

**Rapid Health Impact Assessment for Royal Liverpool and Broadgreen
University Hospitals Trust - *'A New Health Service for Liverpool, World Class
Hospitals, World Class Services'***

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Introduction and background to the assessment.

The Liverpool Public Health Observatory was commissioned to undertake a Health Impact Assessment (HIA) of the North Mersey Future Healthcare Programme (NMFHP) on behalf of the Merseyside Primary Care Trusts' (PCTs) Directors of Public Health.

This HIA is focused on one of the NMFHP's proposals. It is intended that, once HIAs of all the elements of the NMFHP have been completed, a final report will be produced examining the health impacts of the programme as a whole.

Aims and objectives of this assessment

The overall aim of this HIA was to maximise the health benefits which could result from implementation of the proposals by the Royal Liverpool and Broadgreen Hospitals to redesign its services, develop a new hospital to replace the Royal Liverpool University Hospital (RLUH) on its existing site, and make further investment at Broadgreen Hospital. In order to do this, the following objectives had to be achieved;

- Identify and profile the population groups who will be affected by the proposal.
- Identify the potential positive and negative health impacts of the proposal and set out clearly who will be affected by these impacts.
- Make recommendations for the elimination or mitigation of negative impacts (or compensation for those affected).
- Make recommendations for the maximisation of positive impacts.

What is Health Impact Assessment?

HIA has been defined as:

“A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population”
(ECHP, WHO, 1999).

The purpose of HIA is to assess the health consequences of a policy, programme or project and to use this information in the decision-making process. HIA is a multi-disciplinary activity that cuts across the traditional boundaries of health, public health, social sciences and environmental science and is seen as a useful tool in assessing the health impacts of key policy decisions.

HIA considers both positive and negative impacts. The overall aim of the process is to maximise the positive and minimise the negative outcomes for any proposal. The actions of all public and private organisations have direct or indirect impacts on the health of the nation. HIA is one way of ensuring that the overall, long term health and well-being of the population is one of the main criteria which is routinely taken into account during planning and decision making. As a minimum can we ensure that a decision won't harm people.

The Government's commitment, stated in *Saving Lives – Our Healthier Nation*, is to:

“... make health impact assessment a part of the routine practice of policy-making in Government ... [to] apply the approach right across Government” (Department of Health, 1999, p55).

The Acheson Report (1998) on inequalities in health, recommended that:

“... as part of health impact assessment all policies likely to have a direct or indirect effect on health should be evaluated in terms of their impact on health inequalities”. (p30)

HIAs, therefore, need to consider the distribution of both positive and negative impacts within the population. Those groups who are already multiply disadvantaged and have the worst health status are more vulnerable to the effects of any negative impacts which might result from the proposal under consideration (Acheson, 1998).

There is an emphasis on tackling health inequalities and enabling the full participation of those likely to be affected by the policy or project. Qualitative as well as quantitative methods of investigation can be used in HIA.

There are three types of HIA:

Prospective Health Impact Assessment

Such assessments are carried out during the development of a policy, programme or project to estimate the potential impacts of the proposed activity on the health and well-being of defined human populations. The assessment should contribute to the decision making and planning processes.

Concurrent Health Impact Assessment

Such assessments are carried out during the implementation of the policy, programme or projects to assess how the unfolding activity is affecting the health and well-being of the defined populations. This would allow changes to be made to the activity to maximise health gain opportunities.

Retrospective Health Impact Assessment

Such assessments are carried out after the proposals have been carried out to assess the actual impacts on the health and well-being of the defined populations.

The information obtained from such assessments can contribute to the overall body of knowledge about health impacts and, therefore, help to inform future prospective HIAs.

The focus of Health Impact Assessment

HIA is designed to identify aspects of a proposal or activity that could affect or have affected the health and well-being of defined populations. These health impacts are most likely to occur because the proposal or activity affects the key determinants of health rather than because the proposal impacts directly on human health (though this may happen occasionally, e.g. exposure to physical or chemical hazards).

HIA is therefore focused on the changes to the key determinants of health that are either predicted to occur as a result of the proposed activity or have occurred as a result of the activity (see Box 1). HIA is not concerned with effects that would occur anyway irrespective of the proposal or the activity being assessed. Exceptions to this rule would include the consideration of a 'do nothing option' as part of the terms of reference for the HIA, i.e. "how will the health of a defined population be affected if we continue on our present course and take no action?" Another exception would be the consideration of possible cumulative impacts resulting from the implementation of the proposal in an environment that is already affecting the health of a defined population significantly.

BOX 1: EXAMPLES OF KEY DETERMINANTS OF HEALTH

Economic

- Wealth creation
- Wealth distribution
- Employment opportunities
- Education and training

Social

- Family support
- Community networks
- Public participation / social inclusion
- Community safety

Personal

- Health-related behaviour

Physical

- Natural environment
- Built environment and open space
- Provision of housing

Public service provision

- New health premises and ways of working
- Access
- Transport

All impact assessments, including HIA, are aids to decision-making, not a substitute for political judgement. Indeed, political judgement involves complex considerations that go far beyond the anticipated impacts of a proposal. An impact assessment will not necessarily generate clear-cut conclusions or recommendations. It does, however, provide an important input by informing decision-makers of the consequences of policy choices. Any impact assessment should enable informed political judgements to be made about the proposal and identify trade-offs in achieving competing objectives. The HIA can be seen as an effective and valuable

communication tool. Consultations with interested parties will generate useful discussion and bring in valuable information and analysis.

Proposed changes; *'World Class Hospitals, World Class Services*

This is the last in a 4 part series of HIA, as part of the North Mersey Future Healthcare Programme (NMFCP). The NMFCP came about as a result of a review in 2001 of adult acute hospital services in North Mersey. It aims to redesign the NHS on North Mersey so that services are better able to meet the challenges set out in the NHS Plan and to implement National Service Frameworks.

This HIA focuses specifically on the proposal to rebuild the Royal Liverpool University Hospital (RLUH) on existing site, and to separate planned and emergency services.

Royal Liverpool and Broadgreen University Hospitals Trust has agreed a clinical service delivery model to describe how its services will be provided in the future. This has four key principles:

1. Separating emergency care from planned care to remove competing pressures for resources, such as beds, diagnostics and theatre time.
2. Emergency and specialist care to be based at the Royal Liverpool University Hospital, where there is the full range of clinical and support services to support complex medical and surgical cases, together with the main base for the associated research.
3. A wider range of planned surgery, supported by post operative critical care and with the relevant outpatient clinics, to take place at Broadgreen Hospital to help improve patient experience.
4. A range of services to be provided outside hospital where appropriate to help improve access and increase choice for patients on where they can access their care.

The Royal will thus continue to be the centre for emergency and complex medical and surgical care, including accident and emergency, cancer care, and research with the University of Liverpool. Broadgreen Hospital will focus on planned assessments and treatments, including the new surgical treatment centre, plus rehabilitation. The Dental Hospital stays as the regional specialist, research and training centre for dentistry.

New and improved community health care facilities are to be developed in parallel plans by Liverpool PCT. These will enable outpatient, diagnostic and therapies services to be provided closer to patients' homes. In addition, the PCT and Liverpool Social Services are implementing improved prevention, rehabilitation and community services to support people at home. These aim to assist independence, prevent unnecessary hospital admission, deliver more effective rehabilitation services to enable early discharge from hospital and prevent premature or unnecessary admission to long-term residential care.

The HIA methodology

The scope of the HIA

The scope of the HIA was determined by time and resources constraints.

Although it could be argued that the renewal of the RLUH could have an impact well beyond the immediate area, time and resources dictate that the assessment should identify those geographical areas that are most likely to be affected by the development. The primary focus therefore was The Royal Liverpool hospital, and its immediate surroundings. Secondary focus was Broadgreen Hospital and its immediate surroundings. We also looked at the effect on electoral wards in which The RLUH (Central Ward) and Broadgreen Hospitals (Knotty Ash Ward) are based.

The HIA covered both the construction and operation phase of the development.

Individuals, organisations or departments within organisations were identified as key stakeholders and thus important sources of information in relation to the HIA.

Outputs for the assessment were agreed to be a full report of the HIA, and a summary of findings for participants.

Obtaining information on impacts.

In order to identify the ways in which the proposal could affect the key determinants of health, a half-day stakeholder was held. Representatives from the affected communities were invited to participate. All those who accepted the invitation to participate were sent preparation materials in advance of the workshop. These materials covered aspects of the proposal, a community profile and information about Health Impact Assessment. The background material document is attached as Appendix 2.

During the workshop, participants were taken through a structured process in small facilitated groups, in which they were asked key questions about how the proposal might affect the determinants of health.

Workshops were facilitated by researchers from Liverpool Public Health Observatory and IMPACT (IMPACT being a unit based at the University specialising in HIA). See appendix one for a list of those organisations who were invited to attend, and those who were able to participate.

All those who were invited, and those who attended, were invited to e-mail the facilitators with additional comments that they were unable to make on the day, to add to the report.

Findings.

In total, 40 people participated in the Rapid HIA. Participants were from a wide range of relevant statutory and voluntary sector organisations. RLBUHT staff made up around half of those who attended.

Following analysis of the data provided by stakeholders during the workshops and interviews, a number of positive and negative impacts on the key determinants of health were identified. Impacts were thought likely to occur during construction (including demolition) and operation phases. The following tables set out the positive and negative impacts on the key determinants of health, during the two phases of the project; construction (including demolition) and operational phase.

Criterion used to assess if issues raised in the workshop were included in the matrix below were as follows;

- 1/ Severity – how much of a positive/ negative effect would an impact have
- 2/ Probability – how likely is it that the impact will happen
- 3/ Consensus – the amount of agreement between group members on the likelihood of an impact occurring, and of its severity.
- 4/ Availability of supporting evidence in relevant HIA literature.

Issues raised by only one group member, which were not likely to be severe in impact, and with no supporting evidence in the literature, were not included in the matrix, for example.

Where the impact is negative, mitigation measures are suggested, where appropriate, and where the impact is positive enhancement measures are suggested.

