

Appendix X – Detailed Travel Impact Assessment for reconfiguration of maternity services

Introduction

As with other impact analysis carried out some changes have been classed as material and others not. In this case a change is classed as significant if the impact on travel time is seen to increase travel time by greater than 5 minutes, and/or increase in cost greater than £1 and/or create a total journey time of over 30 minutes.

Negatively impacted postcodes if services transferred from St Mary's to LGH

If the option of having an MLU at LGH is selected post consultation then activity that might have occurred at St Mary's could potentially occur at LGH MLU. This would increase travel time and for residents of the posts codes shown in the tables below.

Table 1: Postcodes negatively impacted when travelling by car

Postcodes	Increase in travel time/minutes by Car		
	Leicester General Hospital/mins	St Marys hospital/mins	Delta/mins
LE11 1	28	27	1
LE12 5	45	43	2
LE12 7	27	23	4
LE13 0	29	5	24
LE13 1	33	2	31
LE14 2	33	9	24
LE14 3	25	13	12
LE14 4	39	9	30
LE15 6	31	21	10
LE15 7	39	21	18
LE15 8	31	23	8
LE7 4	22	18	4
NG13 0	45	25	20
NG33 5	49	19	30

All apart from LE11 1 and LE7 4 are materially impacted.

Additionally the impact if travelling by public transport is outlined below. Only journeys of less than two hours are considered.

Table 2: Postcodes negatively impacted when travelling by public transport

Postcodes	Additional travel time public transport/mins		
	St Marys Hospital/min	Leicester General Hospital/min	Delta/min
LE130	25	75	50
LE131	10	90	80
LE156	60	105	45
LE7 4	45	60	15

Finally the increase in cost for materially impacted postcodes, when travelling by car are shown on the following page. The cost includes both increased cost of travel and time.

Table 3: Postcodes materially negatively impacted by an increase in costs (time plus car travel)

Postcodes	Increase in cost/£		
	St Marys Hospital/£	Leicester General Hospital/£	Delta/£
LE12 5	£8.23	£8.55	£0.32
LE12 7	£4.42	£4.97	£0.55
LE13 0	£0.76	£5.47	£4.71
LE13 1	£0.32	£6.11	£5.79
LE14 2	£1.66	£6.37	£4.71
LE14 3	£2.47	£5.00	£2.53
LE14 4	£1.74	£7.76	£6.02
LE15 6	£4.01	£6.05	£2.03
LE15 7	£4.19	£7.59	£3.40
LE15 8	£4.59	£6.57	£1.98
NG13 0	£5.00	£9.77	£4.77
NG33 5	£3.87	£9.54	£5.67

Negatively impacted postcodes if services transferred from St Mary's to LRI

In option 2, if there was not a standalone MLU, all births would take place at LRI. The tables below show the postcodes where residents will be negatively impacted in this option based on utilisation patterns in 2014/15.

Table 4: Postcodes negatively impacted if travelling by car

Postcodes	Increase in travel time/minutes by car		
	Leicester Royal Infirmary/mins	St Marys Hospital/mins	Delta/mins
LE11 1	28	27	1
LE12 7	29	23	6
LE13 0	34	5	29
LE13 1	38	2	36
LE14 2	40	9	31
LE14 3	28	13	15
LE14 4	42	9	33
LE15 6	41	21	20
LE15 7	48	21	27
LE15 8	40	23	17
LE15 9	37	30	7
LE7 3	25	22	3
LE7 4	25	18	7
LE7 9	25	22	3
NG13 0	47	25	22
NG33 5	55	19	36

LE11 1, LE7 3 and LE7 9 are not classed as materially impacted and not considered further.

Similar analysis has been carried out for those travelling by public transport.

Table 5: Postcodes negatively impacted if travelling by Public Transport

Postcodes	Additional travel time/mins		
	St Marys Hospital/min	Leicester General Hospital/min	Delta/min
LE130	25	75	50
LE131	10	90	80
LE156	60	105	45
LE7 4	45	60	15

And finally the impact of increased cost has been considered for those postcodes materially negatively impacted if travelling by car.

