

B

Milan Colorectal Congress, 27-29 May 2026

The affordability of prophylactic mesh to prevent incisional hernia after colorectal surgery

Evidence from Italy, France and the United Kingdom

Benedict Stanberry, LLB, LLM, MBA, MSc, FRSM

Director, Institute for Health Economics and Outcomes Research, Oxford, UK

© Benedict Stanberry 2026

The Burden

Incisional hernia (IH) following colorectal surgery is a common complication, consistently observed across both global and European health systems

Lozada Hernandez et al 2026 · Systematic review and meta-analysis of prevalence of IH after midline laparotomy · 20 studies · 790,800 patients

10.1 %

global pooled prevalence
after midline laparotomy

95% CI: 7.0–15.0%

13.4 %

pooled European prevalence
across 5 included studies

95% CI: 7.8–19.1%

HR 1.55

increased risk for
colorectal surgery

95% CI 1.35–1.79

France

Ortega-Deballon et al 2023

HR 1.2 colorectal surgery versus
index hepatobiliary surgery

Population

710,074 patients · PMSI hospital discharges 2013-14

What this adds

Confirms French patients undergoing colorectal surgery are at higher risk of IH compared to other types of abdominal surgery.

Italy

Gruppo et al 2012 · Scortichini et al 2025

11.6%

Population

124 of 1,065 patients who
underwent midline
abdominal wall closure
developed IH by 6.4 years
average follow-up.

11.2%

Population

1,476 of 13,176 patients
who underwent
colostomy / ileostomy
underwent hernia repair
or were hospitalised
with a hernia diagnosis
by 4-years follow-up.

United Kingdom

Smith et al 2024

10.0 % of colorectal surgery
patients undergo IH repair

Population

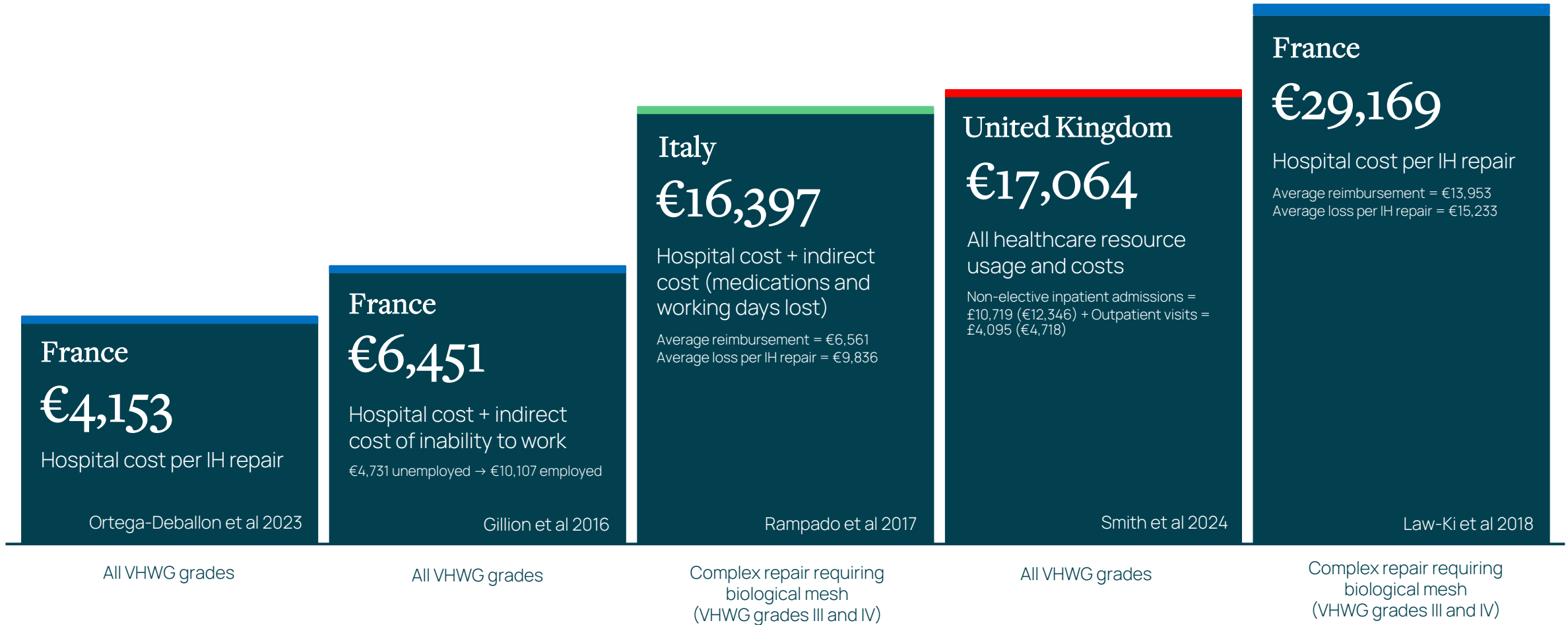
297,134 patients · Hospital Episode Statistics 2014-17

What this adds

Colorectal surgery patients have highest IH repair rate
among abdominal surgery patients (average = 5.1%).

The Cost

IH repair costs increase with complexity. In several European health systems, hospital reimbursement has not kept up with the cost of complex repairs using biological mesh.



