.

#### **Reflective questions**

314 • What is the association between dressing use and issues of concern to staff and patients?

315 • Do these findings apply to other surgical specialties?

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**Contributions**

All authors have read and commented on the final version of the article.

**Funding acknowledgement**

The Bluebelle study is funded by the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Programme (HTA - 12/200/04) and will be published in full in the HTA journal series.

This report presents independent research commissioned by the NIHR. The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, MRC, CCF, NETSCC, the HTA programme or the Department of Health.

The views and opinions expressed by the interviewees in this publication are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, MRC, CCF, NETSCC, the HTA programme or the Department of Health.

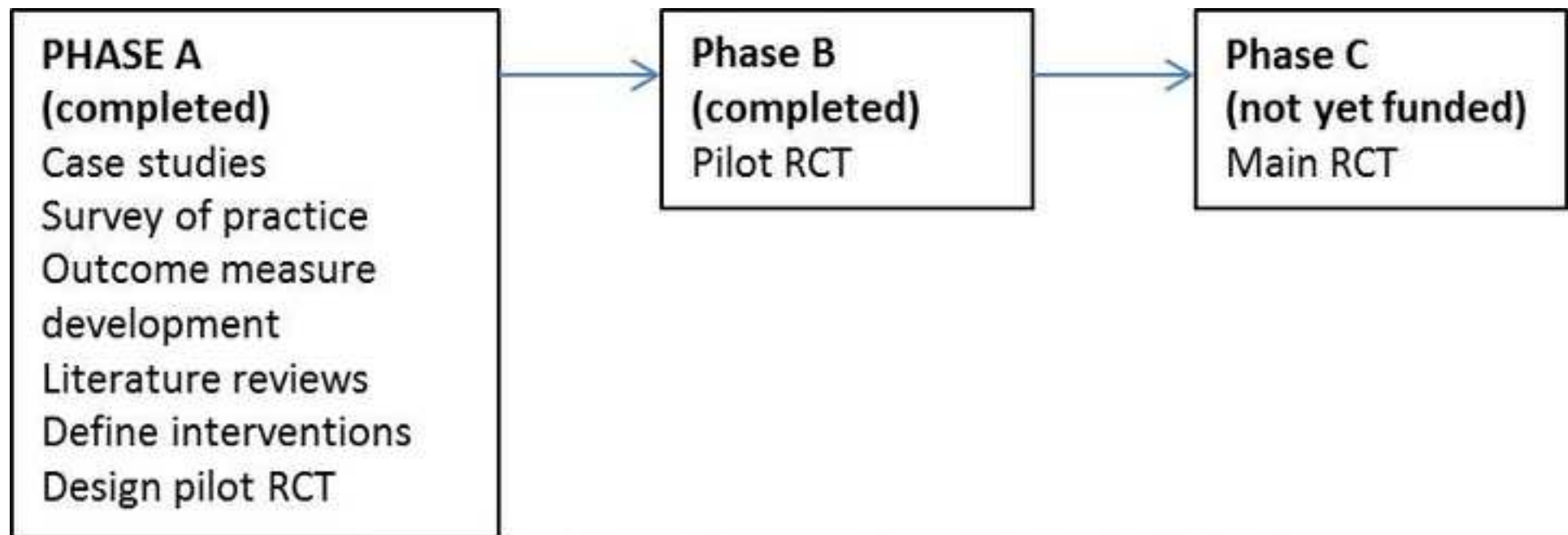
The Bluebelle study was undertaken with the support of the MRC ConDuCT-II Hub (Collaboration and innovation for Difficult and Complex randomised controlled Trials In Invasive procedures - MR/K025643/1)'.

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*Figure 1 – Overall structure of the Bluebelle study*

STAFF	Upper / Lower Gastro-intestinal					Obstetric surgery		
	Surgery							
	Consultant surgeon	Registrar	Ward nurse	Theatre staff	Research nurse	Consultant Surgeon	Registrar	Midwife
Understanding wound dressing practice (Phase A)	25	11	23	n/a	n/a	7	7	15
Pilot trial (Phase B)	1	2	4	4	4	0	0	3

Table 1 – Number of HCPs by surgical specialty

PATIENTS	Upper / Lower Gastro-intestinal Surgery	Obstetric surgery
Understanding wound dressing practice (Phase A)	44	7
Pilot trial (Phase B)	30	7

Table 2 – Number of patients by surgical specialty

PATIENTS (Pilot trial - Phase B)	Upper / Lower Gastro-intestinal Surgery	Obstetric surgery
Simple Dressing	4	1
No dressing	15	3
Glue-as-a-dressing	11	3

Table 3 – Number of patients in the external pilot RCT (Phase B) by surgical specialty and dressing allocation

**Box 1 – Description of the Bluebelle study**

Bluebelle was designed to investigate the feasibility and acceptability of conducting a randomised controlled trial (RCT) of post-surgical dressing use that included a no dressing group. Bluebelle was conducted in two phases: Phase A consisted of preparatory qualitative research exploring HCPs' and patients' perspectives on wound dressing use and practice, as well as their views regarding the proposed trial (Bluebelle Study Group et al, 2017\_14). Findings from Phase A informed Phase B, an external pilot RCT, allocating patients to one of three groups: simple dressing, glue-as-a-dressing, or no dressing (Fig 1) (The Bluebelle Study Group et al, 2017\_15). Qualitative data were collected during both Phase A and Phase B.