Table 6: Postcodes materially negatively impacted by an increase in cost (time and travel by car)

Postcodes	Increase in cost/£		
	St Marys Hospital/£	Leicester Royal Infirmary/£	Delta/£
LE12 7	£4.42	£5.29	£0.87
LE13 0	£0.76	£6.40	£5.64
LE13 1	£0.32	£7.04	£6.72
LE14 2	£1.66	£7.53	£5.87
LE14 3	£2.47	£5.44	£2.97
LE14 4	£1.74	£8.20	£6.45
LE15 6	£4.01	£7.65	£3.63
LE15 7	£4.19	£8.98	£4.80
LE15 8	£4.59	£7.97	£3.37
LE15 9	£5.93	£7.18	£1.25
LE7 4	£3.31	£4.57	£1.25
NG13 0	£5.00	£10.09	£5.09
NG33 5	£3.87	£10.58	£6.72

Negatively impacted postcodes if services moved to LRI

In both options obstetrics and neonatology are transferred from LGH to LRI and in the option 2 where there is no MLU at LGH midwifery services would be transferred to LRI also. The tables below show in which postcodes residents will be negatively impacted based on patterns of activity in 2014/15. The services considered when determining the patterns of utilisation for both inpatient stays and outpatient attendances were:

- Midwifery services.
- Obstetrics.
- Neonatology.
- Well babies.

This shift applies to both inpatient and outpatient services.

Table 7: Posts codes negatively impacted if travelling by car

Postcodes	Impact on travel time by car		
	Leicester General Hospital/minutes	Leicester Royal Infirmary/minutes	LRI-LGH/minutes
LE12 6	26	28	2
LE12 7	27	29	2
LE13 0	29	34	5
LE13 1	33	38	5
LE14 2	33	40	7
LE14 3	25	28	3
LE14 4	39	42	3
LE15 6	31	41	10
LE15 7	39	48	9
LE15 8	31	40	9
LE15 9	27	37	10
LE16 7	23	28	5
LE16 8	33	38	5
LE16 9	29	34	5
LE18 1	10	12	2
LE18 2	14	15	1
LE18 3	20	21	1
LE2 0	6	7	1
LE2 1	6	7	1
LE2 2	7	14	7
LE2 3	6	10	4
LE2 4	11	17	6
LE2 5	10	15	5
LE4 6	9	11	2
LE4 7	11	13	2
LE4 8	13	17	4
LE4 9	9	16	7
LE5 0	5	12	7
LE5 1	8	17	9
LE5 2	6	16	10
LE5 3	8	10	2
LE5 4	1	12	11
LE5 5	3	10	7
LE5 6	3	13	10
LE7 1	16	19	3
LE7 2	16	22	6
LE7 3	18	25	7
LE7 4	22	25	3
LE7 9	15	25	10
LE8 0	18	23	5
LE8 8	20	22	2
LE8 9	13	19	6
PE9 3	38	48	10



Of these the following would be materially impacted.

Table 8: Postcodes materially negatively impacted when travelling by car

Postcode	Material impact on travel time by car		
	Leicester General Hospital/minutes	Leicester Royal Infirmary/minutes	Additional Travel time/minutes
LE13 0	29	34	5
LE13 1	33	38	5
LE14 2	33	40	7
LE14 4	39	42	3
LE15 6	31	41	10
LE15 7	39	48	9
LE15 8	31	40	9
LE15 9	27	37	10
LE16 7	23	28	5
LE16 8	33	38	5
LE16 9	29	34	5
LE2 2	7	14	7
LE2 4	11	17	6
LE4 9	9	16	7
LE5 0	5	12	7
LE5 1	8	17	9
LE5 2	6	16	10
LE5 4	1	12	11
LE5 5	3	10	7
LE5 6	3	13	10
LE7 2	16	22	6
LE7 3	18	25	7
LE7 9	15	25	10
LE8 9	13	19	6
PE9 3	38	48	10

A similar analysis has been carried out for travel by public transport where journey times are less than two hours.

Table 9: Posts codes negatively impacted if traveling by public transport

Postcode	Increase in Travel Time by Public Transport/minute		
	Leicester General hospital/minutes	Leicester Royal Infirmary/minutes	LRI-LGH/minutes
LE15 9	75	90	15
LE2 5	25	45	20
LE5 1	25	45	20
LE5 2	15	30	15
LE5 4	10	45	35
LE5 5	15	25	10
LE5 6	15	45	30

Finally the increase in cost of travel by car for materially impacted postcodes has been considered below.