A new health service for Liverpool

World Class Hospitals, World Class Services'

Health Impact Assessment (HIA) Stakeholder Workshop, 18th December 2007, LACE Conference Centre

Likelihood of impacts is rated as:

D- Definite: a demonstrated association in the published literature or thorough

P- Probable: likely to have an impact

S- Speculative: the impact is possible

Positive impacts during construction phase (including demolition phase)

Description of impact	Positive or negative	Determinant (s) affected	Population (s) affected	Enhancement/ Mitigation measures
A large number of jobs will be created during the construction	Positive	Economic - Wealth creation; Wealth	Population of Liverpool and surrounding	The Trust should take all practical steps to ensure that local people are involved in carrying out the construction work. Procurement should include measures to encourage and facilitate employment of 'local people', e.g. advertising posts in local

<p>phase. This may create jobs for the local population, as well as possible training opportunities/ apprenticeships for local people, to ensure that they are sufficiently skilled to be involved in the construction work. (D)</p>		<p>distribution; Employment opportunities; Education and training</p>	<p>areas. Unemployed people People living in poverty.</p>	<p>publications, and ensuring that these are followed through.</p> <p>The Trust should help ensure that local people have the necessary skills to carry out these tasks. This may involve the Trust liaising with JETS teams, in the first instance, to involve local schools/ colleges/ skills council Liverpool1/ Chamber of Commerce, to ensure that the local workforce are sufficiently skilled. Historically, the local workforce has been insufficiently skilled to fill certain roles. It may be possible to create apprenticeships for people to work on this project, but it is also important that jobs are available for people at the end of their apprenticeship. Open days could be held for local companies.</p> <p>The Trust should look review experiences of NHS Trust in Greater Manchester, where there are examples of local people being employed in a similar project.</p>
<p>Opportunities to provide more services at Broadgreen – there is additional capacity. (D)</p>	<p>Positive</p>	<p>Public service provision – access; New health premises and ways of working</p>		

Negative impacts during construction phase (including demolition phase).

Description of impact	Positive or negative	Determinant (s) affected	Population (s) affected	Enhancement/ Mitigation measures
<p>The construction work will have an impact on access to the site.</p> <p>1/ Access to the Royal Liverpool site and surrounding areas. (D)</p> <p>Links in with transport (see below)</p> <p>Access to University of Liverpool will also be affected. (P)</p>	<p>Negative</p>	<p>Public service provision – Access; Transport; New health premises and ways of working.</p> <p>Physical- Natural environment; Built environment and open space.</p>	<p>Local residents.</p> <p>School-children.</p> <p>Patients and visitors RLUH</p> <p>University – staff students and visitors.</p> <p>Local businesses.</p>	<p>1/ The RLBUHT needs to develop a clear transport plan, addressing impacts on staff, patients and visitors, as well as the local population.</p> <p>The Trust needs to liaise with Mersey Travel encourage people to use transport other than cars. Greener methods of public transport need to be considered, e.g. electric buses, trams. Some of the buses currently in use may act as an additional pollutant. Bus stops need to be near enough to The Royal, and to the department that people need to get to. Buses/trains also need to run at times that are convenient – particularly for staff on early/late shifts.</p> <p>Re-routing of buses may be necessary to co-ordinate with the most convenient pedestrian routes to the hospital.</p> <p>For RLUH staff, this might also include provision for cyclists, e.g. showers, secure places to put bikes etc. Roads may need improving before people are able to cycle down them. Car</p>

				<p>sharing might be another option. Also walk to work schemes, encouraging 12 months staff train/ bus ticket purchases.</p> <p>For residents, this might include the introduction of resident-only parking in the roads around The Royal. Currently patients/ visitors park on the surrounding roads to avoid paying parking charges within the hospital grounds.</p> <p>For patients/ staff, this might include Park and Ride scheme- currently being trailed at Broadgreen Hospital.</p> <p>These sorts of changes take time to put into place, so it is important that RLBH start the process as early as possible.</p> <p>2/ To link into this plan, it is important to have regular meetings between key groups e.g. Highways Agency/ Local Police/ Social Services/ Merseytravel/ bus services manager.</p> <p>3/ Communication with the local community is vital. There needs to be a communication plan. Communicate through hospital website/ local paper/ local radio etc. Links with the City Council should be built upon.</p> <p>4/ Profiling is important to look at current usage – how many journeys to patients/ relatives/ staff currently make to the Royal, and how?</p>
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<p>Car park charges in the new multi- storey car park may, depending on their level, lead to concerns about equity, with those least able to afford new charges being hardest hit. (S)</p>				<p>Car parking prices should not be prohibitive to patients and visitors on benefits and low incomes.</p>
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<p>Access for ambulances may be affected due to traffic. (S)</p> <p>The existing disabled car parks will have to be relocated prior to the construction phase. 800 existing on-site staff parking spaces will be also be lost to the construction scheme. The total number of car parking spaces is planned to reduce in the long term. (D)</p> <p>Existing public transport may be disrupted by the construction e.g. buses caught up in</p>				<p>Ambulances could have a separate entrance to the RLUH site.</p> <p>Disabled drop-off points to be established.</p> <p>Clear signage is important, also experience from building work at Whiston Hospital shows that a physical presence is helpful – needs to be someone to direct people around the site.</p>
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<p>heavier traffic. (S)</p> <p>Access to bus stops may be affected by the construction, meaning people have further to walk and may be deterred from using public transport</p> <p>Ongoing transport problems include</p> <ul style="list-style-type: none"> • The relatively long walk uphill from Lime Street Station to the RLH, for those travelling by train • The entrance to Broadgreen Hospital is a problem, with cars queuing right down the road in the morning 				<p>See further information re: relocation of certain services/ operations to Broadgreen Hospital, under 'negative impacts of Operational phase'</p>
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<p>waiting to get in – the situation was reported to be quite dangerous at times</p> <ul style="list-style-type: none"> • Broadgreen Hospital is difficult to get to on public transport – the bus service is limited. However, services are more likely to be provided in the community closer to where patients live, reducing the need for travel. <p>(P)</p>	<p>Uncertain – there are both positive and negative elements.</p>			
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<p>Communication – it was feared that the construction phase could feature one-way information bulletins from The Royal, followed by unfavourable reactions from the public via the local press/ media. (S)</p>	Negative	<p>Physical – natural environment</p> <p>Social – public participation/ social inclusion</p>	<p>Local residents</p> <p>RLUH staff/ patients/ visitors</p>	<p>A two-way communication process needs to be in place, for staff/ patients/ relatives to feed in their comments on the negative and positive impacts, and their suggestions for how these can be mitigated/ enhanced. This should be an ongoing process, as the construction/ demolition phase proceeds.</p>
<p>Effect on air quality from construction – dust etc. This is also going to be particularly relevant in the demolition phase. (P)</p>	Negative	<p>Physical – natural environment</p>	<p>Local residents.</p> <p>School-children</p> <p>Patients and visitors</p> <p>RLUH</p> <p>University –</p>	<p>These potential impacts have been covered in depth in the Environmental Impact Assessment submitted with the Trust's outline planning application. Impact on air quality was assessed as possible, but not significant. Arrangements for dust control etc will be agreed as part of the scheme development.</p>

			<p>staff students and visitors</p> <p>Local businesses</p>	
<p>Noise from construction of the new building, and from the additional traffic, will affect the health of the population. This is relevant in both the construction and the demolition phase.</p> <p>(S)</p>	Negative	Physical – natural environment	<p>Local residents</p> <p>Patients and visitors</p> <p>Local businesses</p>	<p>These potential impacts have been covered in depth in the Environmental Impact Assessment submitted with the Trust's outline planning application. Noise impacts were assessed as not significant.</p>
<p>Danger from removal of asbestos during the demolition phase.</p> <p>(S)</p>	Negative	Physical – natural environment	<p>Local residents</p> <p>Patients and visitors</p> <p>Contractors working on the site</p>	<p>Legislative requirements will be followed. Adverse health impacts are extremely unlikely.</p>

<p>Dust and dirt</p> <p>Lorries associated with the construction work going on and off the site will create mud (in wet weather) and dust (in dry weather) in surrounding areas. Despite the demolition area being blocked off and having a separate entrance, there will still be dust and dirt on surrounding pavements. This will be carried in by people entering the hospital on foot. It will also be a problem for local residents and people leaving local schools, with small children in buggies etc. (P)</p>	<p>Negative</p>	<p>Physical – natural environment</p>	<p>Patients/ relatives/ staff RLH</p> <p>Local residents</p>	<p>Ensure all pedestrian routes are kept free from mud and puddles.</p>
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<p>Security on the site needs to be considered during the construction and demolition phase. There is a potential danger of local people accessing the site and sustaining injury. There may also be problems with vandalism on the site, and homeless people using it as a place to sleep. (S)</p>	<p>Negative</p>	<p>Social-Community safety</p>	<p>Local population Homeless people Staff, patients and visitors to the site</p>	<p>Site needs to be fenced and have adequate security. Importance of communicating with the local community what is going on. A whole systems approach would maximise the involvement of the local community, and it is important to work with them to find alternative activities/ pastimes.</p>
<p>It may be difficult to maintain security on the site as construction workers will be coming in and out of the hospital. (S)</p>	<p>Negative</p>	<p>Social – Community Safety</p>	<p>Local residents Staff, patients and visitors to the site.</p>	<p>Construction/ demolition sites will have totally separate entrances, with separate facilities for their workforce.</p>

<p>Relationship between the University and RLH needs to be considered, as this could be adversely affected by the renewal, with the demolition of the Duncan building etc.</p> <p>(S)</p>	Negative	<p>Economic – Education and training.</p> <p>Social – Community networks.</p>	<p>University and hospital staff.</p> <p>Health care staff in training</p>	<p>The Trust should work with the University to ensure that effective operational links are maintained.</p>
<p>Building height – the new hospital will be 7 storeys high – much of the ground floor will be in shadow. (S)</p>	Negative	<p>Physical – Built environment and open space.</p>	<p>Patients/ visitors/ staff RLH</p>	<p>The building will have a grid design with large courtyards to assist with daylight.</p>
<p>Disruption caused by the building work may affect patient care – there is the possibility that operations may be cancelled etc. Patients may also be reluctant to attend appointments due to the inconvenience of</p>	Negative	<p>Public service provision – Access</p> <p>Physical – Natural environment; Built environment and open</p>	<p>Patients/ visitors/ staff RLH</p>	<p>Such disruption should be avoided through careful operational planning.</p>

having to attend during building work. (S)		space.		
There are currently no definitive plans to include a cancer centre within the new Royal, although the trust has made proposals. If the centre was not provided, this is likely to have a negative impact on the image of the city, as Liverpool is the only UK city without such a centre. (S)	Negative	Public Service Provision – Access; New health premises and ways of working	Patients and relatives Local population	It was felt that this would be a good opportunity to include a cancer centre, as part of the plans for the new Royal Liverpool Hospital. This would have a positive effect on the image of the City.

