Supplementary Table Surveillance colonoscopy management for individual with abnormal findings (detection of at least one adenoma) at colonoscopy

|  |  |
| --- | --- |
| **Colonoscopy findings** | **Follow-up management\*** |
| For individual who was previously detected with one or two non-advanced adenoma(s)/small SSA(s) | |
| No adenomatous polyps or 1-2 non-advanced adenoma(s)/small SSA(s) | 50% return to FOBT screening in 4 years and 50% follow-up with colonoscopy in 10 years# |
| 3-4 non-advanced adenomas/small SSAs or  1 or more advanced adenoma(s)/large SSA(s) | Follow-up with colonoscopy in 3 years |
| 5 or more adenomas/SSAs at any size | Follow-up with colonoscopy in 12 months |
| Invasive cancer | Cancer treatment |
| For individual who was previously detected with three or four non-advanced adenomas/small SSAs or at least one advanced adenoma(s)/large SSA(s) | |
| No adenomatous polyps or 1-2 non-advanced adenoma(s)/small SSA(s) | 50% follow-up with colonoscopy in 3 years 50% follow-up with colonoscopy in 5 years# |
| 3-4 non-advanced adenomas/small SSAs or  1 or more advanced adenoma(s)/large SSA(s) | Follow-up with colonoscopy in 3 years |
| 5 or more adenomas/SSAs at any size | Follow-up with colonoscopy in 12 months |
| Invasive cancer | Cancer treatment |
| For individual who was previously detected with five or more conventional adenomas/ SSAs | |
| No adenomatous polyps or 1-2 non-advanced adenoma(s)/small SSA(s) | Follow-up with colonoscopy in 3 years |
| 3-4 non-advanced adenomas/small SSAs or  1 or more advanced adenoma(s)/large SSA(s) | Follow-up with colonoscopy in 3 years |
| 5 or more adenomas/SSAs at any size | Follow-up with colonoscopy in 12 months |
| Invasive cancer | Cancer treatment |

**\*** Based on the recommendation of Cancer Council Australia Surveillance Colonoscopy Guidelines Working Party. Colonoscopic Surveillance Intervals – Adenomas (3)

# Personal communication with Professor D James B St John on current practice

Supplementary Table Model sstimated discounted lifetime cost, life-years and cost-effectiveness ratio of strategies assuming biennial iFOBT screening at various age ranges, for base case analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Screening age range | Discounted lifetime cost a | Discounted life-years a | CER ($ per LYS) b |
| ***Scenario 1 (perfect adherence)*** |  |  |  |
| No Screening | $1,187 | 37.394 | - |
| 50-74 (CP) | $1,415 | 37.4322 | $5,981 |
| 40-74 | $1,838 | 37.4421 | $13,571 |
| 40-79 | $1,875 | 37.4426 | $14,206 |
| 40-84 | $1,925 | 37.4426 | $15,207 |
| 45-74 | $1,570 | 37.4374 | $8,848 |
| 45-79 | $1,616 | 37.4379 | $9,779 |
| 45-84 | $1,659 | 37.4380 | $10,753 |
| 50-79 | $1,423 | 37.4324 | $6,173 |
| 50-84 | $1,470 | 37.4328 | $7,314 |
| ***Scenario 2 (‘high’ adherence)*** |  |  |  |
| No Screening | $1,187 | 37.394 | - |
| 50-74 (CP) | $1,261 | 37.418 | $3,037 |
| 40-74 | $1,465 | 37.426 | $8,664 |
| 40-79 | $1,491 | 37.427 | $9,328 |
| 40-84 | $1,526 | 37.427 | $10,291 |
| 45-74 | $1,344 | 37.422 | $5,564 |
| 45-79 | $1,370 | 37.423 | $6,240 |
| 45-84 | $1,398 | 37.424 | $7,135 |
| 50-79 | $1,280 | 37.419 | $3,675 |
| 50-84 | $1,316 | 37.419 | $5,083 |
| ***Scenario 3 (‘low’ adherence)*** |  |  |  |
| No Screening | $1,187 | 37.394 | - |
| 50-74 (CP) | $1,236 | 37.411 | $2,984 |
| 40-74 | $1,382 | 37.418 | $8,264 |
| 40-79 | $1,402 | 37.418 | $8,962 |
| 40-84 | $1,435 | 37.418 | $10,299 |
| 45-74 | $1,296 | 37.414 | $5,471 |
| 45-79 | $1,317 | 37.415 | $6,274 |
| 45-84 | $1,344 | 37.415 | $7,536 |
| 50-79 | $1,256 | 37.411 | $4,041 |
| 50-84 | $1,288 | 37.411 | $5,800 |

