Report of the Joint Health Service Executive / Department of Health and Children Task Group to advise on the optimum location of the new national paediatric hospital

May 2006

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Acknowledgements

The Joint Task Group wishes to thank most sincerely all stakeholders for their cooperation with the process undertaken by the Group, in particular the adult academic teaching hospitals, the paediatric hospital and the maternity hospitals, who responded to requests for detailed information and meetings at short notice.

The level of co-operation with the process, which aims to achieve a new national paediatric hospital in the best interests of all the children in Ireland, is greatly appreciated.

1. BACKGROUND

1.1 Review of Tertiary Paediatric Services

In late 2005, the Health Service Executive (HSE), in line with a commitment given by the Tánaiste and Minister for Health and Children, Mary Harney, T.D. undertook a national review of tertiary paediatric services. The overall objective was to provide an evidence base to facilitate the development of paediatric services in the best interests of children. Following a procurement process, McKinsey & Company were engaged by the HSE to advise on the future strategic organisation of tertiary paediatric services. The resulting report and its recommendations would be used to inform decisions on the future configuration of tertiary paediatric services in line with best international practice.

As part of the brief, McKinsey & Company were informed that the report and its recommendations should be evidentially based, fully documented and to be informed by:

- International best practice
- Working models in the delivery of paediatric care
- Current and projected demographics in Ireland
- The inter-relationship between secondary and tertiary care provision for children
- The requirement to provide paediatric secondary care and A&E services for children in the greater Dublin catchment area
- Emerging clinical trends
- Technological developments

Specifically the report was to identify:

- Whether tertiary paediatric services should in future be provided at one or more locations
- Facilities required to meet tertiary paediatric needs
- Facilities required to meet secondary paediatric service needs in Dublin

The HSE supported the consultancy by providing:

- A detailed activity profile of paediatric hospital activity
- Copies of relevant Irish publications
- Project liaison

1.2 "Children's Health First" – International Best Practice

The report - *"Children's Health First" International best practice in tertiary paediatric services: implications for the strategic organisation of tertiary paediatric services in Ireland* – was completed by McKinsey & Company and presented to the HSE on 2nd February 2006.

"Children's Health First" is based on established research and included examination of 17 international centres of paediatric excellence (representing a range of healthcare models). These centres place provision of the highest quality of care as their primary goal. Striving for quality of care means striving for optimum health outcomes and experiences for children.

As outlined in "Children's Health First", quality is critically dependent on having genuine breadth and depth in sub specialist services, a "critical mass". There was strong, practically unanimous, support among the hospitals and experts consulted by McKinsey & Company in relation to the two critical enablers required to achieve "critical mass" thereby driving quality of care and improved outcomes and experiences for children. To achieve sub specialist "critical mass", tertiary centres virtually always:

> (1) serve a large enough population to support a full complement of paediatric sub specialists; and
>
> (2) co-locate with an adult teaching hospital to access specialties that generally split between adults and children to facilitate clinical and academic cross-fertilisation and to attract the top staff[1].

