## **SUPPORTING TABLES**

Table S1. Input parameters utilised in the economic model.

Table S2. Included studies in the NMA.

Table S3. Final data file for the NMA.

Table S4. Results of deterministic sensitivity analyses.

**Table S1. Input parameters utilised in the economic model for adult women with anterior POP.**

|  |  |  |  |
| --- | --- | --- | --- |
| Input parameter | Mean value | Probabilistic distribution | Source of data - comments |
| **HR of recurrence (vs. AC only)**  AC with synthetic non-absorbable mesh  AC with synthetic partially absorbable mesh  AC with biological mesh | 0.392  0.291  0.456 | Based on the NMA | NMA; distributions formed by 10,000 iterations.  Given that the longest follow-up of RCTs included in the NMA was clustered around 12-36 months mesh treatment effect was applied for 3 years only. |
| **Baseline risk of recurrence – primary repair**  Surgically managed recurrence – at 20 years  Overall (anatomical) recurrence – at 3 years | 0.090  0.490 | Beta distribution  alpha: 777, beta: 7549  alpha: 40, beta: 42 | Lowenstein 2017.  Rudnicki 2014.  The reported rates were annualised and expressed as annual probabilities. |
| **Risk of surgically managed recurrence (secondary repair) - 12 years** | 0.280 | Beta distribution  alpha: 31, beta: 80 | Denman 2008.  The reported rate was annualised and expressed as an annual probability. |
| **Risk of anatomical recurrence (secondary repair) – 1 year** | 0.509 | Beta distribution  alpha: 54, beta: 52 | Glazener 2016. |
| **Recurrence (less surgically managed recurrence) requiring conservative management** | 0.500 | Beta distribution  SE: 20% of mean values (assumption) | Committee expert opinion. |
| **Risk of mesh extrusion with synthetic mesh**  Year 1  Year 2-3  Year 4-5 | 0.13  0.03  0.03 | Beta distribution  alpha: 11, beta: 71  alpha: 2, beta: 69  alpha: 2, beta: 67 | Jacquetin 2013.  The rates were annualised and expressed as annual probabilities. The probability of mesh extrusion in year 5 was carried over and used in each year for the duration of the model. |
| **Risk ratio of mesh extrusion with biological mesh vs. synthetic mesh** | 0.14 | Log-normal distribution  Fitted using 95% CI (0.03, 0.60) | Guideline systematic review. |
| **Risk of mesh-related pain - 5 years** | 0.05 | Beta distribution  alpha: 4, beta 71 | Laso-Garcia 2017.  The rate was annualised and expressed as the annual probability. The annual probability was applied to each year for the duration of the model. |
| **Proportion of mesh complications that resolve by 2 years** | 0.90 | Beta distribution  SE: 20% of mean value (assumption) | Committee expert opinion. |
| **Procedure costs**  AC only | £2,522 | Normal distribution  SE: 20% of mean value (assumption) | Intermediate open lower genital tract procedures with CC Score 0-2, elective inpatient procedure (MA04C/D); plus 2 consultations with urogynaecologist/gynaecologist (1 non-admitted face-to-face attendance [first] and 1 non-admitted face-to-face attendance [follow-up]); plus haematology and clinical biochemistry, directly accessed pathology services, NHS reference costs 2016/17 (DHSC, 2018). |
| **Mesh costs**  Synthetic non-absorbable mesh  Synthetic partially absorbable mesh  Biological mesh  Mesh kits | £115  £115  £315  £666 | Gamma distribution  SE: 20% of mean values (assumption) | Glazener 2016.  All costs uplifted to 2016/17 prices using the hospital & community health services (HCHS) inflation indexes (Curtis & Burns, 2017). |