Table 10: Postcodes materially negatively impacted by an increase in cost (time and travel by car)

Postcode	Material increased cost/£ (time and car travel)		
	Leicester General Hospital/£	Leicester Royal Infirmary/£	Increased Cost/£
LE14 2	£6.37	£7.53	£1.2
LE15 6	£6.05	£7.65	£1.6
LE15 7	£7.59	£8.98	£1.4
LE15 8	£6.57	£7.97	£1.4
LE15 9	£5.67	£7.18	£1.5
LE2 2	£1.25	£2.33	£1.1
LE2 4	£1.80	£2.76	£1.0
LE4 9	£1.48	£2.47	£1.0
LE5 0	£0.76	£1.83	£1.1
LE5 1	£1.28	£2.68	£1.4
LE5 2	£0.96	£2.47	£1.5
LE5 4	£0.12	£1.83	£1.7
LE5 5	£0.52	£1.51	£1.0
LE5 6	£0.52	£2.04	£1.5
LE7 3	£3.14	£4.22	£1.1
LE7 9	£2.97	£4.48	£1.5
PE9 3	£7.99	£9.51	£1.5

Potential mitigations for residents of negatively impacted post-codes

Potential alternative services

It is possible that women who might normally use either St Mary's or LGH, if the decision is that there is no MLU at LGH, may choose to access maternity services outside of LLR. The sections below consider for women resident in which postcodes this situation might occur.

Alternative suitable hospitals for women who might use St Mary's

The tables below show the travel time by car to alternative hospitals offering maternity services for women from postcodes, where, based on historical patterns, residents might use St Mary's Birth Centre at Melton Mowbray and would be negatively impacted by this change.

Table 11: Possible alternative hospitals for those who might use St Mary's and be negatively impacted

Postcode	Travel time by car	LLR Hospitals			Travel time to Alternative hospitals by car (shown if closer)		
		St Mary's/min	LGH	LRI	QMC Nottingham	Peterborough and Stamford	Kettering
LE12 7	27	27	29				
LE13 0	5	24	29				
LE13 1	2	33	29				
LE14 2	9	33	40	40			
LE14 3	13	25	28	25			
LE14 4	9	39	42	36			
LE15 6	21	31	41		33	33	
LE15 7	21	39	48		32	39	
LE15 8	23	31	40		34	31	
LE7 4	18	22	25				
NG13	25	45	47	33			
NG33	19	49	55	49		49	



Alternative suitable hospitals for women who might use LGH

Similarly the table below shows alternatives to LRI for women from postcodes where residents might be negatively impacted by services moving from LGH to LRI, based on historical patterns of activity. Closest hospitals are highlighted in green, other possible alternatives in yellow.

Table 12: Possible alternative hospitals for those that might use LGH and be negatively impacted

Postcode	Alternative hospitals by car				
	Leicester General Hospital	Leicester Royal Infirmary	Peterborough & Stamford FT	Kettering General Hospital FT	Nottingham University Hospital
LE12 6	26	28	61	55	22
LE12 7	27	29	66	56	30
LE14 2	33	40	43	45	40
LE14 3	25	28	56	55	25
LE14 4	39	42	48	58	36
LE15 6	31	41	33	33	52
LE15 7	39	48	32	39	54
LE15 8	31	40	34	31	53
LE15 9	27	37	31	23	59
LE16 7	23	28	50	19	56
LE16 8	33	38	45	21	64
LE16 9	29	34	58	21	65
PE9 3	38	48	23	33	66

Mitigation of negative impact for option 1

If the decision is made to move all Women’s services to LRI and have a standalone MLU at LGH (option 1) the impact is largely on women who would presently use St Mary’s for midwifery services and those that would use LGH for obstetrics and neonatal services. The total number of inpatient stays that would be negatively impacted based on historical data is 230 for midwifery services at St Mary’s and 1068 for obstetrics and 9 for neonatal at LGH. Outpatient activity is not impacted for midwifery but is for obstetrics (953) and neonatal (209).

Considering midwifery services there are a number of possible mitigations for the impact of this change including home births, alternative hospitals and the planned improved facilities at LRI. It also needs to be noted that the negative impact is only on the place of birth, as ante-natal and postnatal services will continue to be delivered locally.

The table below summarises the impact on midwifery services and possible mitigations for women living in postcodes that would be negatively impacted by this change. It is not possible to assess the impact on neonatology and well babies by postcode as the data was not recorded by postcode.



This analysis assumes that all women who presently use St Mary’s for midwifery services will chose LGH as opposed to a collocated MLU at LRI, and that all women who presently would use LGH for midwifery services as a collocated MLU will continue to do so as a standalone MLU. As described earlier these are quite broad assumptions.

