#### Supplementary Analyses: Outcomes by subgroup

Supplement 1. Histological confirmation of diagnosis

By stage: studies included were all stage patients

By study type: all studies were multicentre hospital networks or state-based registries

By intervention type: all studies were MDM meetings

#### Supplement 2. Clinical staging

By stage: not applicable

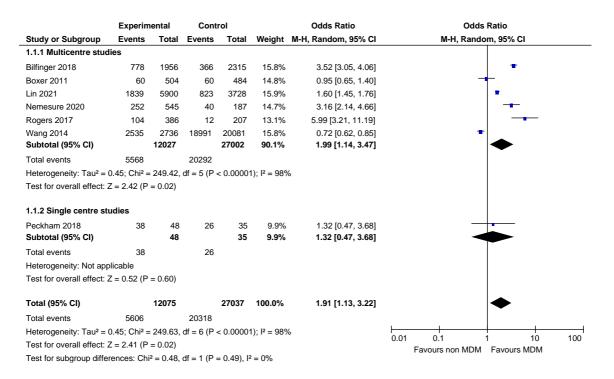
By study type: all studies were multicentre hospital networks or state-based registries

By intervention type: all studies were MDM meetings

#### Supplement 3. Patients who undergo surgery

By stage: studies included were all stage patients

**By study type:** Receipt of surgery was increased by MDM presentation independent of study type OR 1.91(1.13-3.22), p=0.02.



**By intervention type:** Receipt of surgery was increased by MDM presentation independent of intervention type OR 1.91(1.13-3.22), p=0.02.

	Experim	nental	Cont	trol		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total		Total	Weight	M-H, Random, 95% Cl	M-H, Random, 95% Cl
1.1.1 MDM meeting						· · ·	
Bilfinger 2018	778	1956	366	2315	15.8%	3.52 [3.05, 4.06]	-
Boxer 2011	60	504	60	484	14.8%	0.95 [0.65, 1.40]	-+-
Lin 2021	1839	5900	823	3728	15.9%	1.60 [1.45, 1.76]	•
Peckham 2018	38	48	26	35	9.9%	1.32 [0.47, 3.68]	<b>-</b>
Rogers 2017	104	386	12	207	13.1%	5.99 [3.21, 11.19]	
Wang 2014 Subtotal (95% CI)	2535	2736 <b>11530</b>	18991	20081 <b>26850</b>	15.8% <b>85.3%</b>	0.72 [0.62, 0.85] 1.75 [0.99, 3.11]	*
Total events	5354		20278				
Heterogeneity: Tau <sup>2</sup> =	0.46; Chi <sup>2</sup> =	238.91,	df = 5 (P	< 0.0000	1); l² = 98%	6	
Test for overall effect:	Z = 1.91 (P	= 0.06)					
1.1.2 MDM program							
Nemesure 2020	252	545	40	187	14.7%		
Subtotal (95% CI)		545		187	14.7%	3.16 [2.14, 4.66]	$\bullet$
Total events	252		40				
Heterogeneity: Not ap	plicable						
Test for overall effect:	Z = 5.81 (P	< 0.0000	)1)				
Total (95% CI)		12075		27037	100.0%	1.91 [1.13, 3.22]	•
Total events	5606		20318				
Heterogeneity: Tau <sup>2</sup> =	0.45; Chi <sup>2</sup> =	249.63,	df = 6 (P	< 0.0000	1); l² = 98%	6	
Test for overall effect:	Z = 2.41 (P	= 0.02)					0.01 0.1 1 10 10 Favours non MDM Favours MDM
Test for subgroup diffe	erences: Chi	$^{2} = 2.80,$	df = 1 (P	= 0.09), l <sup>2</sup>	<sup>2</sup> = 64.3%		Favours non widwi Favours Midwi
5 1		- /					

### **Receipt of radiotherapy**

By stage: studies included were all stage patients

**By study type:** Receipt of radiotherapy was not affected by MDM presentation independent of study type OR 1.35(0.85-2.17), p=0.21.