| **Cost of revision surgery** | £2,451 | NA (dependant on the above) | Estimated as the average cost of AC, AC & synthetic non-absorbable mesh, AC & synthetic partially absorbable mesh, AC & synthetic absorbable mesh, AC biological mesh, and also apical repair.  For apical repair the unit cost associated with major open lower genital tract procedure with CC score 0-2, elective inpatient procedure (MA03D) was assigned, NHS reference costs 2016/17 (DHSC, 2018).  Plus 2 consultations with urogynaecologist/gynaecologist (1 non-admitted face-to-face attendance [first] and 1 non-admitted face-to-face attendance [follow-up]); plus haematology and clinical biochemistry, directly accessed pathology services (NHS reference costs 2016/17 (DHSC, 2018). |
| **Cost of conservative management (annual)** | £546 | Gamma distribution  alpha: 15.37; beta: 22.54 (taken from Glazener 2016) | Glazener 2016.  The cost were uplifted to 2016/17 prices using the hospital & community health services (HCHS) inflation indexes (Curtis & Burns, 2017). |
| **Cost of being well (following mesh or non-mesh procedure)** | £130 | Log-normal distribution  SE: 20% of mean values (assumption) | One consultant-led non-admitted follow-up face-to-face attendance in gynaecology (WF01C), NHS reference costs 2016/17 (DHSC, 2018). |
| **Cost of managing mesh extrusion (annual)** | £1,207  £80 (persistent) | NA (dependant on distributions associated with treatment probabilities and treatment costs) | Based on the assumption that 57% require surgical revision (Jacquetin 2017), 21% topical oestrogen, and 21% surveillance only.  Surgical revision assigned the unit cost of £1,584 (minor lower genital tract procedures, MA22Z, elective inpatient, NHS reference costs 2016/17 (DHSC, 2018); plus 2 consultations with urogynaecologist/gynaecologist.  For topical oestrogen a unit cost of £24.98 associated with Estriol 0.01% cream 15 g with applicator (Drug Tariff, 2018). The dose of 0.5 g at a time applied daily for 2–3 weeks, then reduced to 1 applicator twice weekly, discontinued every 2–3 months for 4 weeks (BNF, 2018); plus 2 consultations with urogynaecologist/gynaecologist.  For surveillance 6-monthly consultations with urogynaecologist/gynaecologist were modelled.  For urogynaecologist/gynaecologist a consultant-led non-admitted follow-up face-to-face attendance in gynaecology was used, WF01C, NHS reference costs 2016/17 (DHSC, 2018).  Persistent cases incur the same cost as above for the initial management of mesh extrusion. However, since persistent mesh complications last for the duration of the model this cost was apportioned over 15 years to approximate the annual cost associated with managing persistent cases. |
| **Cost of managing pain complications (annual)** | £754  £69 (persistent) | NA (dependant on distributions associated with treatment probabilities and treatment costs) | Committee expert opinion: 95% require pharmacological treatment, 50% topical oestrogen, 10% dilators, 20% psychosexual counselling, 50% physiotherapy, and 5% mesh removal.  Pharmacological treatment: paracetamol (4 g/day), codeine (240mg/day), co-codamol (120/4000 mg/day), and pregabalin (150 mg/day) (BNF, 2018). The unit cost of paracetamol (500 mg, 32 tbs., £0.31), codeine (60mg, 28 tbs., £1.32), co-codamol (15/500 mg, 100 tbs., £4.93) and pregabalin (150 mg, 56 tbs., £5.88) (Drug Tariff, 2018). The average cost of all pharmacological treatments was used.  Vaginal oestrogen costs were estimated as above for the management of mesh extrusion.  For dilators the Femmax device, Medical Devices Technology, was used at a cost of £26.66 (Drug Tariff, 2018).  For psychosexual counselling 6 sessions, 50 min each, delivered by Band 6 therapist at a unit cost of £43/h (Curtis & Burns, 2017).  