Table13: Mitigation for negative impact on women who might presently use St Mary’s Birth Centre for midwifery services

Postcode	Inpatient stays for midwifery services in 2014/15	Total travel time to LGH/minutes	Increase versus St Mary’s/minutes	Mitigation by home birth	Alternative closer hospital
LE12 7	16	27	0	Yes	LGH is closest
LE13 0	29	24	19	Yes	LGH is closest
LE 13 1	35	33	31	Yes	LRI closest
LE14 2	4	33	24	Yes	LGH closest
LE14 3	12	25	12	Yes	LGH closest
LE14 4	9	39	30	Yes	QMC Notts
LE15 6	16	31	10	Yes	LGH closest
LE15 7	4	39	18	Yes	Peterborough and Stamford
LE15 8	2	31	8	Yes	LGH closest
NG13 0	1	45	20	Yes	QMC Notts
NG33 5	3	49	30	Yes	LGH closest

The impact and mitigation of obstetrics and neonatology moving from LGH to LRI is described below.

Table 14: Mitigation of negative impact on women who might presently use LGH for obstetrics and neonatology

Postcode	Obstetrics		Neonatology		Travel time by car		Mitigation
	Outpatient attendances	Inpatient stays	Outpatient attendances	Inpatient stays	Total travel time to LRI/minutes	Increase versus LGH/minutes	
LE12 7	44	57	8		29	2	None LRI closest
LE13 0	29	40	5	1	34	5	None LRI closest
LE 13 1	36	39	16	1	38	5	None LRI closest
LE14 2	26	23	4		40	7	None LRI closest
LE14 4	16	9	6		42	3	Could use Nottingham (36mins)
LE15 6	29	30	3		41	10	Could use Pboro and Stamford (33 mins)
LE15 7	12	13	3		48	9	Could use Pboro and Stamford or Kettering (32 and 39 mins)
LE15 8	24	7			40	9	Could use Kettering or Pboro and Stamford (31 and 34 mins)
LE15 9	19	13	1		37	10	Could use Kettering or Pboro and Stamford (23 and 31 mins)
LE16 7	27	32	10		28	5	Could use Kettering



Postcode	Obstetrics		Neonatology		Travel time by car		Mitigation
	Outpatient attendances	Inpatient stays	Outpatient attendances	Inpatient stays	Total travel time to LRI/minutes	Increase versus LGH/minutes	
							(19mins)
LE16 8	22	14			38	5	Could use Kettering (21 mins)
LE16 9	31	36	9		34	5	Could use Kettering (21 minutes)
LE2 2	55	47	5		14	7	None LRI closest
LE 2 4	50	56	8		17	6	None LRI closest
LE 4 9	66	63	17		16	7	None LRI closest
LE5 0	44	62	14		12	7	None LRI closest
LE5 1	68	81	16		17	9	None LRI closest
LE5 2	40	56	13	2	16	10	None LRI closest
LE5 4	37	64	21	1	12	11	None LRI closest
LE5 5	44	75	17	2	10	7	None LRI closest
LE5 6	31	49	13		13	10	None LRI closest
LE7 2	40	45	9		22	6	None LRI closest
LE7 3	39	29	2		25	7	None LRI closest
LE7 9	58	61	5		25	10	None LRI closest
LE8 9	27	30		1	19	6	None LRI closest

Mitigation of negative impact of option 2

The situation if there is no MLU creates an additional impact where all women would need to travel to LRI for maternity services. The impact on obstetrics and neonatology is as shown in figure 38.14.

The figure below summarises how the impact of option 2 on the following groups of women might be mitigated, based on 2014/15 activity data:

- All midwifery inpatient stays at St Mary's Birth Centre transferring to LRI.
- All midwifery inpatient stays at LGH transferring to LRI.
- All midwifery outpatient appointments at LGH transferring to LRI.

Table 15: Potential alternative provision for residents of significantly negatively impacted postcodes

Postcode	Inpatient stays for Midwifery services at St Mary's 2014/15	Inpatient stays for Midwifery services at LGH 2014/15	Outpatient appointments for Midwifery at LGH 2014/15	Total travel time to LRI /minutes	Increase versus St Marys /minutes	Increase versus LGH /minutes	Mitigation
LE12 7	16	34	10	29	6	2	None LRI closest
LE13 0	19	29	6	34	29	5	None LRI closest
LE 13 1	35	21	5	38	36	5	None LRI closest
LE14 2	4	8	5	40	31	7	None LRI closest
Le14 3	12	12	2	28	15	3	None LRI closest
LE14 4	9	3	2	42	33	3	Could use Nottingham (36mins)
LE15 6	16	17	6	41	20	10	Could use Pboro and Stamford (33 mins)
LE15 7	4	6	2	48	27	9	Could use Pboro and Stamford or Kettering (32 and 39)