Impacts during operational phase.

Positive impacts during operational phase.

Description of impact	Positive or negative	Determinants affected	Population(s) affected	Enhancement/ mitigation measures
There will be green space created as part of the new hospital – important that this is protected as is beneficial to the well-being of patients in the hospital, staff and local residents. (D)	Positive	Physical – built environment and open space. Public Service Provision – Access; New health premises and ways of working	Patients RLH Relatives RLH Staff RLH Local population	It was felt that it is important to protect the ‘green space’ that will be created as part of the new hospital. This space adds to feelings of well-being in patients and aids their recovery. It is also beneficial to relatives, staff and local residents. The Trust should ensure that adequate green space is maintained.
There are opportunities to consider which	Positive	Public service provision – access; New health	Local population	Review which services need to be provided as

services need to be provided as part of the acute hospital e.g. audiology. (D) .		premises and ways of working.		part of the acute hospital. If services can be provided in the community, it has the additional benefit that patients do not have to access the RLUH site during the construction phase.
More single rooms are going to be available as part of the new build, in order to help maintain patient privacy and dignity. This will also allow patients easier interaction with visitors. (D)	Positive	Public service provision – access; New health premises and ways of working. Social – family support	Patients RLUH Visitors RLUH Staff RLUH	This will have to be carefully managed as patients can feel isolated when being nursed in single rooms. Nurses may not be able to manage patients as effectively, which may lead to increased stress for them, and this will need to be monitored.
There are opportunities to make the new hospital easy to navigate – difficulty finding the way around has been a commonly	Positive	Public service provision – Access; New health premises and ways of working Physical – Built	Patients/ visitors/ staff RLH	The layout of the new hospital should be designed for easy wayfinding. Colour coding different departments/ services

<p>voiced problem at the current RLUH.</p> <p>(D)</p>		<p>environment and open space</p>		<p>within the hospital was suggested. The same colours could be used in both hospitals so they become more familiar to patients/ visitors, particularly those who need to attend more than one hospital.</p>
<p>The new hospital could aim to be a model of best practice of a health promoting hospital.</p> <p>(P)</p>	<p>Positive</p>	<p>Public service provision – Access, New health premises and ways of working</p> <p>Physical – Natural environment; Built environment and open space</p> <p>Social – Public participation and social inclusion</p>	<p>Patients/ visitors/ staff RLH</p>	<p>Ensure the new hospital functions according to the ‘Top tips for healthy hospitals’ (LPHO Report, 2006). This would include using the new building as an opportunity for introducing pleasant, light, airy wards, all with views of well-maintained greenery – research shows that the latter is a factor in helping to facilitate recovery (Ulrich, 1984). Incorporate artwork,</p>

				preferably produced locally, reflecting the cultural diversity of the city. The addition of an artist to the hospital design team would help. Artwork has the added advantage of being useful as a landmark, helping people find their way around a building. It is also important that provision is available for members of religious faiths to be able to express this e.g. provision of a chapel etc, to reflect religious and cultural diversity in the city.
A happy workforce is a more effective workforce (P)	Positive	Personal – Health-related behaviour Physical – Natural environment; Built environment and open	RLH Staff/ patients/ visitors	The new hospital provides an opportunity to improve the health of the workplace – also covered in the ‘top tips for healthy hospitals’

		space		report (LPHO, 2006). This could include consideration of providing a staff gym that could also be used by members of the public
Patient access to telephones and TV's can be enhanced as part of the renewal (P)	Positive	<p>Personal – Health-related behaviour</p> <p>Social- Family support; Community networks; Public participation/ social inclusion</p> <p>Public service provision – New health premises and ways of working</p>	RLH patients/ visitors/ staff	Use the new hospital to introduce a simpler system, at much reduced cost to the patient, of access to telephones, TV's and other audio-visual facilities. Consider mobile phone use apart from where these would obviously interfere with electrical equipment being used in the area – possibly more research is needed in this area.
New technology will be available in the new hospital, which will have a positive impact on	Positive	Public service provision- Access; New health premises and ways of		There is a need for training of staff in new technology, for staff who may not be familiar with

<p>patient care e.g. earlier diagnosis of cancer etc.</p> <p>(P)</p>		<p>working</p>		<p>them. It is also necessary to consider the possibility that some members of staff – e.g. admin staff- may leave posts because they do not wish to use new technology.</p>
<p>There are opportunities to implement new models of care in the new hospital. With one overall model of care, health care providers across the city can work together. (D)</p>	<p>Positive</p>	<p>Public service provision – Access; New health premises and ways of working</p>		
<p>There are opportunities for increasing the flexibility of services available as part of the changes. Services such as operations could be provided 7 days a week – there has been good feedback from patients for providing operations</p>	<p>Positive</p>	<p>Public service provision – access; New health premises and ways of working</p>		<p>There may be a potential negative effect on staff who potentially may have to start working weekends. Staff may have issue with childcare, or travel to work at the weekends, for example – the trust needs to look at ways to</p>

at weekends. (D)				alleviate these issues. Consultation with staff about these changes is vital.
Security will be improved as part of the new hospital. Increased security has been requested by staff and patients in the past. (D)	Positive	Public service provision – access; New health premises and ways of working Social – Community safety		The new hospital will be designed for safety and security, including CCTV .

Negative impacts during operational phase.

Description of impact	Positive or negative	Determinant (s) affected	Population(s) affected	Enhancement/ mitigation measures
<p>There are going to be about 150 fewer beds in the new proposed hospital. This could mean a shortfall of hospital provision for patients – and increase pressure on community services. Length of hospital stay is decreasing, which may reduce need for beds, but conversely the range of services available has increased, which may increase need for beds. (S)</p> <p>Changing culture for patients – they need to know which out of</p>	<p>Negative</p>	<p>Public service provision – Access; New health premises and ways of working</p>	<p>Population of Liverpool and the North West</p>	<p>There are plans for some of the space to be flexible as part of the new hospital – so office space could be converted into bed space if necessary. However, there is a need to look at how quickly and how easily this could be done.</p> <p>It is likely that this decrease will increase pressure on community care, so this will need to be resourced appropriately.</p> <p>There is a need for better shared</p>

<p>hospital services to use when. (D). Ambulance service has to redirect very sick children from walk-in centres</p> <p>Also the culture of nurse training is changing, as this will be increasingly ward based. Nursing staff at the Royal will also be managing more acute patients, which is potentially a more stressful role.</p> <p>The pressure to get patients out of hospital more quickly will reduce the opportunities for hospital staff to consider their caring, supporting role. It will also mean less opportunity for the hospital therapists to become involved with</p>				<p>communication between PCT, LA Social Services, Acute Trust Board, NW Ambulance Service e.g. Dialogue on resources</p> <p>The hospital needs to run more efficiently, in order to save on nights spent in hospital.</p> <p>Workforce planning skills are needed for a range of staff to move across a range of settings.</p> <p>Although contact time with patients will be reduced, the caring role will still need to be emphasised.</p>
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patients. (S)				
Threat of loss of data as dependent on information technology to run. Competition with other hospitals. (S)	Negative	Public service provision – New health premises and ways of working	Patients at Royal Liverpool Hospital	
It is also important to consider access to the Broadgreen site, as the service provision there changes. If the Royal is to concentrate on more serious operations and emergencies, and Broadgreen on routine operations and rehabilitation, and other activities are moved to GP surgeries and the community, this changing way of delivering health care will have impacts on transport for patients, visitors and staff. The Royal is well located in	Uncertain – there are both positive and negative elements.	Public service provision – Access; New health premises and ways of working		See also ‘access’ section, under ‘negative impacts during construction phase’, for further suggestions on ways of improving transport services. There is an argument that the health sector should be working to provide more financial or transport support to help patient access these health service, in order to avoid increasing inequalities in health. Mainstream core bus routes may not be suitable for those patients trying to access

<p>the city centre with good public transport access, but Broadgreen and community health centres may be less well served by public transport. There is a risk that increasing number of users will need to travel to Broadgreen by car, unless transport systems are improved.</p> <p>Conversely, if more services are provided in the community, closer to where patients live, with an increase in services such as one-stop clinics, transport costs are likely to decrease for certain groups. (P)</p>				<p>Broadgreen Hospital. There may be a greater role for Non-Emergency Patient Transport Services. This will have financial costs. Capacity will need to be built up to deliver transport in this new demand responsive way. There may be opportunities to integrate non-emergency patient transport, council social services transport, council education transport, community services transport, taxis and services like Merseytravel's Merseylink so that a holistic transport service is provided, involving both demand responsive transport and traditional mainstream public</p>
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<p>The new model of care, involving early supported discharges, will result in changes in car parking requirements for some staff. Broadgreen Hospital staff going to and from the community throughout the day will have problems parking at the hospital. (P)</p>			<p>transport. At the moment patients from the same areas travel separately to hospitals by Merseylink, taxis etc – resources could be used more effectively if patients were to travel together, and organisations worked more closely together.</p> <p>Consider having designated peripatetic parking bays at Broadgreen.</p>
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<p>Some services are moving from the Royal to Broadgreen, which will involve staff moving there too. Whilst some staff will welcome the move, others prefer to work at the Royal – due to home commitments, proximity to home/ transport links/ city centre etc. Some members of staff may be moving from the royal after many years service. Stressors associated with change of employer etc. Staff moving to Broadgreen may go through the inconvenience of the construction work, but not have the benefit of moving into the new building. (S)</p>	<p>Negative</p>	<p>Economic – Employment opportunities</p> <p>Social – Community networks</p> <p>Public service provision – Access; Transport; New health premises and ways of working</p>		<p>It is important to of communicate about the changes with staff – there should be a two-way communication process. Operational managers need to be giving staff the same messages.</p>
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Discussion.

The greatest potential for negative impacts relates to access to the Royal Liverpool site and surrounding areas, particularly during the construction phase. There are also potential negative impacts relating to access to the Broadgreen site, as different services move to this less central site. A clear transport plan, for staff, patients, and visitors, as well as joint working with relevant agencies such as the Highways and Merseytravel, are felt to be important mitigating factors, as is two-way communication with the local community. Negative impacts during the construction phase also include largely unavoidable impacts, such as increases in dust and dirt, although steps can be taken to mitigate these such as creating a separate entrance for construction staff, keeping walkways free of dirt etc.