For physiotherapy 6 sessions, 50 min each, delivered by Band 7 therapist at a unit cost of £53/h (Curtis & Burns, 2018).  Plus all women were modelled to have 1 consultation with consultant urogynaecologist/gynaecologist.  For mesh removal a unit cost of £1,584 associated with minor lower genital tract procedures (MA22Z), elective inpatient, NHS reference costs 2016/17 (DHSC, 2018); plus 2 consultations with urogynaecologist/gynaecologist was assigned.  For urogynaecologist/gynaecologist a consultant-led non-admitted follow-up face-to-face attendance in gynaecology was used, WF01C, NHS reference costs 2016/17 (DHSC, 2018).  For persistent pain 2 additional consultations with pain consultant were modelled.  For pain consultant a consultant-led non-admitted initial and follow-up face-to-face attendance for pain management was used, WF01B/A, NHS reference costs 2016/17 (DHSC, 2018).  Since it was assumed that persistent mesh complications will last for the duration of the model the cost of pain was apportioned over 15 years to approximate the annual cost associated with managing persistent pain complications. |
| **Quality of life adjustments**  Well  Reoperation  Conservative management  Symptomatic POP  Utility decrement - surgically managed complications  Utility decrement - non-surgically managed complications | 0.83  0.65  0.80  0.71  0.19  0.09 | Beta distribution  SE: 20% of mean values (assumption) | Glazener 2016; EQ-5D-3L utility weights.  For mesh extrusion the proportion managed surgically (57%) was obtained from Jacquetin 2017.  For pain, the proportion requiring surgical mesh removal (5%) was based on the committee expert opinion. |
| **Discount rate for costs and outcomes** | 3.5% | NA | NICE (2013) |

*AC: anterior colporrhaphy, CI: confidence interval, EQ-5D-3L: EuroQol five dimensions, three level questionnaire HR: hazard ratio, NA: not applicable, NMA: network meta-analysis, POP: pelvic organ prolapse, RCT: randomised controlled trial, SE: standard error*

**Table S2. Characteristics of the included studies in the NMA and references.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Study ID | Country | POP type | Grade of prolapse (POP-Q staging) | Primary/Secondary repair | Concomitant surgery | Reference |
| 1 | Glazener 2017a | UK | Anterior | ≥2 | Majority primary | As required | Glazener CM, Breeman S, Elders A, Hemming C, Cooper KG, Freeman RM, et al. Mesh, graft, or standard repair for women having primary transvaginal anterior or posterior compartment prolapse surgery: two parallel-group, multicentre, randomised, controlled trials (PROSPECT). *The Lancet.* 2017;389:381-92. STRATIFIED DATA PROVIDED BY AUTHORS |
| 2 | El Nazer 2012 | Egypt | Anterior | ≥2 | Primary only | No additional | El-Nazer MA, Gomaa IA, Ismail Madkour WA, Swidan KH, El-Etriby MA. Anterior colporrhaphy versus repair with mesh for anterior vaginal wall prolapse: a comparative clinical study, *Archives of Gynecology & Obstetrics*. 2012;286:965-72. |
| 3 | Hiltunen 2007 | Finland | Anterior | ≥2 | Majority primary | As required | Hiltunen R, Nieminen K, Takala T, Heiskanen E, Merikari M, Niemi K, et al. Low-weight polypropylene mesh for anterior vaginal wall prolapse: a randomized controlled trial. *Obstetrics and Gynecology*. 2007;110:455-62. |
| 4 | Nguyen 2008 | USA | Anterior | ≥2 | Majority primary | As required | Nguyen JN, Burchette RJ. Outcome after anterior vaginal prolapse repair: a randomized controlled trial. *Obstetrics & Gynecology.* 2008;111;891-8. |