CER- cost-effectiveness ratio; CP- current program; LYS-life-year saved;

a Discounted by 5% from 40 years

b Compared with no screening

Supplementary Table Summary of strategies identified on the cost-effectiveness frontier in each in each category explored in the one-way sensitivity analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Category | Strategy/ ICER | Strategies on cost-effectiveness frontier | | | | |
| 1st | 2nd | 3rd | 4th | 5th |
| Baseline | Strategy name | 50-74 | 45-74 | 40-74 | 40-79 | 40-84 |
| ICER | ***$5,981*** | ***$29,512*** | *$57,832* | *$72,209* | *$1,016,681* |
| (Alt) lower iFOBT kit cost | Strategy name | 50-74 | 50-79 | 45-74 | 45-79 | 40-74 |
| ICER | ***$5,731*** | ***$17,067*** | ***$31,637*** | *$49,844* | *$54,792* |
| (Alt) higher iFOBT kit cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$6,159*** | ***$22,217*** | ***$32,648*** | *$57,571* | *$104,466* |
| (Alt) lower iFOBT cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$5,733*** | ***$12,591*** | ***$31,990*** | *$53,254* | *$106,348* |
| (Alt) higher iFOBT cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$6,097*** | ***$22,724*** | ***$33,017*** | *$56,690* | *$69,300* |
| (Alt) lower colonoscopy cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$1,535*** | ***$13,739*** | ***$25,796*** | ***$43,326*** | *$65,511* |
| (Alt) higher colonoscopy cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$12,702*** | ***$33,873*** | ***$43,929*** | *$72,217* | *$116,523* |
| (Alt) lower cancer treatment cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$13,791*** | ***$34,349*** | ***$35,429*** | *$59,611* | *$112,305* |
| (Alt) higher cancer treatment cost | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-79 |
| ICER | ***$4,379*** | ***$15,314*** | ***$31,096*** | *$55,601* | *$111,762* |
| (Alt) lower colonoscopy detection rate | Strategy name | 50-74 | 50-79 | 45-74 | 40-79 | 40-84 |
| ICER | ***$7,078*** | ***$19,396*** | ***$35,137*** | *$59,581* | *$994,489* |
| (Alt) higher colonoscopy detection rate | Strategy name | 50-74 | 45-74 | 40-74 | 40-79 | 40-84 |
| ICER | ***$5,164*** | ***$30,626*** | *$54,156* | *$96,983* | *$152,132* |
| (Alt) lower non-fatal colonoscopy adverse event rate | Strategy name | 50-74 | 45-79 | 40-74 | 40-84 | N/A |
| ICER | ***$5,758*** | ***$36,383*** | *$58,238* | *$80,393* | N/A |
| (Alt) higher non-fatal colonoscopy adverse event rate | Strategy name | 50-74 | 50-79 | 45-74 | 40-74 | 40-84 |
| ICER | ***$6,082*** | ***$26,211*** | ***$34,839*** | *$58,624* | *$239,985* |
| (Alt) higher fatal colonoscopy adverse event rate | Strategy name | 50-74 | 45-74 | 45-79 | 40-74 | N/A |
| ICER | ***$6,022*** | ***$36,931*** | ***$41,510*** | *$62,601* | N/A |
| (Alt) lower iFOBT test positive rate | Strategy name | 50-74 | 50-79 | 45-74 | 45-79 | 40-74 |
| ICER | ***$5,281*** | ***$10,690*** | ***$32,178*** | ***$37,418*** | *$52,539* |
| (Alt) higher iFOBT test positive rate | Strategy name | 50-74 | 45-74 | 40-74 | 40-79 | 40-84 |
| ICER | ***$6,632*** | ***$34,114*** | *$60,595* | *$77,032* | *$640,954* |
| (Alt) no improvement in stage-specific cancer survival of screen-detected cancer patients | Strategy name | 50-74 | 45-74 | 40-74 | 40-79 | 40-84 |
| ICER | ***$7,337*** | ***$35,312*** | *$66,066* | *$302,983* | *$1,506,900* |
| (Alt) less aggressive natural history | Strategy name | 50-74 | 50-79 | 45-74 | 45-79 | 40-79 |
| ICER | ***$8,846*** | ***$35,539*** | *$58,208* | *$94,698* | *$117,415* |
| (Alt) most aggressive natural history | Strategy name | 50-74 | 45-74 | 40-74 | 40-79 | 40-84 |
| ICER | ***$3,765*** | ***$11,760*** | ***$21,854*** | *$111,320* | *$307,369* |