Postcode	Inpatient stays for Midwifery services at St Mary's 2014/15	Inpatient stays for Midwifery services at LGH 2014/15	Outpatient appointments for Midwifery at LGH 2014/15	Total travel time to LRI /minutes	Increase versus St Marys /minutes	Increase versus LGH /minutes	Mitigation
							mins)
LE15 8	2	5		40	17	9	Could use Kettering or Pboro and Stamford (31 and 34 mins)
LE16 7	2	13	5	28	N/A	5	Could use Kettering (19mins)
LE16 8	5	11	2	38	N/A	5	Could use Kettering (21 mins)
LE16 9	12	17	5	34	N/A	5	Could use Kettering (21 minutes)
LE2 2	5	24	1	14	N/A	7	None LRI closest
LE24	3	29	5	17	N/A	6	None LRI closest
LE4 9	3	46	13	16	N/A	7	None LRI closest
LE5 0	2	30	4	12	N/A	7	None LRI closest
LE5 1	9	49	13	17	N/A	9	None LRI closest
LE5 2	1	34	8	16	N/A	10	None LRI closest
LE5 4	1	39	12	12	N/A	11	None LRI closest
LE5 5	1	47	13	10	N/A	7	None LRI closest
LE5 6	3	23	5	13	N/A	10	None LRI closest



Postcode	Inpatient stays for Midwifery services at St Mary's 2014/15	Inpatient stays for Midwifery services at LGH 2014/15	Outpatient appointments for Midwifery at LGH 2014/15	Total travel time to LRI /minutes	Increase versus St Marys /minutes	Increase versus LGH /minutes	Mitigation
LE7 2	20	32	7	22	N/A	6	None LRI closest
LE7 4	8	9	2	25	7	3	None LRI closest
LE7 3	10	13	2	25	3	7	None LRI closest
LE7 9	7	36	7	25	3	10	None LRI closest
LE8 9	4	16	2	19	N/A	6	None LRI closest

NB - N/A indicates a shorter journey

Summary of impact and mitigations for Options 1 and 2

The impact analysis assessed the impact on residents of postcodes where the impact is felt to be material. That is where an increase in travel time greater than 5 minutes, increase in cost greater than £1 and a total journey time of over 30 minutes would be experienced. Based on this the impacted postcodes, the degree of impact and the mitigation of using an alternative provider outside of LLR are shown below.

The impact of option 1 is lower than the overall impact of option 2 on the materially negatively impacted postcodes as shown in the table below.

Table 16: Summary of impact of option 1 and option 2

Option	Impacted inpatient stays at St Mary's Birth Centre	Impacted inpatient stays at LGH	Impacted outpatient appointments at LGH	Overall impacted activity
Option 1 MLU at LGH	230 midwifery	9 neonatal 1068 obstetrics	215 neonatal 977 obstetrics	2,499
Option 2 No standalone MLU	230 midwifery	9 neonatal 1068 obstetrics 601 Midwifery	215 neonatal 977 obstetrics 146 Midwifery	3,246

Option 2 would see more women having to travel further for services, however this makes the assumption that all women who use LGH midwifery services co-located with obstetrics would use or be able to use a standalone midwifery service. This is potentially not likely to be the case so the impact of option 1 may be higher than this data indicates.



The provision of a standalone midwifery unit at LGH does mitigate the impact of the proposed transfer of services from St Mary's Birth Centre.

A number of additional journeys might be mitigated by the use of alternative services outside of LLR, however some of these are closer today and not selected so it cannot be assumed that all women will see travel time as the main drive of choice or that an increase of a few minutes will be classed as material. A number of other factors need to be taken into account, and the impact of both options can additionally be mitigated by:

- For midwifery services: home births.
- For all obstetrics and midwifery services: the provision of a new specific Women's site at LRI may be attractive.
- For neonatology services: on the same site as the children's hospital.
- Specific short stay / drop off near the Women's hospital for women in labour.
- All antenatal and postnatal services will continue to be delivered locally so the negative impact, in the case of midwifery services, is related to giving birth only.

Conclusion

The residents of a number of postcodes are likely to be negatively impacted by the shift of maternity services. The level of impact as described above depends on which option is selected post consultation; the option to have an MLU at LGH or the option to have all Women's services delivered via LRI.

The provision of an MLU at LGH would if used as now reduce the impact of the change. However this does not take into account that women may use LGH services now for midwifery services because they have a co-located obstetrics unit, and without this some women may choose to go to LRI or other hospitals. There is the potential for significant flows out of LLR as a result of this move but these are mitigated by the provision of a modern Women's hospital at LRI, as evidence shows patients will choose services based on expertise of specialist and waiting times and not just location.