

TABLE 39 Costs of diagnosis and pre-diagnosis monitoring, biopsy complications and cancer treatment by diagnostic strategy: 60-year-old cohort

Strategy	Costs (£)			
	Diagnosis and pre-diagnosis monitoring	Biopsy complications	Cancer treatment	Total
TRUS	773	11	3111	3895
MRI	780	7	3115	3902
MRS	822	5	3125	3952
DCE	873	7	3104	3984
MRI or MRS	892	9	3130	4031
MRI or DCE	928	10	3118	4056

TABLE 40 Costs of diagnosis and pre-diagnosis monitoring, biopsy complications and cancer treatment by diagnostic strategy: 70-year-old cohort

Strategy	Costs (£)			
	Diagnosis and pre-diagnosis monitoring	Biopsy complications	Cancer treatment	Total
TRUS	595	11	2593	3199
MRI	603	7	2596	3206
MRS	644	5	2607	3256
DCE	694	7	2586	3287
MRI or MRS	714	9	2613	3336
MRI or DCE	750	10	2600	3360

TABLE 41 Expected numbers of unnecessary and appropriate biopsies: 60-year-old cohort

Strategy	Expected no. of unnecessary biopsies ^a	Expected no. of appropriate biopsies ^b	Total expected no. of biopsies
TRUS	0.758	0.378	1.137
MRI	0.341	0.338	0.679
MRS	0.182	0.338	0.520
DCE	0.364	0.338	0.702
MRI or MRS	0.523	0.338	0.861
MRI or DCE	0.652	0.338	0.990

a Biopsies taken in men with no detectable prostate cancer.

b Biopsies taken in men with detectable prostate cancer.

TABLE 42 Expected numbers of unnecessary and appropriate biopsies: 70-year-old cohort

Strategy	Expected no. of unnecessary biopsies ^a	Expected no. of appropriate biopsies ^b	Total expected no. of biopsies
TRUS	0.756	0.360	1.116
MRI	0.340	0.320	0.660
MRS	0.181	0.320	0.502
DCE	0.363	0.320	0.683
MRI or MRS	0.522	0.320	0.842
MRI or DCE	0.650	0.320	0.970

a Biopsies taken in men with no detectable prostate cancer.

b Biopsies taken in men with detectable prostate cancer.

TABLE 43 Deterministic sensitivity analysis scenarios using LYs as unit of outcome (men aged 60 years; cancer prevalence 24%)

Strategy	Average cost (£)	Incremental cost (£) ^a	Average LYs	Incremental LYs ^a	ICER ^a (£)	ICER vs common baseline (£)
Scenario 1. Biopsy costs inflated to account for additional pathology time associated with > 10 cores; MRS/MRI costs also adjusted to the NHS reference costs						
Syst. TRUS	4018	b	14.16796	b	b	b
T2-MRI	4024	7	14.16890	0.000936	7198	7198
MRS	4060	35	14.17081	0.001911	18,565	14,826
DCE	4108	49	14.16669	-0.004120	Dominated	Dominated
MRI or MRS	4169	109	14.17203	0.001221	89,122	37,123
MRI or DCE	4205	37	14.16949	-0.002540	Dominated	122,622
Scenario 2. Sensitivity of MRS adjusted to miss only low-grade cancer						
Syst. TRUS	3895	b	14.16796	b	b	b
T2-MRI	3902	7	14.16890	0.000936	7447	7447
MRS	3956	54	14.17243	0.003535	15,214	13,588
DCE	3984	28	14.16669	-0.005750	Dominated	Dominated
MRI or MRS	4031	75	14.17203	-0.00040	Dominated	33,425
MRI or DCE	4056	100	14.16949	-0.00294	Dominated	105,351
Scenario 3. Sensitivity of comparator reduced to 60%						
Syst. TRUS	3882	b	14.15943	b	b	b
T2-MRI	3899	16	14.16768	0.008258	1975	1975
MRS	3948	49	14.16959	0.001911	25,861	6463
DCE	3981	32	14.16547	-0.004120	Dominated	16,216
MRI or MRS	4028	80	14.17082	0.001221	65,219	12,761
MRI or DCE	4053	25	14.16828	-0.002540	Dominated	19,269
Scenario 4. Application of sensitivity/specificity estimates obtained from the indirect comparison (T2-MRI sensitivity 0.84/specificity 0.58; MRS sensitivity 0.92/specificity 0.65)						
Syst. TRUS	3895	b	14.16796	b	b	b
MRI	3895	0	14.16827	0.000309	174	174
MRS	3970	75	14.17080	0.002529	29,604	26,403
DCE	3986	16	14.16669	-0.004110	Dominated	Dominated
MRI or MRS	4029	59	14.17234	0.001548	37,870	30,451
MRI or DCE	4052	23	14.17139	-0.000960	Dominated	45,713

continued

TABLE 43 Deterministic sensitivity analysis scenarios using LYs as unit of outcome (men aged 60 years; cancer prevalence 24%) (continued)