| 5 | Tamanini 2015 | Brazil | Anterior | ≥2 | Unclear | As required | Tamanini JTN, Castro RCDOS, Tamanini JM, Castro RA, Sartori MGF, Girão MJBC. A prospective, randomized, controlled trial of the treatment of anterior vaginal wall prolapse: medium term follow up. *The Journal of urology*. 2015; 193:1298-304. |
| 6 | Turgal 2013 | Turkey | Anterior | ≥2 | All primary | No additional | Turgal M, Sivaslioglu A, Yildiz A, Dolen I. Anatomical and functional assessment of anterior colporrhaphy versus polypropylene mesh surgery in cystocele treatment. *European Journal of Obstetrics, Gynecology, & Reproductive Biology*. 2013;170:555-8. |
| 7 | Delroy 2013 | Brazil | Anterior predominant | ≥2 | Majority primary | As required | Delroy CA, De A Castro R, Dias MM., Feldner Jr, P. C., Bortolini, M. A. T., Girao, M. J. B. C., Sartori, M. G. F., The use of transvaginal synthetic mesh for anterior vaginal wall prolapse repair: A randomized controlled trial, *International Urogynecology Journal.* 2013;24:1899-907. |
| 8 | Dias 2016 | Brazil | Anterior predominant | ≥2 | Majority primary | As required | Dias MM, De A Castro R, Bortolini MAT, Delroy CA, Martins PCF, Girao MJBC, et al. Two-years results of native tissue versus vaginal mesh repair in the treatment of anterior prolapse according to different success criteria: A randomized controlled trial. *Neurourology and Urodynamics*. 2016;35:509-14. |
| 9 | Vollebregt 2011 | Netherlands | Anterior predominant | ≥2 | All primary | As required | Vollebregt A, Fischer K, Gietelink D, van der Vaart CH. Primary surgical repair of anterior vaginal prolapse: a randomised trial comparing anatomical and functional outcome between anterior colporrhaphy and trocar-guided transobturator anterior mesh. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2011;118:1518-27. |
| 10 | Sivaslioglu 2008 | Turkey | Anterior | Unclear | All primary | Not reported | Sivaslioglu AA, Unlubilgin E, Dolen I. A randomized comparison of polypropylene mesh surgery with site-specific surgery in the treatment of cystocoele. *International Urogynecology Journal*. 2008;19:467-71. |
| 11 | Gupta 2014 | India | Anterior | ≥2 | Majority primary | As required | Gupta B, Vaid NB, Suneja A, Guleria K, Jain S. Anterior vaginal prolapse repair: A randomised trial of traditional anterior colporrhaphy and self-tailored mesh repair. *South African journal of obstetrics and gynaecology.* 2014; 20:47-50. |
| 12 | Glazener 2017b | UK | Anterior | ≥2 | All primary | As required | Glazener CM, Breeman S, Elders A, Hemming C, Cooper KG, Freeman RM, et al. Mesh, graft, or standard repair for women having primary transvaginal anterior or posterior compartment prolapse surgery: two parallel-group, multicentre, randomised, controlled trials (PROSPECT). *The Lancet*. 2017;389:381-92. STRATIFIED DATA PROVIDED BY AUTHORS |
| 13 | Gandhi 2005 | USA | Anterior | ≥2 | Unclear | As required | Gandhi S, Goldberg RP, Kwon C, Koduri S, Beaumont JL, Abramov Y, et al. A prospective randomized trial using solvent dehydrated fascia lata for the prevention of recurrent anterior vaginal wall prolapse. *American Journal of Obstetrics & Gynecology*. 2005;192:1649-54. |
| 14 | Guerette 2009 | USA | Anterior | ≥2 | Majority primary | As required | Guerette NL, Peterson TV, Aguirre OA, Vandrie DM, Biller DH, Davila GW. Anterior repair with or without collagen matrix reinforcement: a randomized controlled trial. *Obstetrics & Gynecology*. 2009;114:59-65. |
| 15 | Feldner 2010 | Brazil | Anterior | ≥2 | Majority primary | As required | Feldner Jr PC, Castro RA, Cipolotti LA, Delroy CA, Sartori MGF, Girao MJBC. Anterior vaginal wall prolapse: A randomized controlled trial of SIS graft versus traditional colporrhaphy. *International Urogynecology Journal*. 2010;21:1057-63. |