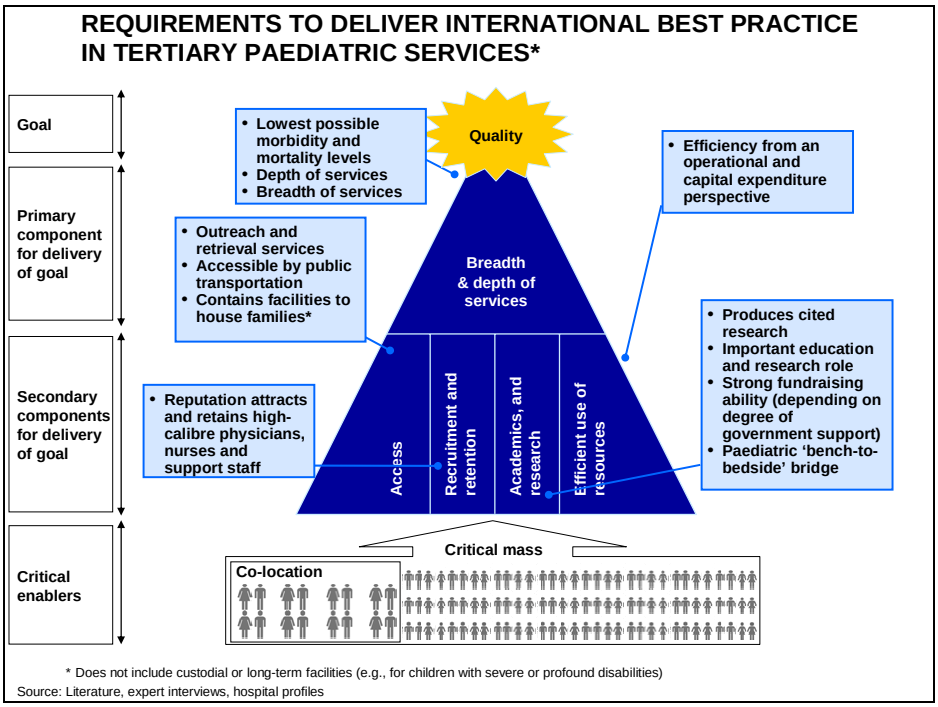
14 of the 17 sites examined by McKinsey & Company serve a population of more than 4 million and all bar two interviewees confirmed that a 4 million population could only support one tertiary centre.

15 of the 17 sites examined by McKinsey & Company are co-located with adult services and the hospitals and experts consulted cited many benefits from co-location that support sub specialty critical mass. Accordingly co-location is considered by McKinsey & Company to be the ideal for any healthcare system in developing high quality paediatric services.

The following diagram, from "Children's Health First" shows the required enablers and components which drive quality of care in leading international paediatric centres of excellence.

[1] Children's Health First defines co-located as "A hospital that is located in its own building but that is adjacent to an adult hospital. Most have covered walkways connecting the children's and adult services. Budget and governance may be integrated or separate" (page 28). The concept of co-location and its seminal importance in the context of developing best practice paediatric care will be discussed further later in this report.

Figure 1



* Diagram taken from "Children's Health First" International best practice in tertiary paediatric services: implications for the strategic organisation of tertiary paediatric services in Ireland (Page 12)

1.3 "Children's Health First" – Recommendations

The Report included a number of key recommendations *viz*:

- Population and projected demands of Ireland can support only one world class tertiary centre;

- The centre should have the following attributes:
    - Breadth and depth of service
        - A full complement of over 25 paediatric sub-specialties
        - International expertise in particular procedures and illnesses
        - Significant non-clinical services designed to provide holistic care for the child and its family e.g.: family accommodation, education and training, patient and sibling schooling, parent business facilities, overnight beds, restaurants, laundry.

    - Access
        - Accessibility through public transport
        - Outreach services taking specialists to the regions/communities
        - PICU/NICU retrieval services

    - Recruitment and retention
        - Emphasis on recruiting and retaining outstanding staff
        - Academic hub
        - Increased training/development opportunities

- Academics and research
  - Significant research, academic and fundraising capabilities
  - Research through integrated clinical/research time allocation
  - Academic/teaching core parts of the mission

- Efficient use of resources

  Human
  - Sufficient activity volume to support 24/7 consultant cover
  - Greater number of specialist allied health professionals involved in care
  - Improved patient access to specialists, e.g. through outreach programme

  Capital
  - Increased utilisation of capital intensive equipment
  - Improved utilisation of specialist units e.g. PICU
  - Ability to share very expensive or infrequently used equipment with adult centres, e.g. proton beam machines, research facilities etc.

- This centre should be in Dublin
  - It should ideally be co-located with a leading adult academic hospital
  - It should have space for further expansion (including education and research facilities)
  - It should be easily accessible through public transport and the road network

- The centre should be at the nexus of an integrated paediatric service also comprising:

  - Important outreach capabilities at key non-Dublin hospitals
  - Adequate geographic spread of A&E-type facilities. These centres are either stand alone or attached to an adult facility with no inpatient children's beds.