Positive impacts during the construction phase relate mainly to economic and social benefits that will accrue if the local businesses and workers are employed to carry out this work. There is a need for planning in conjunction with local schools, colleges, etc, to ensure that the local workforce has the necessary skills and capabilities to complete this construction work. Positive impacts during the operational phase relate to the benefits of working, being cared for in and visiting a new, well-designed hospital, and opportunities to create a health promoting hospital and a healthy workforce.

Recommendations.

Construction/ demolition phase.

Economic.

1. A large number of jobs will be created during the construction and demolition phase. The RLBUHT, along with local authorities and other relevant agencies need to take positive action to ensure that local people are employed/ local firms utilised in this phase.
2. Local people should be suitably trained to take advantage of potential employment opportunities. The Trust needs to liaise with JET (Jobs, Education and Training) teams, needs to begin as soon as possible, to involve local schools, colleges, universities, Chamber of Commerce, as well as organisations such as Liverpool One (a large scale regeneration project) and other relevant organisations.
3. In awarding construction contracts, the Trust should ensure that employment of local people is a key consideration. Procurement should include measures to encourage and facilitate employment of 'local' people (to be clearly defined) and ensure that this are followed through. Open days could be held for local companies, to give them more information about the project.
- 3.1 As far as is practically or legally possible, the Trust should ensure firms carrying out construction work offer skills training opportunities, e.g. apprenticeships for local people.

Social.

1. See recommendations 1-3 above.
2. The Contractor(s) and Trust must ensure that current statutory health and safety standards are adhered to.
3. There is a need for adequate security to be provided on the site, including CCTV. This could be provided by adequately trained people living locally.
4. The Contractor and Trust must ensure that construction site traffic is kept away from other traffic wherever possible, and that movement of such traffic occurs at specified times- ideally avoiding peak times and when children are travelling to school.

4.1 Separate entrances for construction, other traffic and pedestrians to the Royal Liverpool hospital are recommended.

4.2 A separate entrance for ambulances is recommended.

4.3 Pedestrian routes must be kept free from mud and dust.

Physical.

1. Strict hours for when work and deliveries are permissible should be enforced to minimise noise levels.
2. As some doctors work night shifts, the Trust could look at ensuring that doctors' residencies are as soundproof as possible. Are there no places for Doctors to sleep on the site?

Public service provision.

1. The Trust needs to develop comprehensive transport plan for staff, patients, and visitors to the Royal Liverpool and Broadgreen University Hospitals sites. They should also develop a plan to minimise negative impacts of the renewal on local residents. Ongoing transport problems also need to be re-examined as part of the plan.

1.1 The plans will need to be agreed by the Trust in collaboration with other key groups, including the Highways Agency (unsure why agency crossed out?), local police, social services, Merseytravel, bus companies. There needs to be two way communication with the local community about this planning.

1.2 Profiling is necessary to look at how many journeys are currently made to each hospital, and for what purpose. Resources could potentially be used more effectively if patients from similar areas travelled together. Public transport may not always be appropriate for those with health problems, so alternative means of transport may need to be agreed.

1.3 Car sharing schemes should be built upon, and Park and Ride schemes encouraged. The trust should ensure that car parking prices are not prohibitive for patients on low incomes.

1.4 Designated parking bays may be needed for staff undertaking work in both hospital and community sites, particularly for staff at Broadgreen Hospital. Establishing clearly signposted drop off points, particularly for disabled users, is also a priority.

1.5 The plan needs to facilitate use of public transport. The Trust should liaise with relevant agencies to ensure that buses/ trains run at times that are convenient for staff, patients and visitors. During the construction phase, it might be necessary to re-route buses in order to co-ordinate with the most convenient pedestrian routes. It is recommended that 'greener' methods of public transport are implemented wherever possible.

1.6 The transport plan also needs to include provision for cyclists, e.g. shower facilities, secure places to store bikes etc. Roads may also need to be improved to ensure they are safe for cyclists to use. Walk to work initiatives may also be an option.

1.7 Patients that currently attend The Royal may now have to attend the less central Broadgreen Hospital, as service provision changes. The Trust should work with Mersey Travel and other bodies to improve the accessibility of Broadgreen by public transport..

1.8 Resident-only parking may need to be established in the roads surrounding the Royal Liverpool University Hospital. Currently, patients/ visitors park on these roads to avoid paying parking charges within the hospital car park, and this problem may get worse if parking charges increase, or if there is an increased shortage of parking spaces.

2. Travel around the site, e.g. introducing minibuses to take patients from car parks, also needs to be considered, particularly if patients will now have to take longer routes around the site due to construction work. Experience from Whiston Hospital shows that a physical presence is useful – it is useful to have someone to direct people around the site. Clear signage is also important.
3. The Trust should look the experiences of other hospitals where building work has been executed, e.g. Whiston Hospital, and implement similar measures where these have worked successfully.
4. The Trust should make arrangements to accommodate the needs of patients coming to hospital during the construction/demolition phase, particularly those who are particularly affected by dust etc, such as those with respiratory problems.
5. The Trust should continue to progress proposals to develop a cancer centre on the Royal site.

Operational phase.

Social

1. Care of patients in single rooms, of which there will be an increased number, will need to be carefully managed to ensure that they do not become isolated.
2. Additional training might also be needed for nursing and medical staff, as they adapt to new ways of working, e.g. caring for patients for a shorter period of time, caring for patients in single rooms, introduction of new technologies etc.
3. The Trust should work towards establishing the hospital as a model of a best practice health-promoting hospital, e.g. establishing light, well-ventilated wards, with views of well-maintained greenery, which has been found to facilitate the recovery process (Ulrich, 1984). Information on these measures can be found in the Liverpool Public Health Observatory Report, 'Top tips for healthy hospitals' (LPHO, 2006). The Trust should also look at measures to improve the health of the workforce, e.g. consider a gym that could be used by staff, patients and members of the public.
4. The Trust should introduce a simpler, cheaper, system, of access to telephones, TV's and other audio-visual facilities. Permitting mobile phone use should also certainly be considered where possible.

Physical

The Trust should take action to protect the 'green space' that will be created as part of the new hospital. The local authority could stipulate that this space will be protected when granting planning permission.

Public service provision

1. It is likely that the decrease in beds, of up to around 150 beds, will increase pressure on community care, so this will need to be resourced appropriately.
2. There are plans for some of the space in the new building to be flexible, so that office space could be converted into bed space if necessary. However, there is a need for the Trust to review how quickly this can be done, and how easily this can be done.

- 3.** There needs to be better shared communication between the Acute Trust Board, PCT, Local Authority, Social Services, NW Ambulance service etc , in order to co-ordinate patient care more effectively, e.g. to facilitate more effective discharge planning, to avoid delayed discharges.
- 4.** The Trust and other relevant agencies should also review which services need to be provided in a hospital setting, and which would be better managed in the community, as part of this large scale re-organisation.

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Appendix 1 : List of people and organisations invited to take part in the Rapid HIA and a list of those who participated.

Invited to HIA Workshop, December 2007. Senior personnel were contacted and asked to nominate staff members to attend, where appropriate.

Stakeholder	Invited
Internal	
Trust board	Chair plus Non Executives
Clinicians	CDG
Managers	All Executives Estates Human Resources Operational PPI
Project Team	Director Deputy Director
Staff	Via staff side
Patients	Patients' Council, PPIF
External	
University of Liverpool	Medical school Facilities Regional development
Liverpool John Moores University	School of Nursing
Strategic Health Authority	
Government office	
Local residents- Royal	Kensington Fields Cooperative

Local residents Broadgreen	–	
Police Fire service Ambulance		Local commanders
Commissioners - Liverpool		
Commissioners Knowsley, Sefton	–	
General Practitioners		LMC
Local authority officers		Regeneration Liverpool Vision Environmental Health Housing (also education)
Councillors		Central and Knotty Ash wards
Regional development		NWDA, Regional Assembly
Education and employment		Learning and Skills Council, Universities, Jobcentre plus, Sacred Heart Primary School Local Education Authorities
Regeneration		Liverpool Land RENEW KNDC
Voluntary sector		Local Solutions

	LCNs
Local businesses	Chamber of Commerce
Transport authority	Merseytravel.

Attended HIA Workshop (including facilitators, 18th December 2007).

Job title	Organisation
Divisional General Manager Services,	RLBUHT
PPI	RLBUHT
Non Executive Director	RLBUHT
	Society of Radiographers
Staff Side	RLBUHT
Patients Council	RLBUHT
Liverpool HR Services,	RLBUHT
Administrator	Liverpool Public Health Observatory, University of Liverpool
Director of Information	RLBUHT
DGM Non Clinical Support Services	RLBUHT
Training Co-ordinator	IMPACT, University of Liverpool
	Travelwise Merseyside
	Kensington Fields Committee
Chair	RLBUHT
HIA Officer	IMPACT, University of Liverpool
Directorate Manager	Cardiology and Emergency Services, RLBUHT
	John Moores University
Therapy Manager	RLBUHT
Project Director, 'World Class Hospitals, World Class	RLBUHT

Services'	
Patients Council	RLBUHT
Patient and Public Involvement Lead	RLBUHT
Patients Council	RLBUHT
Researcher	Liverpool Public Health Observatory, University of Liverpool
	North West Ambulance Service
	Merseytravel
Non Executive Director	RLBUHT
Patient Council	RLBUHT
Therapy Manager	RLBUHT
Deputy Project Director,' World Class Hospitals, World Class Services'	RLBUHT
	Renew Northwest
Directorate Manager,	RLBUHT
	Merseytravel
Head of Cancer Studies	RLUH/ UOL
	Royal College of Nursing
Research Associate	IMPACT, University of Liverpool
Hotel Services Manager	RLBUHT
	Liverpool City Council, Regeneration
	Liverpool Primary Care Trust
Divisional General Manager	RLBUHT

Medicine	
Project Team, 'World Class Hospitals, World Class Services'	RLBUHT
Director	Liverpool Public Health Observatory University of Liverpool
Specialist Registrar Public Health	Knowsley Primary Care Trust
	University of Liverpool
	Merseyside Police
Matron	LUDH
Senior Researchers (2)	Liverpool Public Health Observatory, University of Liverpool
Deputy Chief Executive	RLBUHT

**A New Health Service for Liverpool
World Class Hospitals, World Class Services**

Rapid Health Impact Assessment

Stakeholder Workshop

LACE Conference Centre
9.00 for 9.30am to 12.45pm
18th December 2007

Background Materials

Produced by the Health Impact Assessment Project Management Group

Please bring this document with you to the workshop. You may want to refer to it during the day.