ICER- incremental cost-effectiveness ratio;

Incremental cost-effectiveness ratio in bold are below the $50,000/life-year saved willingness-to-pay threshold

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each iFOBT cost $6 per test kit mailed in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,405 | 37.43207 | $5,731 |
| 50-79 | $1,413 | 37.43256 | $17,067 |
| 50-84 | $1,460 | 37.43280 | Extended dominated |
| 45-74 | $1,559 | 37.43717 | $31,637 |
| 45-79 | $1,603 | 37.43805 | $49,844 |
| 45-84 | $1,644 | 37.43808 | Extended dominated |
| 40-74 | $1,822 | 37.44205 | $54,792 |
| 40-79 | $1,858 | 37.44250 | $79,951 |
| 40-84 | $1,905 | 37.44265 | $326,217 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each iFOBT cost $10 per test kit mailed in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,421 | 37.43214 | $6,159 |
| 50-79 | $1,431 | 37.43260 | $22,217 |
| 50-84 | $1,480 | 37.43283 | Extended dominated |
| 45-74 | $1,584 | 37.43726 | $32,648 |
| 45-79 | $1,630 | 37.43793 | Extended dominated |
| 45-84 | $1,672 | 37.43804 | Extended dominated |
| 40-74 | $1,855 | 37.44197 | $57,571 |
| 40-79 | $1,892 | 37.44233 | $104,466 |
| 40-84 | $1,941 | 37.44271 | $129,722 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each iFOBT cost $18 per test kit completed in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,404 | 37.43201 | $5,733 |
| 50-79 | $1,413 | 37.43268 | $12,591 |
| 50-84 | $1,462 | 37.43269 | Extended dominated |
| 45-74 | $1,559 | 37.43725 | $31,990 |
| 45-79 | $1,604 | 37.43796 | Extended dominated |
| 45-84 | $1,644 | 37.43815 | Extended dominated |
| 40-74 | $1,821 | 37.44217 | $53,254 |
| 40-79 | $1,857 | 37.44251 | $106,348 |
| 40-84 | $1,906 | 37.44262 | $481,155 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each iFOBT cost $22 per test kit completed in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,419 | 37.43221 | $6,097 |
| 50-79 | $1,430 | 37.43267 | $22,724 |
| 50-84 | $1,481 | 37.43273 | Extended dominated |
| 45-74 | $1,581 | 37.43726 | $33,017 |
| 45-79 | $1,629 | 37.43796 | Extended dominated |
| 45-84 | $1,668 | 37.43824 | Extended dominated |
| 40-74 | $1,854 | 37.44207 | $56,690 |
| 40-79 | $1,891 | 37.44260 | $69,300 |
| 40-84 | $1,940 | 37.44266 | $792,170 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each colonoscopy cost $1,440 per patient in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,246 | 37.43222 | $1,535 |
| 50-84 | $1,291 | 37.43260 | Dominated |
| 50-79 | $1,251 | 37.43264 | $13,739 |
| 45-74 | $1,371 | 37.43729 | $25,796 |
| 45-79 | $1,400 | 37.43789 | Extended dominated |
| 45-84 | $1,432 | 37.43795 | Extended dominated |
| 40-74 | $1,581 | 37.44214 | $43,326 |
| 40-79 | $1,604 | 37.44249 | $65,511 |
| 40-84 | $1,643 | 37.44266 | $226,729 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming each colonoscopy cost $2,500 per patient in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,671 | 37.43223 | $12,702 |
| 50-79 | $1,686 | 37.43266 | $33,873 |
| 50-84 | $1,753 | 37.43270 | Extended dominated |
| 45-74 | $1,883 | 37.43715 | $43,929 |
| 45-84 | $2,009 | 37.43801 | Dominated |
| 45-79 | $1,952 | 37.43803 | Extended dominated |
| 40-74 | $2,238 | 37.44206 | $72,217 |