	Experim	ental	Cont	rol		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl
2.1.1 Single centre							
Peckham 2018	15	48	14	35	9.4%	0.68 [0.27, 1.70]	
Subtotal (95% CI)		48		35	9.4%	0.68 [0.27, 1.70]	
Total events	15		14				
Heterogeneity: Not app	plicable						
Test for overall effect:	Z = 0.82 (P	= 0.41)					
2.1.2 Multicentre							
Bilfinger 2018	917	1956	1174	2315	14.3%	0.86 [0.76, 0.97]	-
Boxer 2011	325	504	157	484	13.9%	3.78 [2.91, 4.92]	
Bydder 2009	28	81	7	17	8.3%	0.75 [0.26, 2.20]	<b>_</b>
Forrest 2005	41	126	41	117	12.2%	0.89 [0.53, 1.52]	
Lin 2021	2617	5900	1276	3728	14.4%	1.53 [1.41, 1.67]	•
Rogers 2017	85	387	50	207	13.1%	0.88 [0.59, 1.32]	
Wang 2014	1793	2736	7457	20081	14.4%	3.22 [2.96, 3.50]	
Subtotal (95% CI)		11690		26949	90.6%	1.45 [0.89, 2.38]	◆
Total events	5806		10162				
Heterogeneity: Tau <sup>2</sup> =	0.39; Chi <sup>2</sup> =	393.94,	df = 6 (P	< 0.0000	1); l² = 98%	6	
Test for overall effect:	Z = 1.49 (P	= 0.14)					
Total (95% CI)		11738		26984	100.0%	1.35 [0.85, 2.17]	•
Total events	5821		10176				
Heterogeneity: Tau <sup>2</sup> =	0.40; Chi <sup>2</sup> =	398.59,	df = 7 (P	< 0.0000	1); l² = 98%	6	
Test for overall effect:	Z = 1.27 (P	= 0.21)					0.01 0.1 1 10 10 Favours non MDM Favours MDM
Test for subgroup diffe	erences: Chi	<sup>2</sup> = 2.06,	df = 1 (P	= 0.15), l <sup>a</sup>	<sup>2</sup> = 51.3%		

# **By intervention type:** Receipt of radiotherapy was not affected by MDM presentation independent of intervention type OR 1.35(0.85-2.17), p=0.21.

	Experim	ental	Cont	rol		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% Cl	M-H, Random, 95% Cl
2.1.1 MDM meeting							
Bilfinger 2018	917	1956	1174	2315	14.3%	0.86 [0.76, 0.97]	-
Boxer 2011	325	504	157	484	13.9%	3.78 [2.91, 4.92]	-
Bydder 2009	28	81	7	17	8.3%	0.75 [0.26, 2.20]	
Lin 2021	2617	5900	1276	3728	14.4%	1.53 [1.41, 1.67]	•
Peckham 2018	15	48	14	35	9.4%	0.68 [0.27, 1.70]	
Rogers 2017	85	387	50	207	13.1%	0.88 [0.59, 1.32]	
Subtotal (95% CI)		8876		6786	73.4%	1.25 [0.79, 1.97]	◆
Total events	3987		2678				
Heterogeneity: Tau <sup>2</sup> =	0.26; Chi <sup>2</sup> =	129.04,	df = 5 (P -	< 0.0000	1); l² = 96%	6	
Test for overall effect:	Z = 0.96 (P	= 0.34)					
2.1.2 MDM program							
Forrest 2005	41	126	41	117	12.2%	0.89 [0.53, 1.52]	
Wang 2014	1793	2736	7457	20081	14.4%	3.22 [2.96, 3.50]	-
Subtotal (95% CI)		2862		20198	26.6%	1.74 [0.50, 6.11]	
Total events	1834		7498				
Heterogeneity: Tau <sup>2</sup> =	0.78; Chi² =	21.72, c	lf = 1 (P <	0.00001)	; l² = 95%		
Test for overall effect:	Z = 0.87 (P	= 0.38)					
Total (95% CI)		11738		26984	100.0%	1.35 [0.85, 2.17]	•
Total events	5821		10176				
Heterogeneity: Tau <sup>2</sup> =	0.40; Chi <sup>2</sup> =	398.59,	df = 7 (P -	< 0.0000	1); l² = 98%	6	
Test for overall effect:	Z = 1.27 (P	= 0.21)	,				0.01 0.1 1 10 10
	(-	,					Favours non MDM Favours MDM

Test for subgroup differences:  $Chi^2 = 0.24$ , df = 1 (P = 0.62), I<sup>2</sup> = 0%

## **Receipt of chemotherapy**

**By stage:** Receipt of chemotherapy was not affected by MDM presentation independent of stage OR 1.67(0.98-2.83), p=0.06.