- This centre should also provide care for all the secondary needs of Greater Dublin

2. JOINT HSE / DOHC TASK GROUP

2.1 Establishment and membership

"Children's Health First" was considered and endorsed by the Board of the HSE at a meeting on 2nd February 2006. The Report was also presented to the Tánaiste and Minister for Health and Children. In advance of the public launch of the report, the findings of the report were presented to a number of key stakeholders, including the children's hospitals. The report was broadly welcomed as an important and exciting opportunity to develop paediatric services in the best interests of children.

A Joint HSE / Department of Health and Children (DoHC) Task Group was established in February 2006 to progress matters and, in particular, to advise on the optimum location of the proposed new hospital. The Joint Task Group also included representation from the Office of Public Works.

The membership of the Joint Task Group is listed in Appendix 1.

2.2 Timeframe

The initial timeframe for the completion of the task was two months.

This timeframe was subsequently extended to 1st June 2006 in order to address some important issues which emerged in the course of the Joint Task Group's work. These included the need to consider:

- Whether the new co-located adult/paediatric hospital should include a maternity hospital/unit
- Proposals received from the private sector

2.3 Meetings

The Joint Task Group worked intensively for the duration of the project. In addition to 21 plenary group meetings, there were 20 other meetings including meetings with a variety of stakeholders.

A list of the meetings held by the Joint Task Group is included at Appendix 2.

2.4 Methodology

The work of the Joint Task Group involved extensive information gathering, analysis and assessment exercises:

The overall approach taken by the Joint Task Group was to:

- Agree assessment criteria
- Request information to identify potential locations
- Consider submissions / views of interested parties
- Consult with external expertise
- Assess potential site locations
- Recommend optimum location for the new hospital

3. CO-LOCATION / TRI-LOCATION

3.1 Co-location

As outlined earlier, "Children's Health First" emphasises that achieving best outcomes for children is critically dependent on having genuine breadth and depth in sub specialist services, a "critical mass". To achieve sub specialist "critical mass", tertiary centres virtually always serve a large enough population to support a full complement of paediatric sub specialists and co-locate with an adult teaching hospital. It is worth reflecting on the definition and implications of the concept of "co-location" for the development of tertiary paediatric services in the best interests of children.

In "Children's Health First", McKinsey & Company defined co-location as *"within a practical walking distance"* or *"a hospital that is located in its own building, but that is adjacent to an adult hospital. Most have covered walkways connecting the children and adult services. Budget and governance may be integrated or separate"* (page 28).

"Children's Health First" found that the most recognised and renowned children's hospitals around the world are co-located with adult services. In fact 15 of the 17 leading international hospitals examined as part of that review are co-located with adult services.

Furthermore, "Children's Health First" noted that while pragmatic considerations such as space and access as well as cultural / managerial fit / quality of managed service provision were important, the international evidence is that most recent decisions in relation to location for new build paediatric hospitals have supported co-location with adult services.

The hospitals examined by McKinsey & Company and interviews held with leading international experts support the view that there are many benefits for paediatric services in being co-located with adult services. These benefits are discussed briefly below:

1. Breadth and depth of services

Co-location with an adult hospital can facilitate the sharing of staff in sub-specialties where the caseload in a children's hospital alone would not justify a children's only service and thereby support quality of care. The collaboration of adult and paediatric specialists creates a larger critical mass of specialists in a particular area which in turn can lead to improved outcomes in areas such as cardiothoracic surgery and transplantation.

McKinsey & Company undertook a review of literature supporting the link between volume and improved outcomes. The Bristol Inquiry (2001) in the U.K. investigated mortality of paediatric cardiac patients and concluded that greater scale and better expertise could have prevented the deaths of 35 infants in Bristol Hospital over the four year period examined. An important recommendation of the Bristol Report was that *"Children's acute hospital services should ideally be located in a children's hospital which should be physically as close as possible to an acute general hospital"*. Furthermore the Scottish Review of Paediatric Services (2003) specified that *"Children's specialist acute services should be co-located with adult, maternity and neonatal services"*.