About this material

This material has been provided to you in advance of the stakeholder workshop by way of background information on:

- The RLBUH Trust's plans for service change and for a new hospital to replace the Royal on the existing site, together with further development at Broadgreen Hospital
- An introduction to Health Impact Assessment (HIA).
- The proposed outline for the workshop.
- A profile of the affected areas.

It is essential that all participants have read this material before the workshop. This will allow us to use the limited time we will have during the workshop to map out the potential effects the ECC proposal will have on the health and wellbeing of people affected by it. We will also make recommendations for how positive health impacts could be enhanced and negative health impacts eliminated or mitigated.

It should take no more than one hour to read this background material. This will allow you to take part fully in the activities of the workshop and ensure that you are able to make your full contribution to the HIA of the proposal.

These materials have been produced by the Health Impact Assessment Project Management Group (and collated by the Researcher). The Health Impact Assessment Project Management Group constitutes the following:

- Helen Jackson, Director, Royal Redevelopment Project Team, RLBUH Trust
- Stuart Moore, Development Director/ Deputy Project Director, Royal Redevelopment Project Team
- Cath Lewis, Researcher, Liverpool Public Health Observatory
- Alex Scott-Samuel, Director, Liverpool Public Health Observatory.

1. The Trust's Proposals

1.1 Introduction

The Royal Liverpool and Broadgreen University Hospitals NHS Trust (RLBUH) manages the Royal Liverpool University Hospital, Broadgreen Hospital and the Liverpool University Dental Hospital.

The Trust is developing proposals for service change and capital investment affecting the Royal and Broadgreen sites. Public consultation on these is currently planned to commence in early 2008. An outline planning application for redevelopment of the Royal site was submitted to Liverpool City Council in November 2007. The Trust's plans will be submitted for approval to the Department of Health in the form of an outline business case (OBC) in spring 2008.

It is important to note that public consultation constitutes a separate and independent process to Health Impact Assessment (HIA), although both should inform future decision making.

HIA aims to identify aspects of a proposal that could affect the health and well-being of defined populations and to produce recommendations in order to maximise positive and minimise negative health impacts of the proposal.

Thus this HIA is concerned with both the planned service changes and the proposed capital investment on a new hospital to replace the Royal and on the improvements at Broadgreen.

1.2 Local Health Profile

The health of the people of Liverpool, Knowsley and Sefton compares poorly with the rest of the country. Life expectancy is around three years less than the national average, and nearly a quarter of the population have a long-term illness such as heart disease.

People locally are more likely to attend A&E and be admitted as an emergency into hospital care; by contrast the number of people referred for planned treatment remains below the national average.

Further information on local health status is at Appendix 1.

1.3 Trust Profile

The Trust is the main adult acute university teaching hospital for Merseyside and Cheshire. In association with the University of Liverpool, it has four main roles:

- to provide *general hospital services* to the adult population of Liverpool;
- to provide *specialist health services*, including cancer services, for Merseyside, Cheshire and beyond;
- to be a centre for biomedical, clinical and health services *research*; and
- to support *teaching and training* in the health professions.

The Trust provides services from the Royal, Broadgreen Hospital, the Liverpool University Dental Hospital and various locations across the city of Liverpool and beyond. In 2006-07 it had a turnover of £314 million, treated over 49,000 inpatients and 27,000 day cases, and saw almost 550,000 outpatients and 130,000 emergency attendances.

The **Royal** opened in 1978 and is situated within the Central electoral ward at the edge of Liverpool city centre, on a site shared with the Faculty of Medicine of the University of Liverpool. The Royal provides accident & emergency and the main general medical and surgical services, together with regional and national specialist services including nephrology, renal transplantation, dialysis, ophthalmology, haematology, bone marrow transplantation, cancer surgery and vascular surgery, and has 843 beds. Approximately 5,400 staff (4,700 wte) work at the Royal, including those employed by the Trust's facilities management contractors.

Figure 1 – the Royal Liverpool University Hospital



Broadgreen Hospital, with 192 beds is located within Knotty Ash ward towards the edge of the city close to the M62 motorway, on a site shared with the Cardiothoracic Centre - Liverpool NHS Trust and the Broadoak acute mental health unit of Mersey Care NHS Trust. It has been largely rebuilt within the last 20 years. A new surgical diagnostic and treatment centre for this Trust came into full use in August 2006. A range of elective general, orthopaedic, urological and ENT surgery is based on the site, together with specialist services for older people (including rehabilitation), dermatology and satellite renal dialysis.

Figure 2 – Broadgreen Hospital



1.4 Reasons for change

The Trust's plans are driven by two main factors: the Royal's physical condition, and the need to keep up with the constant changes in health care.

Modern buildings are heavily dependent on their engineering services, such as heating, lighting, water, ventilation and power. Those in the Royal are approaching the end of their life. Although the equipment has been well maintained and remains safe, as years go on, the risk of failure will grow. The Trust has looked in detail at refurbishing the hospital, but this would not be practical or good value for money. Moreover, patients find the existing hospital impersonal and hard to find one's way around, and the facilities do not meet modern standards for the patient environment, with fewer than 20% of the beds in single rooms.

At the same time, health care has changed enormously since the 1960s when the current Royal was designed, and this change is continuing. There are new technologies, such as new scanners, and more care is delivered on a team basis, with extended roles for nurses and other professionals. There are also new approaches such as one-stop clinics, where all tests and assessments are undertaken on a single visit. The existing hospital buildings are inflexible and not suited to these new models of provision.

The Trust's preferred option will therefore be to develop a new hospital to replace the Royal, on the existing site.

1.5 Service Changes

The Trust has agreed a clinical service delivery model to describe how its services will be provided in the future. This has four key principles:

5. Separating emergency care from planned care to remove competing pressures for resources, such as beds, diagnostics and theatre time.
6. Emergency and specialist care to be based at the Royal Liverpool University Hospital, where there is the full range of clinical and support services to support complex medical and surgical cases, together with the main base for the associated research.
7. A wider range of planned surgery, supported by post operative critical care and with the relevant outpatient clinics, to take place at Broadgreen Hospital to help improve patient experience.
8. A range of services to be provided outside hospital where appropriate to help improve access and increase choice for patients on where they can access their care.

The Royal will thus continue to be the centre for emergency and complex medical and surgical care, including accident and emergency, cancer care, and research with the University of Liverpool. Broadgreen Hospital will focus on planned assessments and treatments, including the new surgical treatment centre, plus rehabilitation. The Dental Hospital stays as the regional specialist, research and training centre for dentistry.

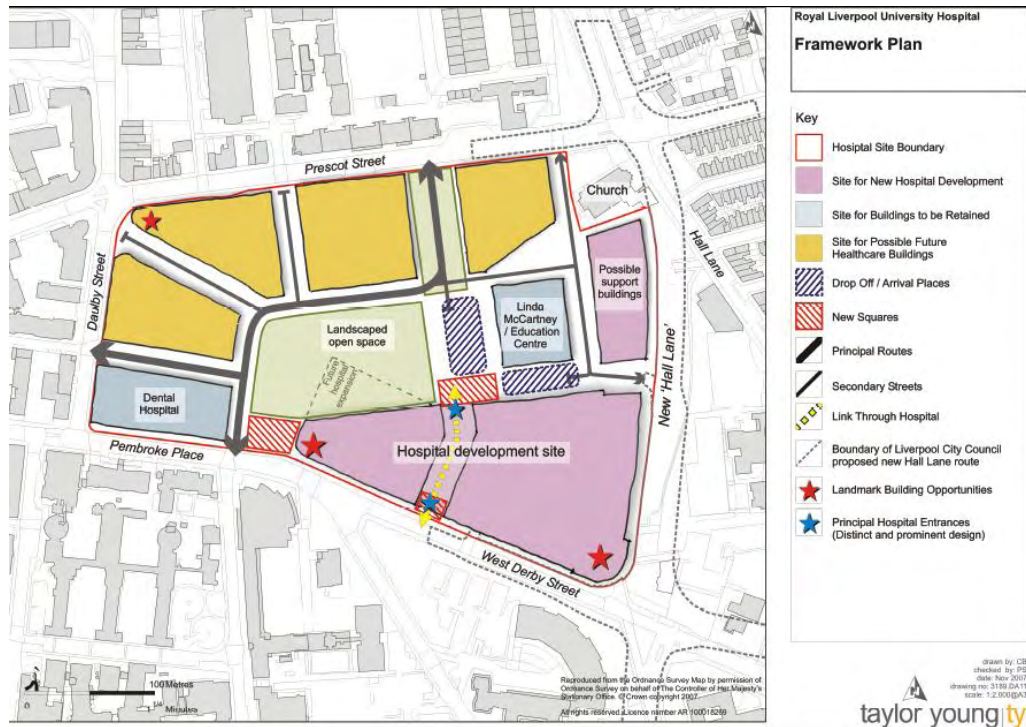
New and improved community health care facilities are to be developed in parallel plans by Liverpool PCT. These will enable outpatient, diagnostic and therapies services to be provided closer to patients' homes. In addition, the PCT and Liverpool Social Services are implementing improved prevention, rehabilitation and community services to support people at home. These aim to assist independence, prevent unnecessary hospital admission, deliver more effective rehabilitation services to enable early discharge from hospital and prevent premature or unnecessary admission to long-term residential care.

1.6 New Hospital Development

The new Royal will be located on the south east part of the site, which is currently occupied by open space and vacant hospital buildings. It will be arranged around a series of internal courtyards and be up to eight floors high (plus potentially two extra floors at the south east corner). There will be a main frontage to the building at lower ground level on West Derby Street, and access at ground level from Prescott Street. A replacement energy centre will also be built to serve the new hospital.

Once the new hospital is complete the existing Royal Liverpool University Hospital will be demolished, along with existing buildings including the Duncan Building and the Energy Centre. Once these areas of the site are cleared they will be available for future health related development; as yet there are no specific plans for this (see figure 3). The Dental Hospital, Linda McCartney Centre and Education Centre are planned to be retained. Part of the site (directly in front of the hospital) will be used as public open space with appropriate landscaping. New access roads, footpaths and cycleways will be constructed across the site and the rest would be developed for other health care uses such as additional clinical facilities, or possibly laboratories for medical research.