| 16 | Hviid 2010 | Denmark | Anterior | ≥2 | All primary | No additional | Hviid U, Hviid TVF, Rudnicki M. Porcine skin collagen implants for anterior vaginal wall prolapse: A randomised prospective controlled study. *International Urogynecology Journal*. 2010; 21:529-34. |
| 17 | Robert 2014 | Canada | Anterior | ≥2 | Majority secondary | As required | Robert M, Girard I, Brennand E, Tang S, Birch C, Murphy M, Ross S. Absorbable mesh augmentation compared with no mesh for anterior prolapse: a randomized controlled trial. *Obstetrics & Gynecology*. 2014;123:288-94. |
| 18 | Lyer 2018 | USA | Anterior | ≥2 | Majority primary | As required | Iyer S, Seitz M, Tran A, Scalabrin Reis R, Botros C, Lozo S, et al. Anterior Colporrhaphy With and Without Dermal Allograft: A Randomized Control Trial With Long-Term Follow-Up. *Female Pelvic Medicine & Reconstructive Surgery Female pelvic med*. 2018. |
| 19 | Rudnicki 2014 | Denmark | Anterior | ≥2 | All primary | No additional | Rudnicki M, Laurikainen E, Pogosean R, Kinne I, Jakobsson U, Teleman P. Anterior colporrhaphy compared with collagen-coated transvaginal mesh for anterior vaginal wall prolapse: a randomised controlled trial. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2014;121:102-10. |
| 20 | deTayrac 2013 | France | Anterior | ≥2 | Majority primary | As required | de Tayrac R, Cornille A, Eglin G, Guilbaud O, Mansoor A, Alonso S, et al. Comparison between trans-obturator trans-vaginal mesh and traditional anterior colporrhaphy in the treatment of anterior vaginal wall prolapse: results of a French RCT. *International Urogynecology Journal*. 2013;24:1651-61. |
| 21 | Weber 2001 | USA | Anterior | 1 to 4 (majority 2 or more) | Majority primary | As required | Weber AM, Walters MD, Piedmonte MR, Ballard LA. Anterior colporrhaphy: a randomized trial of three surgical techniques, *American Journal of Obstetrics & Gynecology*. 2001;185: 1299-304. |
| 22 | Menefee 2011 | USA | Anterior | ≥2 | Majority primary | As required | Menefee SA, Dyer KY, Lukacz ES, Simsiman AJ, Luber KM, Nguyen JN. Colporrhaphy compared with mesh or graft-reinforced vaginal paravaginal repair for anterior vaginal wall prolapse: a randomized controlled trial. *Obstetrics & Gynecology.* 2011;118:1337-44. |
| 23 | Yuk 2012 | South Korea | Anterior | ≥2 | Unclear | As required | Yuk JS, Jin CH, Yi KW, Kim T, Hur JY, Shin JH. Anterior Transobturator Polypropylene Mesh in the Correction of Cystocele: 2-Point Method vs 4-Point Method. *Journal of Minimally Invasive Gynecology.* 2012;19:737-41. |
| 24 | Meschia 2007 | Italy | Anterior | ≥2 | All primary | As required | Meschia M, Pifarotti P, Bernasconi F, Magatti F, Riva D, Kocjancic E. Porcine skin collagen implants to prevent anterior vaginal wall prolapse recurrence: a multicenter, randomized study. *Journal of Urology.* 2007;177:192-5. |
| 25 | Natale 2009 | Italy | Anterior | ≥2 | All secondary | As required | Natale F, La Penna C, Padoa A, Agostini M, De Simone E, Cervigni M. A prospective, randomized, controlled study comparing Gynemesh, a synthetic mesh, and Pelvicol, a biologic graft, in the surgical treatment of recurrent cystocele. *International Urogynecology Journal.* 2009;20:75-81. |
| 26 | Farthmann 2013 | Germany | Anterior | ≥2 | Majority primary | As required | Farthmann J, Watermann D, Niesel A, Funfgeld C, Kraus A, Lenz F, et al. Lower exposure rates of partially absorbable mesh compared to nonabsorbable mesh for cystocele treatment: 3-year follow-up of a prospective randomized trial, *International Urogynecology Journal.* 2013;24:749-58. |