As well as facilitating a critical mass of subspecialty workload thereby improving quality of care, co-location can also facilitate enhanced care for children with chronic care conditions which traverse into adulthood. Examples include cardiac, cystic fibrosis and diabetes patients.

2. Efficient use of resources

There are ongoing operational cost benefits to co-locating paediatric with adult services, in terms of close access to expensive diagnostic machines or equipment that might not be justifiable in a standalone paediatric hospital and also potential for sharing and achieving efficiency in other operational areas. This is an important consideration in the context of the extremely high operational costs for hospitals, which quickly dwarf capital development costs.

3. Teaching and research

Co-locating with adult services provides more opportunities for professional collaboration and continuing medical education in that it facilitates "cross fertilisation" between adult and paediatric specialists. Co-location with an adult teaching hospital will also enhance both the research environment and the research capacity on the single site.

3.2 Tri-location

While the case for locating the new paediatric hospital with maternity services was not explicitly emphasised in "Children Health First" almost all of the international leading children's hospitals referred to in the report are located with adult services which include maternity services.

A number of internationally renowned hospitals referenced in "Children's Health First" were consulted by members of the Joint Task Group. All emphasised the clinical, research and operational benefits of tri-location of paediatric, adult and maternity services. The Joint Task Group also noted the recent decision in Greater Glasgow to tri-locate paediatric, adult and maternity services.

Discussion with and submissions from a number of key stakeholders, including the three Dublin maternity hospitals[2], the three existing paediatric hospitals and the Council for Children's Hospitals' Care emphasised the benefits of tri-location.

Tri-location can have benefits for the following areas:

(1) Complex neonatal cases.

In cases where neonates would require the highly specialised care only available in the tertiary paediatric hospital, the location of the tertiary paediatric hospital adjacent to the obstetrical delivery unit would reduce the need to transfer neonates by ambulance. In the context of increased capabilities in the area of prenatal diagnosis of congenital conditions, such as cardiac cases or congenital abdominal wall defects, tri-location of maternity, adult and paediatric facilities is considered to be extremely beneficial in terms of optimising outcomes for neonates.

[2] The Coombe Women's Hospital; The National Maternity Hospital, Holles Street; The Rotunda Hospital.

(2) High Risk Obstetric Cases

In the event of a life threatening postpartum haemorrhage, or other acute conditions, such as severe pre-eclampsia or maternal trauma, the location of maternity with adult services can ensure rapid access for the woman to the necessary services, including ICU if necessary. The location of maternity with adult services can also ensure the availability of other services to mothers – such as MRI etc. - without the need to transfer the mother offsite.

(3) The development of foetal surgery / foetal medicine

Foetal medicine and surgery is a developing clinical area and likely to be a future growth area. This would be most appropriately developed in the context of location of maternity, paediatric and adult services.

In the context of the information available in support of tri-location, submissions were invited from each of the three Dublin maternity hospitals outlining their views on the appropriate model, scope and scale for a maternity / neonatal service that could be accommodated as part of the new paediatric hospital and the consequential implications for maternity services in the city. Meetings were then held with all of the Dublin maternity hospitals to discuss their views further.

Each of the hospitals acknowledged the desirability of maternity units being on the site of an adult hospital. Each of the hospitals strongly supported the concept of tri-locating a full maternity hospital with the tertiary paediatric hospital and its partner adult hospital. This full maternity hospital would include a neonatal unit where complex neonatal medicine and other neonatal surgical work would be centralised. Further, all of the maternity hospitals indicated a willingness to move onto the chosen site for the paediatric hospital in order to facilitate true tri-location.