	Experim	ental	Cont	rol		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% CI
3.1.1 All stages							
Bilfinger 2018	831	1956	1167	2315	16.2%	0.73 [0.64, 0.82]	+
Boxer 2011	224	504	136	484	15.7%	2.05 [1.57, 2.67]	+
Lin 2021	2890	5900	1667	3728	16.2%	1.19 [1.09, 1.29]	•
Rogers 2017	62	386	31	207	14.4%	1.09 [0.68, 1.74]	
Wang 2014 Subtotal (95% CI)	2026	2736 <b>11482</b>	9689	20081 <b>26815</b>	16.2% <b>78.7%</b>	3.06 [2.80, 3.35] <b>1.43 [0.79, 2.60]</b>	•
Total events	6033		12690				
Heterogeneity: Tau <sup>2</sup> =	0.45; Chi² =	417.98,	df = 4 (P -	< 0.0000	l); l² = 99%	, 0	
Test for overall effect: 2	Z = 1.18 (P	= 0.24)					
3.1.2 Inoperable stage	e						
	<b>e</b> 42	81	6	17	9.6%	1.97 [0.67, 5.85]	<b></b>
Bydder 2009		81 126	6 8	17 117	9.6% 11.6%	1.97 [0.67, 5.85] 4.07 [1.78, 9.33]	
Bydder 2009 Forrest 2005	42						•
Bydder 2009 Forrest 2005 Subtotal (95% CI)	42	126		117	11.6%	4.07 [1.78, 9.33]	•
Bydder 2009 Forrest 2005 <b>Subtotal (95% CI)</b> Total events	42 29 71	126 <b>207</b>	8	117 <b>134</b>	11.6% <b>21.3%</b>	4.07 [1.78, 9.33]	•
Bydder 2009 Forrest 2005 <b>Subtotal (95% CI)</b> Total events Heterogeneity: Tau <sup>2</sup> = 6	42 29 71 0.02; Chi² =	126 <b>207</b> 1.08, df	8	117 <b>134</b>	11.6% <b>21.3%</b>	4.07 [1.78, 9.33]	•
Bydder 2009 Forrest 2005 <b>Subtotal (95% CI)</b> Total events Heterogeneity: Tau <sup>2</sup> = ( Test for overall effect: 2	42 29 71 0.02; Chi² =	126 <b>207</b> 1.08, df	8	117 <b>134</b>	11.6% <b>21.3%</b>	4.07 [1.78, 9.33]	•
Bydder 2009 Forrest 2005 <b>Subtotal (95% CI)</b> Total events Heterogeneity: Tau <sup>2</sup> = 1 Test for overall effect: 2 Total (95% CI)	42 29 71 0.02; Chi² =	126 <b>207</b> 1.08, df = 0.001)	8	117 <b>134</b> ).30); l <sup>2</sup> =	11.6% <b>21.3%</b> 8%	4.07 [1.78, 9.33] <b>3.10 [1.55, 6.17]</b>	•
3.1.2 Inoperable stage Bydder 2009 Forrest 2005 Subtotal (95% CI) Total events Heterogeneity: Tau <sup>2</sup> = ( Total (95% CI) Total events Heterogeneity: Tau <sup>2</sup> = (	42 29 71 0.02; Chi <sup>2</sup> = Z = 3.21 (P 6104	126 <b>207</b> 1.08, df = 0.001) <b>11689</b>	8 14 = 1 (P = 0 12704	117 <b>134</b> 0.30); I <sup>2</sup> = <b>26949</b>	11.6% 21.3% 8% 100.0%	4.07 [1.78, 9.33] 3.10 [1.55, 6.17] 1.67 [0.98, 2.83]	
Bydder 2009 Forrest 2005 <b>Subtotal (95% CI)</b> Total events Heterogeneity: Tau <sup>2</sup> = 1 Test for overall effect: 2 <b>Total (95% CI)</b> Total events	42 29 71 0.02; Chi <sup>2</sup> = Z = 3.21 (P 6104 0.44; Chi <sup>2</sup> =	126 207 1.08, df = 0.001) 11689 423.54,	8 14 = 1 (P = 0 12704	117 <b>134</b> 0.30); I <sup>2</sup> = <b>26949</b>	11.6% 21.3% 8% 100.0%	4.07 [1.78, 9.33] 3.10 [1.55, 6.17] 1.67 [0.98, 2.83]	0.01 0.1 1 10 10 Favours non MDM Favours MDM