Figure 3 – Proposed masterplan framework for the Royal site



Plans for the investment at Broadgreen are currently in preparation. They are expected to include additional operating theatres, ward refurbishments, and a range of environmental improvements.

1.7 Summary of Project Timetable

Outline planning application submitted	November 2007
Public consultation	Early 2008
Submission of outline business case (OBC) to Dept of Health	Spring 2008
Approval of OBC and advertise for a Private Finance Initiative (PFI) partner	Autumn 2008
Start on site	Early 2011
New hospital opens	Early 2015

1.8 Environmental Effects

The Trust's outline planning application for the Royal covers the entire site, including the areas for future health related development. An Environmental Impact Assessment (EIA) of these plans has been undertaken by Entec UK Ltd, as part of the outline planning application. The EIA seeks to identify and assess effects that are or could be significant.

Appendix 2 provides a brief summary of the main findings of the EIA.

2. What is Health Impact Assessment?

2.1 Introduction

The purpose of HIA is to assess the consequences for human health of a policy, programme or project and to use this information in the decision making process. HIA involves any combination of procedures or methods by which a proposed policy, programme or project may be judged as to the effect(s) it may have on the health of a population.”

There are three types of HIA:

Prospective HIA

Such assessments are carried out during the development of a policy, programme or project to estimate the potential impacts of the proposed activity on the health and well-being of defined human populations. The assessment should contribute to the decision making and planning processes.

Concurrent HIA

Such assessments are carried out during the implementation of the policy, programme or projects to assess how the unfolding activity is affecting the health and well-being of the defined populations. This would allow changes to be made to the activity to maximise health gain opportunities.

Retrospective HIA

Such assessments are carried out after the proposals have been carried out to assess the actual impacts on the health and well-being of the defined populations. The information obtained from such assessments can contribute to the overall body of knowledge about health impacts and, therefore, help to inform future prospective HIAs.

2.2 The focus of HIA

An HIA is designed to identify aspects of a proposal that could affect (or has affected) the health and well-being of defined populations. These health impacts are most likely to occur because the proposal affects the key determinants of health, rather than because the proposal impacts directly on human health (though this may happen occasionally, e.g.

exposure to physical or chemical hazards). ***For further information on the likely significant environmental impacts that might be experienced by the nearby community, hospital staff and patients by the construction, demolition and operation of the proposed development, please see the Environmental Statement Summary document.***

We know what type of things affect our health – examples are listed in Table 1 and Table 2.

Table 1 - The key determinants of health

Individual Risks	Environmental/Social Risks
<ul style="list-style-type: none"> • Inherited disease susceptibility. • Physiological variations. • Biological threats (e.g. infection). • Pre-conceptual/in utero exposure to risk factors. • Lifestyle risk factors. 	<ul style="list-style-type: none"> • Pollution. • Education. • Income. • Employment. • Access to transport. • Ethnicity. • Social class. • Area of residence. • Access to services.

This will be a rapid, prospective HIA and the stakeholder workshop you will be attending will help us to identify the potential effects the proposal will have on the key determinants of health.

In looking at impacts, the following needs to be borne in mind (both during the construction of the new hospital and once it has been built and its services are operational):

- What is the nature of the impact?
- Will the impact occur straight away or over time?
- Will the impact be temporary or permanent?
- How certain can we be that the impact will happen?
- Can this impact be measured (quantified) precisely, imprecisely, or not at all? (It should be noted that HIA is not intended as a precision prediction tool but is rather a broad mapping exercise to ensure that health is considered in the decision making process and often in practice, very little information can be precisely quantified)
- Which population groups will be affected by the impact?
- What enhancement/mitigation factors can be taken?

Key consideration needs to be given to the population groups affected by the proposal and to any health inequalities that may result if any population groups are particularly affected (positively or negatively). Population groups can be defined geographically (e.g. the immediately affected wards of Central and Knotty Ash, Liverpool as a whole, etc) or by other means (such as age, sex, employment status, health status, etc).

This information will be recorded in a matrix.

Table 2 - Examples of key determinants of health

Determinant	Explanatory note
<p><u>Economic</u></p> <p>Wealth creation</p> <p>Wealth distribution</p> <p>Employment opportunities</p> <p>Education and training</p>	<p>Wealthier regions/communities have greater levels of wellbeing than poorer regions/communities (generally speaking). But the actual pattern of wealth distribution across the different groups within society directly affects their respective levels of well-being. Inequalities in wealth distribution cause inequalities in wellbeing across these groups.</p> <p>Employment is generally considered to be better for your wellbeing than unemployment. However, not all jobs are good wellbeing, e.g. occupational diseases and accidents, work related stress, are worse in certain types of jobs. You should also take into account the sustainability of the jobs created and which groups within the community will be able to access them.</p> <p>Education is directly linked with the social and economic conditions associated with quality of life and wellbeing. Improving the learning opportunities for vulnerable groups like young people and the unemployed will substantially improve wellbeing for them and reduce inequalities.</p>
<p><u>Social</u></p> <p>Family support</p> <p>Community networks</p> <p>Community safety</p>	<p>Strong, independent and responsible individuals grow best in nurturing, positive and supportive environments that offer positive role models and encourage healthy citizenship</p> <p>People are social beings. Meaningful social contacts are good for wellbeing, e.g. with families, friends and community groups. This includes access to cultural/leisure facilities.</p> <p>People need to feel safe and secure in order to be healthy. Protection from accidental injury and crime is necessary for individual and</p>

<p>Public participation / social inclusion</p>	<p>community wellbeing. Fear of crime can be just as damaging as crime itself.</p> <p>Individual wellbeing is enhanced by a feeling of control over one's life circumstances, e.g. in decision-making affecting income, working and living conditions and in their discretion to act.</p>
<p><u>Personal</u></p> <p>Health-related behaviour</p>	<p>Individuals may place themselves at increased risk of ill health through their health related behaviour patterns. Consider whether the proposal encourages healthier behaviours and discourages unhealthy ones.</p>
<p><u>Physical</u></p> <p>Natural environment</p> <p>Built environment and open space</p> <p>Provision of housing</p>	<p>Population wellbeing is affected by the natural environment - air, soil and water quality, ecosystem, noise, smells, views, waste disposal. These factors are themselves affected by the way we use our natural resources, consume our energy and the pollution and waste we produce.</p> <p>The quality of buildings, parks, land-use per se, access to green open space, can contribute to feelings of well-being.</p> <p>Well-being is affected by the houses we live in – the quantity and quality of housing stock and tenure (private and social) and its affordability.</p>
<p><u>Public service provision</u></p> <p>Access</p>	<p>Access issues especially for vulnerable groups such as ethnic minorities, disabled, homeless need to be considered. Access needs to be considered in terms of location and transport and physical access to buildings, for example.</p> <p>In additions to access, there are particular concerns about the impacts of over reliance on the private car, increased air travel on air pollution</p>

3. Workshop Agenda

	Time
<i>Registration (Tea and coffee)</i>	9:00
Introduction to Workshop – Dr Alex Scott-Samuel, University of Liverpool <ul style="list-style-type: none"> • Introductions • What is HIA? 	9:30
The Trust's Plans for developing new facilities and transforming service provision – Helen Jackson, Project Director	9:50
Introduction to Tasks – Dr Alex Scott-Samuel	10:10
Group work: Identifying impacts and opportunities/mitigation – construction phase	10:15
Tea/coffee available	11:15
Group work: Identifying impacts and opportunities/mitigation – operational phase	11:15
Feedback/discussion and general discussion about the day's findings	12:15
Closing remarks	12:40
Lunch	12:45

Profile of the affected area

A1.1 Introduction

An integral part of any HIA is the identification of those groups who may be affected by the proposal being assessed. These affected groups may have in common a geographical location, a shared interest or a shared identity. Following on from the identification of the affected groups it is common practice to provide a profile of them, which includes a range of demographic and social data. This will allow the assessors to determine if there are any particular characteristics within the affected groups that could either make them more resistant or more vulnerable to the health impacts that may result from the proposal being assessed.

There are around 440,000 people residing in Liverpool. In 2004, Liverpool as a whole was one of the most deprived Local Authority areas, regardless of how deprivation was measured. Public health data shows that, in general, people in Merseyside have shorter life expectancy than the National Average, according to the Office for National Statistics (www.neighbourhood.statistics.gov.uk/)

The Royal Liverpool University Hospital (known almost universally as 'The Royal'), is based within the electoral 'ward' of 'Central' Ward, Broadgreen Hospital is based within 'Knotty Ash' Ward. For this reason, particular attention is paid to these two electoral wards, although we are also looking at the potential impacts of the proposed development on Liverpool as a whole.

Profile of the affected area – summary

Within England, Liverpool, and within Central and Knotty Ash, there are slightly more females than males, (51.3, 52.3%, 53.3% and 53.1% respectively), according to the Office for National Statistics.

64.4% of Liverpool residents report being in good health, according to the 1991 census, lower than the proportion in England (68.8%). The proportion is slightly higher in Central Ward (71%), but slightly lower in Knotty Ash (62.9%).

About a quarter of Liverpool residents (24.6%) describe themselves as having a Limiting Long Term Illness, significantly above the proportion of those in England (17.9%). The

proportion is significantly lower in Central Ward (15%), but slightly higher in Knotty Ash (27%).

According to the 2001 Census, over a third of Liverpool residents report having no educational qualifications – this is significantly higher than the proportion without qualifications in England as a whole. The proportion is slightly higher in Knotty Ash (42.3%), but lower in Central Ward (18%).

(Office for National Statistics, 2007).

16% of households in Liverpool are headed by lone parents, which is significantly higher than the proportion for England as a whole. This proportion is lower in both Central (8%) and Knotty Ash (11%) Wards (Office for National Statistics, 2001 Census).

Proportionately, health and social care work is one of the largest industries of employment, both in England and Liverpool as a whole, and in the two affected wards. Around a tenth of residents are employed in real estate, renting and business activities, in each Ward. In Central Ward, hotels and restaurants is also an important source of employment, employing an eighth of residents.