| 40-79 | $2,294 | 37.44254 | $116,523 |
| 40-84 | $2,360 | 37.44264 | $682,714 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a lower cancer treatment cost per patient in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $723 | 37.39459 | - |
| 50-74 | $1,241 | 37.43216 | $13,791 |
| 50-84 | $1,317 | 37.43272 | Dominated |
| 50-79 | $1,262 | 37.43278 | $34,349 |
| 45-74 | $1,419 | 37.43719 | $35,429 |
| 45-79 | $1,481 | 37.43803 | Extended dominated |
| 45-84 | $1,526 | 37.43816 | Extended dominated |
| 40-74 | $1,708 | 37.44204 | $59,611 |
| 40-79 | $1,757 | 37.44248 | $112,305 |
| 40-84 | $1,811 | 37.44263 | $368,450 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a higher cancer treatment cost per patient in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,306 | 37.39443 | - |
| 50-74 | $1,471 | 37.43213 | $4,379 |
| 50-79 | $1,479 | 37.43266 | $15,314 |
| 50-84 | $1,527 | 37.43276 | Extended dominated |
| 45-74 | $1,625 | 37.43735 | $31,096 |
| 45-79 | $1,668 | 37.43800 | Extended dominated |
| 45-84 | $1,708 | 37.43809 | Extended dominated |
| 40-74 | $1,888 | 37.44208 | $55,601 |
| 40-79 | $1,923 | 37.44240 | $111,762 |
| 40-84 | $1,970 | 37.44264 | $193,749 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming an iFOBT test characteristics with a lower sensitivity in detecting adenoma in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,377 | 37.43004 | $5,281 |
| 50-79 | $1,383 | 37.43065 | $10,690 |
| 50-84 | $1,429 | 37.43070 | Extended dominated |
| 45-74 | $1,517 | 37.43479 | $32,178 |
| 45-79 | $1,555 | 37.43582 | $37,418 |
| 45-84 | $1,593 | 37.43591 | Extended dominated |
| 40-74 | $1,752 | 37.43957 | $52,539 |
| 40-79 | $1,786 | 37.43997 | $84,373 |
| 40-84 | $1,830 | 37.44034 | $117,020 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming an iFOBT test characteristics with a higher sensitivity in detecting adenoma in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,450 | 37.43382 | $6,632 |
| 50-79 | $1,463 | 37.43414 | Extended dominated |
| 50-84 | $1,515 | 37.43428 | Extended dominated |
| 45-74 | $1,629 | 37.43906 | $34,114 |
| 45-79 | $1,680 | 37.43975 | Extended dominated |
| 45-84 | $1,723 | 37.43977 | Extended dominated |
| 40-74 | $1,926 | 37.44396 | $60,595 |
| 40-79 | $1,966 | 37.44448 | $77,032 |
| 40-84 | $2,018 | 37.44456 | $640,954 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming lower colonoscopy detection rates in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,442 | 37.43018 | $7,078 |
| 50-79 | $1,454 | 37.43080 | $19,396 |
| 50-84 | $1,504 | 37.43094 | Extended dominated |
| 45-74 | $1,605 | 37.43510 | $35,137 |
| 45-79 | $1,652 | 37.43583 | Extended dominated |
| 45-84 | $1,693 | 37.43596 | Extended dominated |
| 40-74 | $1,875 | 37.43962 | Extended dominated |
| 40-79 | $1,910 | 37.44022 | $59,581 |
| 40-84 | $1,961 | 37.44027 | $994,489 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming higher colonoscopy detection rates in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,390 | 37.43337 | $5,164 |
| 50-79 | $1,398 | 37.43362 | Extended dominated |
| 50-84 | $1,446 | 37.43375 | Extended dominated |
| 45-74 | $1,545 | 37.43844 | $30,626 |
| 45-79 | $1,590 | 37.43922 | Extended dominated |