A recommendation in relation to the future configuration of maternity services in Dublin was beyond the scope and timescale available to the Joint Task Group. However, given the strength of the case emerging for a model of tri-location of paediatric with adult and maternity services, it was decided that the Joint Task Group would need to satisfy itself that potential sites demonstrate the capacity to accommodate an appropriately sized maternity hospital on site.

4. IDENTIFICATION OF POTENTIAL SITE OPTIONS

A key objective for the Joint Task Group was to identify potential site options for the location of the new paediatric hospital. A multi-strand approach was adopted to identify potential sites. Information was sought from the following sources:

4.1 Request for information from six adult academic teaching hospitals in Dublin

As discussed earlier, a key recommendation of "Children's Health First" was that the new hospital would ideally be co-located with an adult academic teaching hospital in Dublin. In this context, the Joint Task Group wrote to six identified adult academic teaching hospitals in Dublin:

- Beaumont Hospital
- Connolly Hospital, Blanchardstown
- Mater Misericordiae Hospital
- St. James's Hospital
- St. Vincent's University Hospital
- The Adelaide & Meath Hospital, incorporating the National Children's Hospital, Tallaght (AMNCH, Tallaght)

seeking information to establish (a) whether the hospital was interested in being considered as the co-location site, and (b) if so, to provide the hospital with an opportunity to demonstrate its approach to meeting the recommendations of "Children's Health First". Information was requested in line with a provided template.

A copy of the letter issued is attached at Appendix 3.

4.2 Other potential locations

In addition to requesting information from the adult academic teaching hospitals in Dublin, information was gathered from a number of other sources:

- The HSE was requested to provide information in relation to any potentially suitable land banks/sites within the current HSE property portfolio

- The OPW was requested to identify sites within the current OPW property profile, or potentially available to it, which could be considered as potential locations for the new hospital. The OPW was also asked to provide any advice in relation to privately owned "brownfield" sites adjacent to any of the six identified adult academic teaching hospitals in Dublin which it could consider as potential locations

- Information was requested from the local authorities in Dublin - Dublin City Council, Fingal County Council, Dun Laoghaire / Rathdown County Council and South Dublin County Council – in relation to land adjacent to the adult academic teaching hospitals in Dublin in their ownership which might be available to be considered as a potential location. The Councils were also offered the opportunity to express any views which might inform the work of

the Joint Task Group in relation to the location of the new paediatric hospital, in particular the implications for the social infrastructure of the city.

- Proposals were received from a variety of private organisations. These ranged from offers to sell land to proposals to build a paediatric hospital. A Dublin maternity hospital also expressed interest in being considered as a site to locate the new paediatric hospital.

A full list of all the potential locations for the new paediatric hospital identified to the Joint Task Group is attached at Appendix 4.

5. CONSULTATION PROCESS

In addition to consultations with the six adult academic teaching hospitals, the Joint Task Group engaged in an extensive consultation process with the following:

- Patient advocacy / representatives group
- Paediatric hospitals
- Maternity hospitals
- Private organisations
- International consultation
- External expertise

5.1 Patient advocacy / representative groups

It was considered appropriate, as part of the Joint Task Group's remit, to take into account the views of patient advocacy / representative groups in relation to the location of the paediatric hospital. To this end, a nominated subgroup of the Joint Task Group met with a range of interest groups. A meeting was also held with representatives from the Council for Children's Hospitals Care and the Children's Research Centre. A list of the meetings held by the Joint Task Group is included at Appendix 2.

The Joint Task Group considered correspondence received from a number of other individuals and organisations.