The smoking rate for Liverpool is above the North West and England averages. The death rate from smoking is the second highest in England, with smoking accounting for 1,030 deaths every year (North West Public Health Observatory, 2007).

http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/00BY-HP2007.pdf

The binge drinking rate for Liverpool is estimated to be the second highest in England. The rate of alcohol specific conditions is the highest in England (Public Health Observatory, 2007).

http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/00BY-HP2007.pdf

The early death rate from cancer in Liverpool is the second highest in England (Public Health Observatory, 2007).

http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/00BY-HP2007.pdf

Male life expectancy is 73.4 years and female life expectancy 78.1 years, so on average men and women in Liverpool live shorter lives than in the North West and England. Male life

expectancy is the third lowest and female life expectancy is the lowest in England (Public Health Observatory, 2007).

http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/00BY-HP2007.pdf

It is estimated that the percentage of adults who are obese is below the England average. Of the 26 indicators shown in Liverpool's health profile, this is the only indicator that is better than the England average. 22 indicators are worse than the England average (Public Health Observatory, 2007).

http://www.communityhealthprofiles.info/profiles/hp2007/lo_res/00BY-HP2007.pdf

A1.2 Population and housing

According to the 2001 Census, 21,858 people live within the electoral wards which both The Royal Liverpool Hospital and Broadgreen Hospital are based, (Central [8,658] and Knotty Ash [13,200] Wards respectively), accounting for almost 5% of the total Liverpool population.

Over 439,473 people are resident in the Local Authority area, Liverpool, that relies on the Royal Hospital the most, although the hospital is also used by residents living in the areas covered by Sefton, Knowsley and Wirral, and also provides specialist services across the whole of the North West of England.

Within Central and Knotty Ash, as in Liverpool and England as a whole, there are slightly more females than males, as shown below.

Proportion of local population by sex

	Central	Knotty Ash	Liverpool	England
Male	46.7	46.9	47.7	48.7
Female	53.3	53.1	52.3	51.3
All People	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

The proportion of children aged 15 and under is similar in Liverpool to England as a whole, according to the 1991 Census (see table 4-2, below). There are more people aged 16-44 than in England as a whole, and proportionately less people aged 45 and over. The North Mersey Public Health and Intelligence Specialist Group have produced a report to support the Primary Care and Health Improvement element of the NMFHP. According to this, the proportion of the population aged over 50 years is expected to increase, by 2009, from approximately 30% to 32% in Liverpool.

Proportion of population by age

	Liverpool	North West	England
People aged 0-15	20.1	20.7	20.2
People aged 16-17	2.8	2.7	2.5
People aged 18-19	3.4	2.5	2.4
People aged 20-24	8.4	5.8	6.0
People aged 25-29	6.6	6.2	6.7
People aged 30-44	21.7	22.1	22.7
People aged 45-59	16.8	19.1	18.9
People aged 60-64	4.7	5.1	4.9
People aged 65-74	8.6	8.6	8.3
People aged 75-84	5.1	5.6	5.6
People aged 85-89	1.1	1.2	1.3
People aged 90 and over	0.5	0.6	0.6

SSoSource: 2001 Census (from www.neighbourhood.statistics.gov.uk).

Central Ward, where The Royal Hospital is based, has a lower proportion of white residents (83.2%) compared with England as a whole (91%), while Knotty Ash, where Broadgreen Hospital is based, has a higher proportion (97%). There is a higher proportion of Chinese residents in Central Ward (6.3%), compared with Knotty Ash (0.7%), Liverpool (2%) and England as a whole (1%). There is also a higher proportion of Asian residents in Central Ward (5.2%), compared with Knotty Ash (1%), England (5%) and Liverpool (2%) – see Table 2-3, above.

Proportion of Merseyside population by ethnicity.

	Central	Knotty Ash	Liverpool	England
White	83.2%	97%	94%	91%
Mixed	2.8%	0.8%	2%	1%
Asian or Asian British	5.2%	1%	1%	5%
Black or Black British	2.5%	0.5%	1%	2%
Chinese or Other	6.3%	0.7%	2%	1%
Total	100%	100%	100%	100%

There are significantly more lone parent households in Liverpool than in England as a whole. Within Liverpool, there are more lone parents in Knotty Ash than the Liverpool and England average, but slightly less in Central Ward.

Proportion of Liverpool population by lone person/parent households.

	Central	Knotty Ash	Liverpool	England
Lone non-pensioner household	10	18	16	12.7
Lone pensioner household	37	15	21	6.1
Lone parent households	8	11	16	10.5
All other households	55	44	47	61.7
All Households	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

A1.3 Deprivation and the local economy

The former Department of the Environment Transport and the Regions (DETR) commissioned the Social Disadvantage Research Centre (SDRC) at the Department of Social Policy and Social Work at the University of Oxford to produce indices of deprivation based on 33 items of data for all wards in England, which were released in 2000. This enabled wards to be ranked from 1 (most deprived) to 8,414 (least deprived). Based on these Indices of Multiple Deprivation (IMD 2000), Warbreck was one of the top 10% most

deprived wards (ranking 431) whereas Fazakerley was one of the top 5% most deprived wards (ranking 262).

The Office of the Deputy Prime Minister (ODPM) commissioned the SDRC to update the IMD 2000 for England and the new Indices of Deprivation 2004 have been produced and published and are available on the website at super output area (SOA) level and local authority level.

Six summary measures of the overall Index of Multiple Deprivation (IMD) have been produced at this level, which describe different aspects of multiple deprivation in each area. Each of these is designed to capture a particular way in which a local authority may experience multiple deprivation. No single summary is favoured over another, as there is no single best way of describing and comparing multiple deprivation at this geographic level. More specifically:

- **Local Concentration** - shows the severity of multiple deprivation in each authority, measuring 'hot-spots' of deprivation;
- **Extent** - the proportion of a district's population that lives in the most deprived Super Output Areas in England;
- **Average Scores** and **Average Ranks** - two ways of depicting the average level of deprivation across the entire district;
- **Income Scale** and **Employment Scale** - the number of people experiencing income and employment deprivation retrospectively.

SOAs have a minimum population of 1,000 and an average population of 1,500. The North Mersey Public Health and Intelligence Specialist Group have found that of the 100 most deprived SOAs in England, Liverpool and Knowsley have 33.

There are 354 local authorities and districts (LADs) in England where again a rank of 1 indicates the LAD is most deprived. As can be seen from the table, Liverpool rates poorly on all measures

Table - Indices of Deprivation - Local Authority Summaries

	Liverpool
Local Authority Summaries, Rank of Average Score	1
Local Authority Summaries, Rank of Average Rank	5
Local Authority Summaries, Rank of Extent	5
Local Authority Summaries, Rank of Local Concentration	2
Local Authority Summaries, Rank of Income Scale	2
Local Authority Summaries, Rank of Employment Scale	2
Local Authority Summaries, IMD LA Population	441096

Source: Office of the Deputy Prime Minister (from www.neighbourhood.statistics.gov.uk/)

Proportionately, health and social care work is one the largest industries of employment, both in Liverpool and England as a whole, and in the two affected wards, alongside wholesale and retail trade, repairs, employing a fifth and sixth of residents respectively. Around a tenth of residents are employed in real estate, renting and business activities, in each Ward. In Central Ward, hotels and restaurants is also an important source of employment, employing an eighth of residents.

Proportion of Merseyside people (aged 16-74) employed by sector.

	Central	Knotty Ash	Liverpool	England
Agriculture	0.5	0.3	0.32	1.4
Manufacturing	6	9.8	10.6	14.8
Electricity, gas and water supply	0.2	0.7	0.4	0.7
Construction	3	7.3	6.0	6.7
Wholesale and retail trade, repairs	16.1	16.2	15.7	16.8
Hotels and restaurants	13.9	4.1	5.4	4.7
Transport, storage and communications	5.2	7.4	7.7	7.1
Financial intermediation	4.4	5.5	4.9	4.8
Real estate, renting and business activities	10.6	9	10.2	13.2

Public administration and defence, social security	4.5	7.1	7.5	5.7
Education	9.6	8.8	10.2	7.7
Health and social work	17.9	18.3	15.3	10.7
Other community, social and personal service activities	7.7	5.1	5.6	5.0
All People	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

36.8% of the population work part-time in Central Ward, where the Royal is based. This proportion is higher than in Knotty Ash Ward, which is similar to the Liverpool proportion of 26.3%, and slightly higher than the England proportion of 24.6%.

Proportion of Merseyside workers (aged 16-74) employed part time and full time

	Central	Knotty Ash	Liverpool	England
Part-time	36.8	27	26.3	24.6
Full-time	63.1	72.9	73.7	75.4

Around half the people in Liverpool travel less than 5km to work, and most travel by car or bus, according to the Office for National Statistics. The proportion of workers driving a car to work is less in Liverpool than in England as a whole. Proportion not currently working in Liverpool is significantly higher than in England as a whole.

Proportion of Merseyside workers (aged 16-74) travelling to work and average distance travelled

	Central	Knotty Ash	Liverpool	England
Works mainly at or from home	4.3	6.4	5.6	9.1
Less than 2km	43.6	18.3	17.9	20
2km to less than 5km	17.53	21.6	29.3	21
5km to less than 10km	10.5	39	28	18.2
10km to less than 20km	4.5	5.1	7.9	15.2
20km to less than 30km	3.2	1.8	2.3	0.5
30km to less than 40km	1.1	0.6	0.8	0.1
40km to less than 60km	4.5	1.5	1.9	2.2
60km and over	7	1.6	2.1	2.7
No fixed place of work	2.7	3.8	3.7	4.4
Working outside the UK	0.7	0.2	0.25	0.3
Working at offshore installation	0.2	0.1	0.1	0.1

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

Mode of transport used to travel to work by Liverpool workers (aged 16-74)

	Liverpool	England
Works mainly from home	2.7	5.8
Underground, metro, light rail or tram	0.2	2
Train	1.4	2.7
Bus, minibus or coach	10.2	4.7
Taxi or minicab	0.6	0.3
Driving a car or van	22.9	34.7
Passenger in a car or van	3.6	3.8

Motorcycle, scooter or moped	0.3	0.7
Bicycle	0.8	1.8
On foot	5.1	6.3
Other	0.2	0.3
Not currently working	51.8	36.8

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

A1.4 Health

Public health data shows that in general, people in Liverpool have shorter life expectancy than the national average that for all the major killers, such as coronary heart disease (CHD), respiratory diseases and cancer, mortality rates are higher than the national average.

Age standardised rates describe the rate of events that would occur in a chosen standard population if that population were to experience the age specific rates of the subject population. In this case the standard population generally used for the direct method is what is known as the “European Standard Population”.