| 45-84 | $1,630 | 37.43933 | Extended dominated |
| 40-74 | $1,812 | 37.44336 | $54,156 |
| 40-79 | $1,848 | 37.44374 | $96,983 |
| 40-84 | $1,894 | 37.44404 | $152,132 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a 0.15% non-fatal colonoscopy adverse event rate in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-79 | $1,409 | 37.43211 | Dominated |
| 50-74 | $1,406 | 37.43221 | $5,758 |
| 50-84 | $1,411 | 37.43224 | Extended dominated |
| 45-74 | $1,594 | 37.43730 | Extended dominated |
| 45-84 | $1,606 | 37.43751 | Dominated |
| 45-79 | $1,603 | 37.43763 | $36,383 |
| 40-79 | $1,864 | 37.44202 | Dominated |
| 40-74 | $1,861 | 37.44206 | $58,238 |
| 40-84 | $1,865 | 37.44211 | $80,393 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a 0.35% non-fatal colonoscopy adverse event rate in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,418 | 37.43203 | $6,082 |
| 50-79 | $1,419 | 37.43207 | $26,211 |
| 50-84 | $1,422 | 37.43212 | Extended dominated |
| 45-74 | $1,604 | 37.43740 | $34,839 |
| 45-79 | $1,616 | 37.43747 | Extended dominated |
| 45-84 | $1,618 | 37.43755 | Extended dominated |
| 40-79 | $1,879 | 37.44196 | Dominated |
| 40-74 | $1,876 | 37.44203 | $58,624 |
| 40-84 | $1,881 | 37.44205 | $239,985 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a 0.01% fatal colonoscopy adverse event rate in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,418 | 37.43203 | $6,082 |
| 50-79 | $1,419 | 37.43207 | $26,211 |
| 50-84 | $1,422 | 37.43212 | Extended dominated |
| 45-74 | $1,604 | 37.43740 | $34,839 |
| 45-79 | $1,616 | 37.43747 | Extended dominated |
| 45-84 | $1,618 | 37.43755 | Extended dominated |
| 40-79 | $1,879 | 37.44196 | Dominated |
| 40-74 | $1,876 | 37.44203 | $58,624 |
| 40-84 | $1,881 | 37.44205 | $239,985 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a less aggressive natural history in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $981 | 37.40961 | - |
| 50-74 | $1,270 | 37.44234 | $8,846 |
| 50-79 | $1,284 | 37.44272 | $35,539 |
| 50-84 | $1,330 | 37.44285 | Extended dominated |
| 45-74 | $1,441 | 37.44543 | $58,208 |
| 45-84 | $1,529 | 37.44594 | Dominated |
| 45-79 | $1,491 | 37.44595 | $94,698 |
| 40-74 | $1,720 | 37.44778 | Extended dominated |
| 40-79 | $1,759 | 37.44824 | $117,415 |
| 40-84 | $1,805 | 37.44845 | $210,677 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming a more aggressive natural history in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,566 | 37.35991 | - |
| 50-74 | $1,749 | 37.40870 | $3,765 |
| 50-84 | $1,807 | 37.40888 | Dominated |
| 50-79 | $1,758 | 37.40899 | Extended dominated |
| 45-74 | $1,875 | 37.41935 | $11,760 |
| 45-84 | $1,963 | 37.42015 | Dominated |
| 45-79 | $1,923 | 37.42021 | Extended dominated |
| 40-74 | $2,110 | 37.43012 | $21,854 |
| 40-79 | $2,149 | 37.43047 | $111,320 |
| 40-84 | $2,198 | 37.43063 | $307,369 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated discounted lifetime costs, discounted life-years and incremental cost-effectiveness ratios when assuming screened-detected cancer patients have the same stage-specific cancer survival rate as per the symptomatically-detected cancer patients in the one-way sensitivity analysis