| 27 | Minassian 2014 | USA | Anterior | ≥2 | Unclear | As required | Minassian VA, Parekh M, Poplawsky D, Gorman J, Litzy L. Randomized controlled trial comparing two procedures for anterior vaginal wall prolapse. *Neurourology & Urodynamics.* 2014;33:72-7. |

**Table S3. Final data file for the NMA.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| t[,1] | r[,1] | n[,1] | t[,2] | r[,2] | n[,2] | t[,3] | r[,3] | n[,3] | na[] | # | Study ID |
| 1 | 117 | 184 | 2 | 114 | 187 | NA | NA | NA | 2 | # | Glazener 2017(a) |
| 1 | 3 | 23 | 2 | 1 | 21 | NA | NA | NA | 2 | # | El-Nazer 2012 |
| 1 | 37 | 97 | 2 | 7 | 105 | NA | NA | NA | 2 | # | Hiltunen 2007 |
| 1 | 17 | 38 | 2 | 5 | 38 | NA | NA | NA | 2 | # | Nguyen 2008 |
| 1 | 18 | 55 | 2 | 10 | 45 | NA | NA | NA | 2 | # | Tamanini 2015 |
| 1 | 5 | 20 | 2 | 1 | 20 | NA | NA | NA | 2 | # | Turgal 2013 |
| 1 | 17 | 39 | 2 | 7 | 40 | NA | NA | NA | 2 | # | Delroy 2013\* |
| 1 | 28 | 45 | 2 | 26 | 43 | NA | NA | NA | 2 | # | Dias 2016\* |
| 1 | 33 | 64 | 2 | 5 | 61 | NA | NA | NA | 2 | # | Vollebregt 2011 |
| 1 | 12 | 45 | 2 | 4 | 45 | NA | NA | NA | 2 | # | Sivaslioglu 2008 |
| 1 | 2 | 55 | 3 | 1 | 53 | NA | NA | NA | 2 | # | Gupta 2014 |
| 1 | 14 | 21 | 3 | 11 | 25 | NA | NA | NA | 2 | # | Glazener 2017(b) |
| 1 | 23 | 78 | 3 | 16 | 76 | NA | NA | NA | 2 | # | Gandhi 2005 |
| 1 | 10 | 47 | 3 | 5 | 47 | NA | NA | NA | 2 | # | Guerette 2009 |
| 1 | 11 | 27 | 3 | 4 | 29 | NA | NA | NA | 2 | # | Feldner 2010 |
| 1 | 4 | 31 | 3 | 2 | 30 | NA | NA | NA | 2 | # | Hviid 2010 |
| 1 | 27 | 29 | 3 | 19 | 28 | NA | NA | NA | 2 | # | Robert 2014 |
| 1 | 24 | 70 | 3 | 10 | 44 | NA | NA | NA | 2 | # | Lyer 2018 |
| 1 | 40 | 82 | 4 | 6 | 79 | NA | NA | NA | 2 | # | Rudnicki 2014 |
| 1 | 39 | 82 | 4 | 21 | 80 | NA | NA | NA | 2 | # | deTayrac 2013 |
| 1 | 47 | 76 | 5 | 22 | 38 | NA | NA | NA | 2 | # | Webber 2001 |
| 1 | 14 | 32 | 6 | 5 | 36 | 8 | 12 | 31 | 3 | # | Menefee 2011 |
| 2 | 5 | 45 | 2 | 8 | 42 | NA | NA | NA | 2 | # | Yuk 2012 |
| 2 | 20 | 106 | 3 | 7 | 100 | NA | NA | NA | 2 | # | Meschia 2007 |
| 2 | 27 | 96 | 3 | 41 | 94 | NA | NA | NA | 2 | # | Natale 2009 |
| 2 | 15 | 102 | 4 | 12 | 98 | NA | NA | NA | 2 | # | Farthmann 2013 |
| 5 | 8 | 35 | 7 | 10 | 35 | NA | NA | NA | 2 | # | Minassian 2014 |

*Treatment codes: 1 – anterior colporrhaphy (AC), 2 - AC & synthetic non-absorbable mesh, 3 - AC & biological mesh, 4 - AC & synthetic partially absorbable mesh, 5 - AC & synthetic absorbable mesh, 6 - Paravaginal repair & synthetic non-absorbable mesh, 7 - Paravaginal defect repair (abdominal), 8 - Paravaginal repair & biological mesh*

*\*During the peer-review process, it was discovered that Delroy 2013 and Dias 2016 are based on the same RCT. A sensitivity analysis was undertaken where a duplicate study was removed (Delroy 2013). However, due to its small sample and weight in the NMA, the effect estimates were unchanged (Table A4, Supplementary Appendices). As a result, the original dataset and analysis was retained.*

**Table S4. Summary of deterministic sensitivity analyses.** (Results of deterministic sensitivity analyses on NMB using £20,000 per QALY threshold. The results indicate that under most scenarios explored the NMB remains the highest for AC without mesh. For example, when the probability of anatomical recurrence that requires further management is varied between 0.40 and 0.60, NMB for AC is between £190,515-189,656, which is more than NMB for biological mesh of £189,496-188,786, synthetic partially absorbable mesh £187,509-186,848, and synthetic non-absorbable mesh £187,560-186,869).

