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### Incidence of and risk factors for stoma-site incisional herniation after reversal

DOI: 10.1002/bjs5.50165

We read with interest the work of Amelung and colleagues, recently published in the journal<sup>1</sup>. This retrospective cohort identified several factors associated with increased hernia risk following ostomy closure. However, we identified considerable heterogeneity within the groups included in their analysis, particularly patients with hernias at the site of both ileostomies and colostomies, and variable indications for their construction. It is notable that twice as many patients with a colostomy presented with hernia compared with those with an ileostomy. The technique of surgical closure was not standardized, leading to potential confounding effects of methods, sutures and technique. To gain a proper understanding of risk factors for stoma-site hernia development, we suggest more robust stratification of these factors. Perhaps the data could be analysed to compare the factors associated with stoma-site hernia by stoma type reversed.

It is interesting that hypertension is associated with abdominal wall failure, a relationship previously identified in our own work following loop ileostomy closure<sup>2</sup>. The significance of BMI and hypertension appear to be overtaking smoking as a risk factor, as smoking was not a significant factor in this analysis or others<sup>2,3</sup>. Optimizing BP and weight reduction are logical ways to reduce the incidence of hernia, as well as the selective use of prophylactic mesh implants in high-risk patients. Further work is required to assess mechanisms related to hernia recurrence and hypertension. Mounting evidence now suggests the main predictor of failure is the patient, not the surgeon, and, of course,

both parties can work together to reduce risks.

### Disclosure

The authors declare no conflict of interest.

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- 1 Amelung FJ, de Guerre LEVM, Consten ECJ, Kist JW, Verheijen PM, Broeders IAMJ *et al.* Incidence of and risk factors for stoma-site incisional herniation after reversal. *BJS Open* 2018; **2**: 128–134.
- 2 Brook AJ, Mansfield SD, Daniels IR, Smart NJ. Incisional hernia following closure of loop ileostomy: the main predictor is the patient, not the surgeon. *Surgeon* 2018; **16**: 20–26.
- 3 Fazekas B, Fazekas B, Hendricks J, Smart N, Arulampalam T. The incidence of incisional hernias following ileostomy reversal in colorectal cancer patients treated with anterior resection. *Ann R Coll Surg Engl* 2017; **99**: 319–324.

### Authors' reply: One-year outcomes for congenital diaphragmatic hernia

DOI: 10.1002/bjs5.50168

We agree that developing a core outcome set for congenital diaphragmatic hernia would be an important step forward in the field. To achieve this we will need to collaborate with parents, patients, neonatologists, paediatric surgeons, fetal medicine doctors, nurses, policy-makers and other professionals caring for these babies.

With regard to the limitations of the study, these were presented extensively in the Discussion, but we still hope this paper will give original and accurate information to the scientific community.

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### One-year outcomes for congenital diaphragmatic hernia

DOI: 10.1002/bjs5.50169

We commend the detailed analyses presented by Wang *et al.*, and support the use of routinely collected data such as those from Hospital Episode Statistics (HES) for interrogating surgical outcomes. Reducing unwarranted variation is a priority for the National Health Service and has been the subject of initiatives such as the Getting It Right First Time (GIRFT) programme in paediatric surgery.

Wang and colleagues' findings strike a similar note to work we have done using HES data in paediatric surgery<sup>1,2</sup>; together they highlight the challenges of detecting statistically and clinically significant differences in outcome when investigating rare conditions. The key for future study has to be the development of robust, composite outcome measures that are both clinically relevant and important to patients and families.

We highlight the limitations of HES data and the need to guard against 'overinterpretation': Wang *et al.* used ICD-10 codes for postnatal pulmonary hypertension (PPHN) and pulmonary hypoplasia to investigate their effects on outcome. It is almost certain that these codes were completed somewhat arbitrarily at discharge, and it could be argued that all babies with congenital diaphragmatic hernia (CDH) have PPHN and pulmonary hypoplasia anyway; these analyses therefore seem unhelpful. Furthermore, a centre's outcomes are likely to be determined largely by how severely affected the babies they are looking after are. This case-mix severity will be influenced greatly by whether or not a centre has inborn babies (rather than those well enough to be transferred in), patterns of termination of pregnancy, and whether or not babies are transferred for specialist care, for instance for extracorporeal membrane oxygenation. HES data lack