The following is an overview of the views expressed at meetings with representatives of the Joint Task Group:

- "Children's Health First" was broadly welcomed and the *prime opportunity to develop a world class paediatric hospital* was emphasised;
- The need for a speedy delivery of new facilities for children was emphasised;
- The requirement for adequate *space* to build such a world class paediatric hospital was clearly emphasised;
- The key expectation of those consulted was improved facilities in the new hospital. A number of suggestions were make in relation to the functional content of the new paediatric hospital:
    - Appropriate accommodation for families –bedside, on-campus, as well as access to a reasonable supply of well located and affordable local private accommodation options
    - Recreational and utility space for families – including out-of-hours canteen services, kitchen facilities, play areas for siblings
    - Appropriate bereavement facilities and space to discuss a child's case
- The need for the hospital to be easily *accessible* for all patients was emphasised;
        - Guaranteed, affordable parking should be available, particularly for the families of long stay patients
        - Parking facilities could be remote from the hospital provided there is adequate shuttle / transfer arrangements.
        - Good public transport links

- The need to develop appropriate services for the *transition from paediatric to adult services*;
- Many suggestions were made in relation to meeting the needs of specific groups of patients – adolescents; cardiac patients; cystic fibrosis patients etc;
- The importance of a strong independent research centre which could benefit from co-location with adult research facilities:
- Advancements in technology should be fully exploited and incorporated into the design and build of the new facility;
- The need to provide maternity accommodation within the paediatric hospital so as to avoid separation of new mothers from their sick children who are transferred following birth to the paediatric hospital
- In the context of the proposed amalgamation of three children's hospitals
    - The need to communicate clearly arrangements for emergency / urgent care access for local catchment populations;
    - The impact on the social infrastructure of deprived areas of the city, in particular in relation to job displacement.

In summary, the feedback received indicated that the quality of care is the most important factor in developing a new paediatric hospital.

5.2 Paediatric Hospitals

The current paediatric hospital providers in Dublin – Our Lady's Hospital for Sick Children (OLHSC), Crumlin; the Children's University Hospital, Temple Street; the National Children's Hospital, Tallaght - were invited to submit their views in relation to the location of the new paediatric hospital. The Joint Task Group also met with each of the paediatric providers.

It is important to note that each of the paediatric hospitals expressed strong support for the development of a single hospital which would deliver paediatric services in line with best international practice. The consultant representatives at the meetings reiterated their commitment to move to the new hospital, regardless of its location.

Each of the hospitals emphasised the crucial need for capital investment in paediatric services and in this context stated that decisions in relation to the new paediatric hospital need to be taken urgently and the project delivered as soon as possible.

In discussing the model for the "A&E/urgent care facilities" recommended in "Children's Health First", the three paediatric hospitals stated that these centres would be managed and staffed from the new single national tertiary hospital. There could be scope for such centres to deliver services on an outreach basis, such as day case work, outpatients, minor injuries/illness treatment. Crucially however, these centres would not have any inpatient beds.

In the context of the inclusion of the urgent care centres with potential capacity for OPD and day surgery as part of the paediatric care delivery system the view was expressed by the children's hospitals that the 585 upper bed limit envisaged in "Children's Health First" would far exceed bed requirements.

The importance of considerations such as access and space were emphasised by all the hospitals. In addition, the importance of co-locating with specialties which are delivered to adult and paediatric patients by the same consultants - in an Irish context this would include specialties such as cardiothoracic surgery, neurosurgery, plastic surgery, burns, renal transplantation - was emphasised. However, the fragmentation of such adult specialty services across a number of sites in Dublin was acknowledged.

In relation to governance all three hospitals expressed a preference for an independent governance structure for the paediatric hospital with provision for an overarching governance arrangement with the other hospital/s on site to ensure co-location/tri-location benefits are optimised.

5.3 Maternity Hospitals

While not explicitly stated in "Children's Health First", the benefits of locating maternity with paediatric services were brought to the attention of the Joint Task Group.

It was in this context that written submissions were sought from each of the three maternity hospitals outlining their views on the appropriate model, scope and scale for a maternity/neonatal service that could be accommodated as part of the new paediatric hospital and the consequential implications for maternity services in the city. Meetings were then held with each of the hospitals offering an opportunity to discuss the views further.

Each of the three Dublin maternity hospitals strongly supported the concept of tri-locating a full maternity hospital with the tertiary paediatric hospital and associated adult hospital.