Strategy	Average cost (£)	Incremental cost (£) ^a	Average LYs	Incremental LYs ^a	ICER ^a (£)	ICER vs common baseline (£)
Scenario 5. Biopsy costs uplifted for systematic TRUS (assumes 14-core TRUS biopsy is £86 more costly than MRS/MRI-directed biopsy, and £112 more costly than MRS)						
MRI	3907	b	14.16890	b	b	b
MRS	3955	48	14.17081	0.001911	25,032	25,032
DCE	3991	36	14.16669	-0.004120	Dominated	Dominated
Syst. TRUS	3991	36	14.16796	-0.002850	Dominated	Dominated
MRI or MRS	4034	79	14.17203	0.001221	64,355	40,363
MRI or DCE	4061	27	14.16949	-0.002540	Dominated	258,868
Scenario 6. MRI reduces the risk of biopsy complications by 50%						
Syst. TRUS	3895	b	14.16796	b	b	b
MRI	3899	4	14.16893	0.000968	4284	4284
MRS	3949	50	14.17083	0.001902	26,362	18,917
DCE	3981	32	14.16672	-0.004110	Dominated	Dominated
MRI or MRS	4027	78	14.17207	0.001242	62,656	32,125
MRI or DCE	4052	25	14.16954	-0.002530	Dominated	99,198
Scenario 7. Subsequent repeat biopsy offers have 80% uptake (repeat offer every 12 months for those remaining with undiagnosed cancer)						
Syst. TRUS	3888	b	14.16628	b	b	b
MRI	3895	8	14.16737	0.001091	6891	6891
MRS	3946	51	14.16962	0.003334	22,544	17,420
DCE	3976	30	14.16478	-0.001510	Dominated	Dominated
MRI or MRS	4026	80	14.17106	0.004777	55,739	28,990
MRI or DCE	4050	24	14.16808	0.001796	Dominated	90,288
Scenario 8. LYs discounted at 1.5% per annum						
Syst. TRUS	3895	b	17.18299	b	b	b
MRI	3902	7	17.18416	0.001172	5953	5953
MRS	3952	49	17.18656	0.002393	20,637	15,811
DCE	3984	32	17.18140	-0.005160	Dominated	Dominated
MRI or MRS	4031	80	17.18809	0.001531	52,000	26,684
MRI or DCE	4056	25	17.18491	-0.003180	Dominated	84,112

TABLE 43 Deterministic sensitivity analysis scenarios using LYs as unit of outcome (men aged 60 years; cancer prevalence 24%) (continued)

Strategy	Average cost (£)	Incremental cost (£) ^a	Average LYs	Incremental LYs ^a	ICER ^a (£)	ICER vs common baseline (£)
Scenario 9. Disease progression calibrated to prostate cancer mortality rates observed in the PIVOT trial¹⁴⁹						
Syst. TRUS	3751	b	14.27118	b	b	b
MRI	3758	7	14.27176	0.000580	12,035	12,035
MRS	3808	49	14.27291	0.001145	43,122	32,678
DCE	3840	32	14.27044	-0.002460	Dominated	Dominated
MRI or MRS	3887	80	14.27362	0.000711	112,027	55,830
MRI or DCE	3913	25	14.27210	-0.001520	Dominated	175,577
Scenario 10. Use extended-cores biopsy for all patients negative on MRS/MRI						
Syst. TRUS	3895	b	14.16796	b	b	b
MRI	4007	112	14.17252	0.004559	24,525	24,525
MRS	4087	80	14.17284	0.000318	250,318 ^c	39,251
DCE	4087	80	14.17305	0.000530	150,695	37,668
MRI or MRS	4090	3	14.17215	-0.000900	Dominated	46,462
MRI or DCE	4090	3	14.17262	-0.000420	Dominated	41,839
Syst. TRUS, systematic TRUS-guided extended-cores (15) biopsy.						
a Incremental costs and LYs are estimated in comparison with the next less costly non-dominated strategy.						
b Common baseline.						
c Strategy dominated by combinations of other strategies.						