|  |  |  |  |
| --- | --- | --- | --- |
| Strategy name a | Discounted lifetime cost b | Discounted life-years b | ICER  ($cost/life-years saved) |
| No Screening | $1,187 | 37.39412 | - |
| 50-74 | $1,411 | 37.42458 | $7,337 |
| 50-84 | $1,471 | 37.42469 | Dominated |
| 50-79 | $1,421 | 37.42479 | Extended dominated |
| 45-74 | $1,572 | 37.42916 | $35,312 |
| 45-79 | $1,617 | 37.42939 | Extended dominated |
| 45-84 | $1,657 | 37.42952 | Extended dominated |
| 40-74 | $1,838 | 37.43319 | $66,066 |
| 40-79 | $1,875 | 37.43331 | $302,983 |
| 40-84 | $1,923 | 37.43334 | $1,506,900 |

ICER- incremental cost-effectiveness ratio

a Strategies sorted by life-years

b Value accrued from age 20 to 89 years, discounting at a rate of 5% from age 40 years.

Supplementary Table Model estimated health outcomes per 100,000 persons in the supplementary analysis, in which simulation stop at the age of 100

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Screening age range** | ***Scenario 1 (perfect adherence)*** | | | | ***Scenario 2 (‘high’ adherence)*** | | | | ***Scenario 3 (‘low’ adherence)*** | | | |
| **CRC incidence** | | **CRC mortality** | | **CRC incidence** | | **CRC mortality** | | **CRC incidence** | | **CRC mortality** | |
| **ASRa** | ***% Red. compared with*** NS | **ASRa** | ***% Red. compared with*** NS | **ASRa** | ***% Red. compared with*** NS | **ASRa** | ***% Red. compared with*** NS | **ASRa** | ***% Red. compared with*** NS | **ASRa** | ***% Red. compared with*** NS |
| NS | 63.0 | - | 23.2 | - | 63.0 | - | 23.2 | - | 63.0 | - | 23.2 | - |
| 50-74 (current program) | 31.3 | 50% | 6.4 | 73% | 43.1 | 32% | 11.6 | 50% | 48.8 | 23% | 15.0 | 36% |
| 40-74 | 28.5 | 55% | 5.0 | 79% | 39.8 | 37% | 9.8 | 58% | 45.2 | 28% | 12.9 | 45% |
| 40-79 | 27.0 | 57% | 4.0 | 83% | 38.6 | 39% | 8.9 | 62% | 44.1 | 30% | 12.0 | 48% |
| 40-84 | 26.3 | 58% | 3.4 | 85% | 38.0 | 40% | 8.1 | 65% | 43.7 | 31% | 11.4 | 51% |
| 45-74 | 30.1 | 52% | 5.8 | 75% | 41.5 | 34% | 10.8 | 53% | 47.3 | 25% | 14.1 | 39% |
| 45-79 | 27.9 | 56% | 4.5 | 80% | 39.7 | 37% | 9.4 | 60% | 45.6 | 28% | 12.8 | 45% |
| 45-84 | 27.4 | 57% | 4.1 | 82% | 39.2 | 38% | 8.9 | 62% | 45.3 | 28% | 12.4 | 47% |
| 50-79 | 30.3 | 52% | 5.6 | 76% | 41.7 | 34% | 10.5 | 55% | 47.9 | 24% | 14.1 | 40% |
| 50-84 | 29.5 | 53% | 4.9 | 79% | 41.2 | 35% | 9.9 | 58% | 47.5 | 25% | 13.4 | 42% |