# **By study type:** Receipt of chemotherapy was not affected by MDM presentation independent of study type OR 1.67(0.98-2.83), p=0.06.

	Experim	Experimental		Control		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% Cl	M-H, Random, 95% Cl
3.1.1 Single centre							
Bilfinger 2018	831	1956	1167	2315	16.2%	0.73 [0.64, 0.82]	+
Boxer 2011	224	504	136	484	15.7%	2.05 [1.57, 2.67]	
Lin 2021	2890	5900	1667	3728	16.2%	1.19 [1.09, 1.29]	•
Rogers 2017	62	386	31	207	14.4%	1.09 [0.68, 1.74]	
Wang 2014	2026	2736	9689	20081	16.2%	3.06 [2.80, 3.35]	•
Subtotal (95% CI)		11482		26815	78.7%	1.43 [0.79, 2.60]	•
Total events	6033		12690				
3.1.2 Multicentre							
3.1.2 Multicentre							
Bydder 2009	42	81	6	17	9.6%		
Forrest 2005	29	126	8	117	11.6%		
Subtotal (95% CI)		207		134	21.3%	3.10 [1.55, 6.17]	-
Total events	71		14				
Heterogeneity: Tau <sup>2</sup> =	0.02; Chi² =	1.08, df	= 1 (P = 0	0.30); l² =	8%		
Test for overall effect:	Z = 3.21 (P	= 0.001)					
Total (95% CI)		11689		26949	100.0%	1.67 [0.98, 2.83]	◆
Total events	6104		12704				
Heterogeneity: Tau <sup>2</sup> =	0.44; Chi² =	423.54,	df = 6 (P	< 0.0000	1); l² = 99%	6	
Test for overall effect:	Z = 1.90 (P	= 0.06)					0.01 0.1 1 10 10 Favours non MDM Favours MDM
Teet fee euchemeune diffe		2 0 70	-14 4 (D	0.400	2 02 00/		

Test for subgroup differences: Chi² = 2.76, df = 1 (P = 0.10), l² = 63.8\%

## By intervention type: Receipt of chemotherapy was not affected by MDM presentation independent of intervention type OR 1.67(0.98-2.83), p=0.06.