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **AC** | | **AC plus biological mesh** | | **AC plus synthetic partially absorbable mesh** | | **AC plus synthetic non-absorbable mesh** | |
| **Model input** | **Base case values, and upper and lower values explored in the sensitivity analyses** | **NMB using low estimate** | **NMB using high estimate** | **NMB using low estimate** | **NMB using high estimate** | **NMB using low estimate** | **NMB using high estimate** | **NMB using low estimate** | **NMB using high estimate** |
| **Anatomical recurrence requiring further management** | 0.50 (0.40, 0.60) | £190,515 | £189,656 | £189,496 | £188,786 | £187,509 | £186,848 | £187,560 | £186,869 |
| **Cost mesh erosion (initial)** | £1207 (£965, £1448) | £190,086 | £190,086 | £189,152 | £189,130 | £187,254 | £187,103 | £187,283 | £187,146 |
| **Cost mesh erosion (persistent)** | £80 (£0, £97) | £190,086 | £190,086 | £189,147 | £189,140 | £187,216 | £187,171 | £187,252 | £187,207 |
| **Cost of biological mesh** | £315 (£157, £472) | £190,086 | £190,086 | £189,293 | £188,989 | £187,178 | £187,178 | £187,214 | £187,214 |
| **Cost of conservative management** | £546 (£436, £655) | £190,277 | £189,894 | £189,299 | £188,983 | £187,325 | £187,031 | £187,368 | £187,060 |
| **Cost of non-absorbable mesh** | £115 (£57, £172) | £190,086 | £190,086 | £189,141 | £189,141 | £187,178 | £187,178 | £187,270 | £187,159 |
| **Cost of pain management** | £754 (£604, £905) | £190,086 | £190,086 | £189,157 | £189,125 | £187,194 | £187,162 | £187,231 | £187,198 |
| **Cost of partially absorbable mesh** | £115 (£57, £172) | £190,086 | £190,086 | £189,141 | £189,141 | £187,234 | £187,123 | £187,214 | £187,214 |
| **Cost of persistent pain management** | £69 (£55, £82) | £190,086 | £190,086 | £189,143 | £189,139 | £187,180 | £187,176 | £187,216 | £187,212 |
| **Cost of revision surgery** | £2912 (£2330, £3494) | £190,107 | £190,065 | £189,159 | £189,123 | £187,196 | £187,161 | £187,232 | £187,196 |
| **Cost of well - mesh (one off cost)** | £130 (£104, £156) | £190,114 | £190,057 | £189,179 | £189,103 | £187,217 | £187,140 | £187,253 | £187,176 |
| **Cost of well - non-mesh (one-off cost)** | £130 (£104, £156) | £190,086 | £190,086 | £189,141 | £189,141 | £187,178 | £187,178 | £187,214 | £187,214 |
| **HR of biological mesh (vs. AC)** | 0.46 (0.26, 0.73) | £190,086 | £190,086 | £189,300 | £188,923 | £187,178 | £187,178 | £187,214 | £187,214 |
| **HR of non-absorbable mesh (vs. AC)** | 0.39 (0.24, 0.59) | £190,086 | £190,086 | £189,141 | £189,141 | £187,178 | £187,178 | £187,340 | £187,053 |
| **HR of partially absorbable mesh (vs. AC)** | 0.29 (0.11, 0.62) | £190,086 | £190,086 | £189,141 | £189,141 | £187,330 | £186,909 | £187,214 | £187,214 |
| **Proportion of complications that resolve by year 2** | 0.90 (0.72, 1.00) | £190,086 | £190,086 | £188,670 | £189,403 | £185,501 | £188,110 | £185,512 | £188,160 |