ASR- age-standardised rate; CP – current program; CRC – colorectal cancer; NS- no screening; Red- reduction;

a per 100,000 individuals, assuming 2001 Australian Standard Population across all ages

Supplementary Table Model estimated discounted lifetime cost, life-years and cost-effectiveness ratios of strategies assuming biennial iFOBT screening at various age ranges in the supplementary analysis, in which simulation stop at the age of 100

|  |  |  |  |
| --- | --- | --- | --- |
| Screening age range | Discounted lifetime cost a | Discounted life-years a | CER ($ per LYS) b |
| ***Scenario 1 (perfect adherence)*** |  |  |  |
| No Screening | $1,232 | 37.492 | - |
| 50-74 (CP) | $1,442 | 37.5335 | $5,058 |
| 40-74 | $1,867 | 37.5436 | $12,271 |
| 40-79 | $1,898 | 37.5446 | $12,631 |
| 40-84 | $1,937 | 37.5451 | $13,257 |
| 45-74 | $1,601 | 37.5388 | $7,860 |
| 45-79 | $1,637 | 37.5400 | $8,417 |
| 45-84 | $1,672 | 37.5404 | $9,089 |
| 50-79 | $1,446 | 37.5344 | $5,044 |
| 50-84 | $1,483 | 37.5352 | $5,798 |
| ***Scenario 2 (‘high’ adherence)*** |  |  |  |
| No Screening | $1,232 | 37.492 | - |
| 50-74 (CP) | $1,294 | 37.519 | $2,323 |
| 40-74 | $1,499 | 37.527 | $7,625 |
| 40-79 | $1,518 | 37.528 | $7,967 |
| 40-84 | $1,544 | 37.529 | $8,494 |
| 45-74 | $1,378 | 37.523 | $4,743 |
| 45-79 | $1,397 | 37.525 | $5,042 |
| 45-84 | $1,418 | 37.525 | $5,582 |
| 50-79 | $1,308 | 37.520 | $2,681 |
| 50-84 | $1,334 | 37.521 | $3,542 |
| ***Scenario 3 (‘low’ adherence)*** |  |  |  |
| No Screening | $1,232 | 37.492 | - |
| 50-74 (CP) | $1,272 | 37.510 | $2,191 |
| 40-74 | $1,417 | 37.518 | $7,158 |
| 40-79 | $1,432 | 37.519 | $7,484 |
| 40-84 | $1,457 | 37.519 | $8,240 |
| 45-74 | $1,333 | 37.514 | $4,589 |
| 45-79 | $1,347 | 37.515 | $4,914 |
| 45-84 | $1,367 | 37.516 | $5,691 |
| 50-79 | $1,287 | 37.511 | $2,855 |
| 50-84 | $1,311 | 37.512 | $3,912 |

CER- cost-effectiveness ratio; CP- current program; LYS-life-year saved;

a Discounted by 5% from 40 years

b Compared with no screening