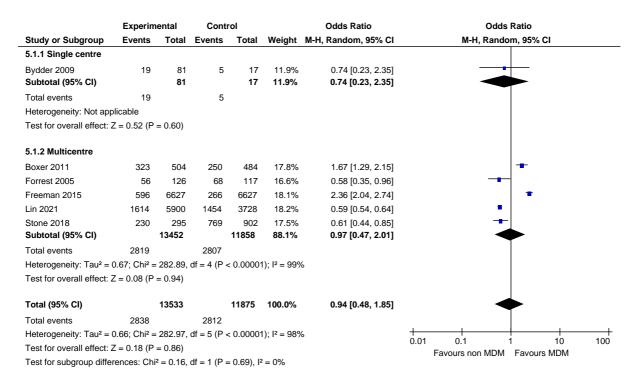
	Experim	ental	Cont	rol		Odds Ratio	Odds Ratio		
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl		
3.1.1 MDM meeting									
Bilfinger 2018	831	1956	1167	2315	16.2%	0.73 [0.64, 0.82]	+		
Boxer 2011	224	504	136	484	15.7%	2.05 [1.57, 2.67]	-		
Bydder 2009	42	81	6	17	9.6%	1.97 [0.67, 5.85]	+		
Lin 2021	2890	5900	1667	3728	16.2%	1.19 [1.09, 1.29]	•		
Rogers 2017	62	386	31	207	14.4%	1.09 [0.68, 1.74]			
Subtotal (95% CI)		8827		6751	72.1%	1.22 [0.84, 1.77]	•		
Total events	4049		3007						
Heterogeneity: Tau <sup>2</sup> =	0.14; Chi <sup>2</sup> =	69.56, c	lf = 4 (P <	0.00001)	; l² = 94%				
Test for overall effect:	Z = 1.04 (P	= 0.30)							
3.1.2 MDM program									
Forrest 2005	29	126	8	117	11.6%	4.07 [1.78, 9.33]			
Wang 2014	2026	2736	9689	20081	16.2%	3.06 [2.80, 3.35]			
Subtotal (95% CI)		2862		20198	27.9%	3.07 [2.81, 3.36]	♦		
Total events	2055		9697						
Heterogeneity: Tau <sup>2</sup> =	0.00; Chi <sup>2</sup> =	0.45, df	= 1 (P = 0	0.50); l <sup>2</sup> =	0%				
Test for overall effect:	Z = 24.62 (F	o < 0.000	01)						
Total (95% CI)		11689		26949	100.0%	1.67 [0.98, 2.83]	•		
Total events	6104		12704						
Heterogeneity: Tau <sup>2</sup> =	0.44; Chi² =	423.54,	df = 6 (P	< 0.0000	1); l² = 99%	6			
Test for overall effect:	Z = 1.90 (P	= 0.06)					0.01 0.1 1 10 100 Favours non MDM Favours MDM		
Test for subaroup diffe	rences: Chi	$^{2} = 22.38$	df = 1 (F	<pre>0.000(</pre>	)1) l <sup>2</sup> = 95	5%			

Test for subgroup differences: Chi<sup>2</sup> = 22.38, df = 1 (P < 0.00001), l<sup>2</sup> = 95.5%

#### Palliative care evaluation

#### By stage: studies included were all stage patients

## **By study type:** Receipt of palliative care was not affected by MDM presentation independent of study type OR 0.94(0.48-1.85), p=0.86.



## **By intervention type:** Receipt of palliative care was not affected by MDM presentation independent of intervention type OR 0.94(0.48-1.85), p=0.86.

	Experim	ental	Cont	rol		Odds Ratio	Odds Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Random, 95% CI	M-H, Random, 95% Cl
5.1.1 MDM meeting							
Boxer 2011	323	504	250	484	17.8%	1.67 [1.29, 2.15]	-
Bydder 2009	19	81	5	17	11.9%	0.74 [0.23, 2.35]	
Freeman 2015	596	6627	266	6627	18.1%	2.36 [2.04, 2.74]	
Lin 2021	1614	5900	1454	3728	18.2%	0.59 [0.54, 0.64]	•
Stone 2018	230	295	769	902	17.5%	0.61 [0.44, 0.85]	
Subtotal (95% CI)		13407		11758	83.4%	1.03 [0.48, 2.21]	<b>•</b>
Total events	2782		2744				
Heterogeneity: Tau <sup>2</sup> =	0.69; Chi² =	280.46,	df = 4 (P	< 0.0000	1); l² = 99%	6	
Test for overall effect:	Z = 0.09 (P	= 0.93)					
5.1.2 MDM program							
Forrest 2005	56	126	68	117	16.6%	0.58 [0.35, 0.96]	
Subtotal (95% CI)		126		117	16.6%	0.58 [0.35, 0.96]	$\blacklozenge$
Total events	56		68				
Heterogeneity: Not app	olicable						
Test for overall effect:	Z = 2.12 (P	= 0.03)					
Total (95% CI)		13533		11875	100.0%	0.94 [0.48, 1.85]	•
Total events	2838		2812				
Heterogeneity: Tau <sup>2</sup> =	0.66; Chi² =	282.97,	df = 5 (P	< 0.0000	1); l² = 98%	6	
	7 0 40 /D	0.00					0.01 0.1 1 10 10
Test for overall effect: 2	L = 0.18 (P)	= 0.86)					Favours non MDM Favours MDM

### Supplement 4. Clinical trial enrolment

By stage: studies included were all stage patients

By study type: all studies are multicentre

By intervention type: all studies were MDM meeting interventions

## Supplement 5. Overall survival

By stage: studies included were all stage patients

By study type: all studies are multicentre

By intervention type: all studies were MDM meeting interventions