**Box 2 – Quotes from participants**Quote 1

*From my experience I would say a wound dressing is to protect the wound, and basically it's to prevent infection, that's what I would believe it to do from my nursing practice and midwifery. The whole reason they have a dressing is to protect that area from, you know, foreign bodies and bacteria and the environment (Midwife, Phase A)*

Quote 2

*I would imagine that if the skin flora can get under the dressing then all the dressing does is keep a nice warm moist growbag environment for whatever bugs are there (Obstetric surgeon, Phase A)*

Quote 3

*I like the idea that it's nice and sealed, particularly when we make stomas [...] The great thing about the superglue is that it glues it shut so it feels like it's sealed away from the muck (Registrar, General surgery, Phase A)*

Quote 4

*Especially when they're preoccupied with their babies and the last thing on their mind is hmm looking after their wound site (Midwife, Phase A)*

Quote 5

*It may do [prevent infection], but if it's left and you haven't got anything on and it was...to the air, it may do, I don't know. But otherwise, it's probably best without the dressing on and left how it is (Patient, Phase A)*

Quote 6

*We try and not disturb open wounds too frequently [...] Every time you take a dressing off, the natural body heat drops. So the temperature around that wound bed drops when you remove a dressing, because you're opening it to the air (Nurse, General surgery, Phase A)*

Quote 7

*When there's an overhang then it gets sweaty and wet and that's probably not conducive to the wound healing (Midwife, Phase A)*

Quote 8

*By having it [the wound] open [in the air] earlier would it mean it would heal quicker, or by having a dressing on, is it going to make the dressing, is the dressing going to keep it like moist and soft where it's not going to heal so quick? (Patient, Phase A)*

Quote 9

*I think specifically related to C-sections I would answer that, you know, they're (simple dressings) used again to, I keep reiterating: promote healing, prevent infection*

*[Later during the interview]*

*I don't think in terms of promoting healing [...] I don't think a wound dressing by itself can necessarily speed up healing. I don't know, it's interesting to (see) (Midwife, Phase A)*

Quote 10

*The day after, two days after, that's fine, I don't mind not having a dressing but straight after surgery, especially because it's leaking blood and all the rest of it, I would want it covered. It would worry me (Patient, Phase A)*

Quote 11

*If there is sufficient amount of pressure I suppose underneath that wound then that could probably break through [...] I don't know whether that's may be more delayed [...] so is a wound infection diagnosed or picked up earlier with a dressing simply because there isn't say a sealant on the skin as there is with a glue (Registrar, General surgery, Phase A)*

**Box 3 – Quotes from participants**Quote 12

*Because your wound when it's new is very sensitive so if it brushes against something then in theory it might protect it. And some of our wounds are very big, particularly in my speciality, we're talking about things all across the abdomen, so our patients' pain issues are very important* (General surgery registrar, Phase A)

Quote 13

*When I'm sat up the wound is kind of tucked under because of my belly so big the wound actually pushes against my legs hmm so when I stand up I can feel the hmm the wound and when I'm hot as well peeling away from my legs. If I didn't have a dressing on it I think, I think the stitches would like stick to my leg and it would hurt a lot more* (Obstetric patient, Phase A)

Quote 14

*I mean that's just my bias view but you know when you do a ward round and you take the dressing off to have a look at the wound for example they are always very anxious about having the wound exposed and they're you know very keen for the wound to be dressed and covered up quite quickly* (General surgeon, Phase A)

Quote 15

*Maybe if I did not have a dressing [...] maybe I would have been a little more, I would say a little more careful and more concerned about how I did things around my daily chores, like having a shower or going to the toilet and stuff like that* (Patient, Phase A)

Quote 16

*I think it dried quicker [...] because the air was going to it [...] it healed quicker* (Patient, no dressing, Phase B)

Quote 17

*If we have got things like oozing or redness or something that doesn't look quite right, we are spotting it earlier* (Nurse, general surgery, Phase B)

Quote 18

*I'm just making sure I be careful at night time and [...] I'm making sure I'm wearing sort of tops and um so I don't knock it or rub myself or when I roll I don't pull* (Patient, no dressing, Phase B)

Quote 19

*Well that's where, that sort of having the baby stomach is actually a bit of help in that as well because then it just tends to keep everything away from... [clothes]* (Obstetric patient, no dressing, Phase B)

Quote 20

*Um... to be honest, it didn't really bother me, um, it didn't affect me in any way being able to see it [my wound]* (Patient, no dressing, Phase B)  
*I've been quite pleased with it actually, it's, it's quite neat* (Patient, glue-as-a-dressing, Phase B)

Quote 21

*It gave me a bit of confidence because the more I can see the more then I feel I'm in control and therefore I know what's going on with my body* (Patient, glue-as-a-dressing, Phase B)

Quote 22

*It was completely straightforward you know. I got home from hospital on... So I got there in the evening, the following day I had a shower and you know my wounds were absolutely fine, I had not, not an ounce of [...] bother or trouble* (Patient, no dressing, Phase B)