Directly Age Standardised Mortality Rates per 100,000 Population for Coronary Heart Disease in Merseyside 1999-2001 Pooled

	Liverpool	England & Wales
Males under 65 years	81.41	52.82
Females under 65 years	25.17	13.69
Males aged 65-74 years	1209.04	796.80
Females aged 65-74 years	476.85	328.53

Source: Mersey Public Health and Intelligence Specialist Group

Nearly a quarter of people in Knotty Ash report a limiting long-standing illness, which is similar to the figure for Liverpool, but significantly higher than the proportion for England as a whole. Slightly less people in Central Ward report a Limiting Long-Term Illness.

Proportion of people in Merseyside with/without a limiting long-term illness

	Central	Knotty Ash	Liverpool	England
With a Limiting Long-Term Illness	15	27	24.6	17.9
Without a Limiting Long-Term Illness	85	73	75.4	82.1
All People	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

Proportion of people providing unpaid care for another is relatively high in Knotty Ash ward, where Broadgreen Hospital is based, compared to Central Ward, Liverpool, and to England.

Proportion of people in Merseyside providing unpaid care to another

	Central	Knotty Ash	Liverpool	England
All people who provide unpaid care	6.2	12.4	10.9	9
All people who do not provide care	93.8	87.6	89.1	91
All People	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

Most people in Merseyside report good health, and the proportion in Central Ward, where The Royal Hospital is based, reporting good health is slightly higher than the averages for Liverpool and for England as a whole.

Proportion of Merseyside people reporting good and ill health

	Central	Knotty Ash	Liverpool	England
Good Health	71	62.9	64.4	68.8
Fairly Good Health	19.7	22.1	21.7	22.2
Not Good Health	9.3	15	13.8	9.0
All People	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

A1.5 Education

There is a high proportion of residents in Central Ward with level 4 or 5 qualifications, compared to Liverpool as a whole, and to England. However, there is a high proportion of people with no qualifications in Knotty Ash Ward, compared to Liverpool as a whole, and, in turn, a higher proportion with no qualifications in Liverpool, compared to England as a whole.

Proportion of Merseyside people aged 16-74 with and without educational qualifications

	Central	Knotty Ash	Liverpool	England
No qualifications	18	42.3	37.8	28.8
Level 1 qualifications	6	15.1	14.5	16.6
Level 2 qualifications	11	16.9	16.4	19.3
Level 3 qualifications	38	6.8	10.5	8.3
Level 4 / 5 qualifications	24	12.5	15.2	19.9
Other qualifications: Level unknown	2	6.3	5.6	6.9
All People aged 16-74	100.0	100.0	100.0	100.0

Source: 2001 Census (from www.neighbourhood.statistics.gov.uk/)

* Taken from Ward Profile Series (April 2004), Tables 7.1 and 8.1, available from:

- http://www.liverpool.gov.uk/Images/PMD%20112%20-%20Ward%20Profile%20-%20Warbreck_tcm21-29287.pdf
- www.liverpool.gov.uk/Images/PMD%20096%20-%20Ward%20Profile%20-%20Fazakerley_tcm21-29271.pdf

Summary of Environmental Impact Assessment

Traffic and Transport

- The construction of the hospital on its own is not expected to cause significant environmental effects in terms of severance, driver delay, pedestrian delay, pedestrian amenity, fear and intimidation or accidents.
- Once the other health care related uses are complete, level of traffic will remain unchanged, although distribution may change - the traffic flows on Prescott Street, east of the main hospital access would see an increase of over 30%. This level is sufficiently high that it can cause severance of facilities on opposite sides of the road. However, in this case, the land uses fronting this part of Prescott Street are primarily non residential, and pedestrian activity across the carriageway in this area is likely to be relatively low. The level of exposure to the severance effect is therefore low and consequently the effect is considered to be not significant.
- A Traffic Management Plan will also be required to identify routing of lorries and provision of parking for cars and light goods vehicles.

Noise and vibration

- A noise assessment has been undertaken to determine both the effects of noise at the nearest neighbours to the proposed development as well as the effect of other land uses on the hospital, including the on-site construction and demolition operations and traffic movements surrounding, and associated with the developments on site.
- Many road segments are likely to experience a decrease in traffic flows and therefore reduced noise levels.
- Demolition and construction noise, however, particularly for patients of The Royal and the Dental Hospital, is of concern as these people are considered to be particularly vulnerable to noise effects and would be closer to the noise and vibration sources.
- A Noise Management Plan will be prepared which will identify noise and vibration control measures including limits to hours of operation; noise and vibration monitoring requirements and limits; and actions to be taken in response to limit exceedences and/or complaints.

Air Quality

- The assessment considers the effect of changes in road traffic resulting from the development, local air quality and of the emissions from the hospital boilers and combined heat and power (CHP) plant. The assessment shows that the redevelopment of the hospital will not substantially change traffic flows, so air quality will not get significantly worse.
- The construction and demolition works that will be required during the re-development have the potential to generate dust. The implementation of a Dust Management Plan, which will include on-going monitoring, should reduce the potential for nuisance dust affecting nearby sensitive people and locations.
- A new energy centre would also be built to serve the new hospital and it is likely that in 2012, both energy centres would be operating on a temporary basis. The likely emissions

from both energy centres have therefore been modelled and the results show only a very small change in air quality as a result.

- Once the new hospital is complete, the existing CHP, boilers and energy centre will be decommissioned and removed.
- None of the activities on site would result in the national limits for air quality pollutants, or Air Quality Objectives, to be exceeded and the air quality effects of the development are not considered to be significantly worse as a result of the hospital re-development.

The Water Environment

- The scoping study identified that groundwater flooding, groundwater quality and water quality in water courses to which water from the site will eventually flow did not pose significant environmental risks. They were therefore not considered further and the assessment considers only drainage and flood risk on the site.
- The planning application is supported by a Flood Risk Assessment which looks at the risk of flooding as a result of development on the site. Once the design details are finalised, a drainage scheme will be designed which will ensure that there would be no risk to flooding of sewers, drains or other areas from the site. The calculations include an allowance for climate change to 2085.
- Water quality associated with pollution during construction has been considered. Generally it is considered that the risk of pollution will be reduced by good site management and use of good practice measures.

Land quality

- An investigation into potential areas of contamination has been undertaken on parts of the site which are not currently built on. This has revealed the presence of contaminants in the soil arising in some areas of 'made ground' i.e. areas that have been infilled in the past. Further comprehensive site investigation during the redevelopment of the site will be required to identify the full nature and extent of existing contamination. The contaminated material will be removed from the site and disposed of at a suitable facility.
- The incorporation of appropriate mitigation measures during the construction phase, including the use of Personal Protection Equipment (PPE) and the adoption of management procedures following training of site staff, will minimise the risk of exposure of construction workers to contaminated materials that have the potential to cause adverse effects to health to acceptable levels.
- Dust can be released during earthmoving operation, and the risk of a pathway link to adjacent users from the contaminated element of the made ground in the west of the site exists. Dust control measures during the construction operations will reduce this risk to acceptable levels. Following the completion of construction it is concluded that no residual risk would exist.
- The incorporation of mitigation measures during the construction phase will ensure that future remedial works are designed and undertaken to minimise the risk of any increase in infiltration of rainwater and surface water runoff. It is concluded that the residual risk would be negligible.

Ecology and Nature Conservation

- An ecological assessment was carried out on the site. There are no designated ecological sites within 2km of the hospital and the site is primarily developed and supports very little vegetation.
- Breeding birds are therefore not considered to be a valued ecological receptor and have not been included in this assessment. There is however a need to undertake mitigation to avoid committing an offence under wildlife legislation. This would be achieved through timing any vegetation clearance works and building demolition to avoid birdnesting season. Where this is not possible an ecologist would check the area for breeding birds prior to construction to avoid disturbance. Mitigation in the form of a Method Statement outlining the dismantling of these features by hand would ensure that no offences are committed under the wildlife legislation.
- The site is considered to be of no more than 'local value' to bats and bats are therefore not considered to be at risk from significant adverse effects as a result of the proposed developments on this site.

Visual assessment

- The visual assessment considers the potential effects of the proposed development on visual receptors, including people viewing from nearby properties, local communities and transport routes. Visual effects may include the obstruction or reduction of a view, night time light pollution or increased visibility due to changes in colour and movement. Twelve viewpoints were selected to assess these proposals.
- Significant visual effects are expected to occur at locations close to the hospital. These would be largely negative during construction and demolition as activities (including some ground level activities) would become a major component in close distance views for a temporary period.
- However, once operations are complete, the views are likely to be positive due to the design of the new buildings, which would be developed following consultation with the local community and would be more attractive in terms of forms and materials than the buildings to be demolished. Development of the site would not cause a notable change to the skyline.

Archaeology and the Historic Built Environment (Cultural Heritage)

- The potential effects of the development on archaeological and cultural heritage features were assessed by a desk study and a site visit.
- Before the hospital was built, the site was largely residential. Also within the site boundary were St Jude's church which was demolished to make way for the hospital and a Jewish burial ground. Foundations or other subsurface remains of St. Jude's Church or other buildings within the site may remain, therefore, archaeological monitoring, referred to as a "watching brief", would be used to ensure that any subsurface remains encountered would be identified and recorded.
- The assessment concluded that the Church of the Sacred Heart may be affected due to the proximity of some of the proposed buildings which will partially enclose the church on its southern and western sides. The church was originally surrounded by development but it is now in an area of relatively open space. The proposal does not restore the Church's original residential setting, however, it does re-establish it within a built-up area. This setting would be no more incongruous to the Church than its existing setting, and therefore the effect will not be significant.

People and Business (Socio-economics)

- The EIA considers the effects of the proposed development on local employment and considers the wider effects of the scheme upon social and community infrastructure within Liverpool.
- The construction of the hospital and related developments is expected to employ up to 1000 people at peak times during the construction period, and it is expected that this could have positive effects through direct employment and the contribution to the local economy of contractors working in the area.
- Although employment at the hospital is unlikely to change there is expected to be a significant and positive effect on local employment arising through employment in the other healthcare related developments on site, as and when these occur.
- The community surrounding the hospital will be affected by the construction of the new hospital but the use of programmes to minimise disturbance, particularly the Considerate Constructors' Scheme, is expected to mitigate any significant disruption to the local community.
- In the longer term, there is expected to be an improvement in quality of facilities for hospital care, as well as on-site provision for additional healthcare related facilities which is expected to have a significant beneficial effect on the local community.

Conclusions

- The proposed redevelopment of The Royal site will offer a number of benefits including a more attractive set of buildings and new jobs. The design of the project has evolved so as to minimise significant effects both during construction and when the site is complete and occupied.

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