The Impact

There is now good evidence that prophylactic mesh reduces the incidence of stoma site incisional hernia (SSIH) and is therefore cost-saving for hospitals, health systems and patients

PRIMA

Van den Dop et al 2024

HR 0.39

95% CI: 0.25-0.61 (onlay)

HR 0.49

95% CI: 0.31-0.76 (sublay)

- three-arm RCT (1:2:2), n=480
- high risk midline laparotomy
- five-year follow-up
- onlay mesh and sublay mesh both associated with significantly lower IH risk than primary sutures

France

Drissi et al 2025

24% → 8% (p = 0.029)

- prospective observational, n=100
- Phasix (P4HB) biosynthetic vs. standard care (no mesh)
- ileostomy reversal
- four-year follow-up
- SSIH significantly lower in mesh group

Italy (PRINCESS)

Peltrini et al 2025

1.7%

1-year follow-up

4.3%

2-year follow-up

- prospective single-arm, n=115
- Phasix (P4HB) biosynthetic mesh
- ileostomy reversal
- prophylactic placement of biosynthetic mesh is safe and effective

Rognoni et al 2026 · Budget impact analysis of prophylactic biosynthetic mesh use in Italy · Phasix (P4HB) biosynthetic mesh vs. standard care (no mesh)

Hospital perspective

- €861 per patient

Health system perspective

- €180 per patient

Societal perspective

- €328 per patient

Main drivers of hospital costs: (1) incisional hernia incidence rate, (2) incisional hernia repair rate, (3) cost of incisional hernia repair.

References

- Drissi F, Jurczak F, Dabrowski A, et al. Long-term outcome of prophylactic biosynthetic mesh reinforcement at the time of loop ileostomy reversal for colorectal cancer- results of a case-matched study. *Hernia*. 2025 Apr 4; 29(1): 133. <https://doi.org/10.1007/s10029-025-03328-5>
- Gillion J, Sanders D, Miserez M, et al. The economic burden of incisional ventral hernia repair: a multicentric cost analysis. *Hernia* 2016 Dec; 20(6): 819-830. <https://doi.org/10.1007/s10029-016-1480-z>
- Gruppo M, Mazzalai F, Lorenzetti R, et al. Midline abdominal wall incisional hernia after aortic reconstructive surgery: a prospective study. *Surgery*. 2012 Jun; 151(6): 882-8. <https://doi.org/10.1016/j.surg.2011.12.032>
- Law-Ki C, Robineau C, Garnier N, et al. Cost of complex abdominal wall reconstruction with biological prostheses in a French public hospital. *J Visc Surg*. 2018 Oct; 155(5): 349-353. <https://doi.org/10.1016/j.jviscsurg.2018.08.001>
- Lozada Hernandez E, Fernandez Vázquez-Mellado L, Martin-Del-Campo L, et al. Systematic Review and Meta-Analysis of the Prevalence and Risk Factors Associated With the Occurrence of Incisional Hernia in Patients Undergoing Midline Laparotomy. *J Abdom Wall Surg*. 2026 Mar 6; 5: 15439. <https://doi.org/10.3389/jaws.2026.15439>
- Ortega-Deballon P, Renard Y, de Launay J, et al. Incidence, risk factors, and burden of incisional hernia repair after abdominal surgery in France: a nationwide study. *Hernia*. 2023 Aug; 27(4): 861-871. <https://doi.org/10.1007/s10029-023-02825-9>
- Peltrini R, Rognoni C, Bellanova G, et al. Prevention of incisional hernia with biosynthetic mesh at the site of temporary ileostomy closure (PRINCESS Study): Preliminary Results. *Hernia*. 2025 Sep 18; 29(1): 277. <https://doi.org/10.1007/s10029-025-03462-0>
- Rampado S, Geron A, Pirozzolo G, et al. Cost analysis of incisional hernia repair with synthetic mesh and biological mesh: an Italian study. *Updates Surg*. 2017 Sep; 69(3): 375-381. <https://doi.org/10.1007/s13304-017-0453-9>
- Rognoni C, Bracale U, Peltrini R, et al. Preventing incisional hernia after ileostomy closure: Budget impact analysis of prophylactic biosynthetic mesh use in Italy. *Surgery* 2026 Jun 194: 110175. <https://doi.org/10.1016/j.surg.2026.110175>
- Scortichini M, Sciattella P. RWD168 Risk of Abdominal Hernia Repair in Patients With Intestinal Stoma in Italy: A Real-World Analysis *Value Health* 2025 Dec; 28(12): S638. [https://www.valueinhealthjournal.com/article/S1098-3015\(25\)05475-0/abstract](https://www.valueinhealthjournal.com/article/S1098-3015(25)05475-0/abstract)
- Smith L, Wilkes E, Rolfe C, et al. Incidence, Healthcare Resource Use and Costs Associated With Incisional Hernia Repair. *J Abdom Wall Surg*. 2024 Feb 28; 3: 12452. <https://doi.org/10.3389/jaws.2024.12452>
- Van den Dop L, Sneiders D, Yurtkap Y, et al. Prevention of incisional hernia with prophylactic onlay and sublay mesh reinforcement vs. primary suture only in midline laparotomies (PRIMA): long-term outcomes of a multicentre, double-blind, randomised controlled trial. *Lancet Reg Health Eur*. 2023 Nov 22; 36: 100787. <https://doi.org/10.1016/j.lanepe.2023.100787>