| **Rate of anatomical recurrence (secondary repair) at year 1** | 0.51 (0.41, 0.61) | £190,095 | £190,076 | £189,153 | £189,130 | £187,190 | £187,168 | £187,226 | £187,204 |
| **Rate of surgically managed recurrence (secondary repair) over 12 years** | 0.28 (0.22, 0.34) | £190,087 | £190,084 | £189,142 | £189,140 | £187,179 | £187,177 | £187,216 | £187,213 |
| **RR of mesh erosion with biological (vs. synthetic) mesh** | 0.14 (0.03, 0.6) | £190,086 | £190,086 | £189,457 | £187,878 | £187,178 | £187,178 | £187,214 | £187,214 |
| **The rate of anatomical recurrence (primary repair) over 7 years** | 0.34 (0.27, 0.41) | £190,506 | £189,675 | £189,489 | £188,797 | £187,502 | £186,858 | £187,553 | £186,880 |
| **The rate of mesh extrusion over 15 years** | 0.34 (0.27, 0.41) | £190,086 | £190,086 | £189,221 | £189,062 | £187,685 | £186,687 | £187,697 | £186,747 |
| **The rate of pain complications over 15 years** | 0.15 (0.12, 0.18) | £190,086 | £190,086 | £189,254 | £189,031 | £187,291 | £187,068 | £187,327 | £187,104 |
| **The risk of surgically managed recurrence (primary repair) over 20 years** | 0.09 (0.07, 0.11) | £190,111 | £190,060 | £189,172 | £189,109 | £187,214 | £187,141 | £187,251 | £187,177 |
| **The time mesh extrusion resolves (if it does so) following the appropriate management (months)** | 12 (3, 12) | £190,086 | £190,086 | £189,439 | £189,141 | £189,169 | £187,178 | £189,116 | £187,214 |
| **The time pain complications resolve (if they do so) following appropriate management (months)** | 12 (3, 12) | £190,086 | £190,086 | £189,577 | £189,141 | £187,614 | £187,178 | £187,650 | £187,214 |
| **Treatment effect sustained (years)** | 3 (2, 15) | £190,086 | £190,086 | £189,141 | £189,935 | £187,178 | £188,255 | £187,214 | £188,119 |
| **Utility associated with active POP** | 0.61 (0.55, 0.67) | £190,072 | £190,099 | £189,129 | £189,153 | £187,167 | £187,189 | £187,203 | £187,226 |
| **Utility associated with conservative management** | 0.80 (0.72, 0.88) | £187,289 | £192,882 | £186,830 | £191,452 | £185,027 | £189,329 | £184,964 | £189,464 |
| **Utility associated with reoperation** | 0.65 (0.58, 0.71) | £190,058 | £190,113 | £189,117 | £189,165 | £187,155 | £187,201 | £187,191 | £187,238 |
| **Utility associated with well** | 0.83 (0.75, 0.91) | £173,578 | £206,593 | £172,121 | £206,161 | £169,989 | £204,368 | £170,129 | £204,299 |
| **Utility decrement associated with complications that do not require surgical management** | 0.09 (0.08, 0.10) | £190,086 | £190,086 | £189,196 | £189,087 | £187,285 | £187,071 | £187,319 | £187,110 |
| **Utility decrement associated with complications that require surgical management** | 0.19 (0.17, 0.20) | £190,086 | £190,086 | £189,171 | £189,111 | £187,349 | £187,008 | £187,379 | £187,050 |

*AC: anterior colporrhaphy, NMB: net monetary benefit, QALY: quality-adjusted life year*