A full scale maternity hospital – rather than a unit dealing solely with complex neonatal and high risk pregnancies – would be required to ensure critical mass of maternity workload.

The three hospitals agreed that the tri-location model would include a full maternity hospital, including a neonatal unit where complex neonatal and other subspecialty areas of work would be centralised.

International best practice indicates that maternity hospitals should not exceed 8,000 births per annum and each of the three Dublin maternity hospitals are at this scale.

The three hospitals stated that each of them would have an ongoing need for neonatal services, even if complex neonatal and other subspecialty areas of workload were to be centralised in one hospital.

In relation to governance, all three hospitals expressed a preference for an independent governance structure for the maternity hospital with provision for an overarching governance arrangement with the other hospital/s on site to ensure co-location/tri-location benefits are optimised.

5.4 Proposals from Private Organisations

Proposals were received from five private organisations. Meetings were held with their representatives who gave each the opportunity to present how their proposal would meet the criteria developed by the Joint Task Group.

The proposals as presented at the meetings ranged from offers to sell land to proposals to build a paediatric hospital. The presentations emphasised:

- the "greenfield" nature of the proposed sites which could result in the new hospital being built in a relatively short timescale
- the proximity of the sites to major public and private transport links
- willingness to be flexible in relation to governance options

It was noted that one of the proposals from the private sector offered to build the paediatric hospital on a not-for-profit, open book basis.

None of the proposals presented were co-located with an academic teaching hospital as defined in the "Children's Health First" report.

5.6 International consultation

In relation to the clinical aspects of the assessment, information was sought by the Joint Task Group from a number of the leading international hospitals identified in "Children Health First". Advice was also sought from clinicians in other countries on specific issues. Information available within the HSE regarding current adult and paediatric care linkages and acute paediatric activity across the Dublin hospitals was also analysed.

5.7 External expertise

It was decided that, where appropriate, external expertise could be consulted to complement the skill base available within the Joint Task Group and to facilitate completion of the work within the timeframe.

Given the importance of access as a consideration in the process, the Small Area Health Research Unit (SAHRU) in Trinity College Dublin was commissioned to undertake a study to identify travel times by public and private transport means, for both the national and local catchment populations, to a number of locations.

Representatives of the Joint Task Group also held informal discussions with the HSE Ambulance Services and the Pre Hospital Emergency Care Council in relation to ambulance access to hospital sites in the Dublin area.

5.8 Other

Members of the Joint Task Group represented the HSE and DoHC at an appearance before the Joint Oireachtas Committee on Health and Children to discuss the new tertiary hospital for children on Thursday, 11th May 2006.

6. ASSESSMENT CRITERIA

6.1 Overview

The Joint Task Group developed a set of assessment criteria to assist in achieving their task to advise on the optimum location for the new paediatric hospital.

The key criteria identified for assessment of the potential sites were:

- Co-location benefits
- Planning and development considerations
- Governance
- Access

A number of sub criteria and areas for consideration were developed for each of the main criteria to assist in undertaking an in-depth assessment of potential locations under each criterion.

6.2 Co-location benefits

As outlined earlier in the report, "Children's Health First" highlights co-location with adult services as a requirement to achieve "critical mass" to deliver quality of care, i.e. optimise outcomes and patient experience.

Criteria

- Breadth and depth of services
- Level of subspecialty critical mass
- Research
- Level of paediatric activity in the adult hospital
- Level of shared appointments with paediatric hospitals

Considerations

Physical

- Is the site co-located (i.e. on the campus of / immediately adjacent to) with an adult academic teaching hospital.
- Tri-location potential

Clinical

- Current consultant level linkages between adult and paediatric hospitals
- Ranking of specialties to be co-located with paediatric hospital

Capacity for shared resources

- Clinical areas and non-clinical workforce and facilities
- Clinical and non-clinical support services

Academic (Education and Research)

- Existing status / track record in academia of the host hospital covering:
  - Education
  - Research

- Existing academic facilities and ease of access thereto (proximity to site)
- Capacity to share existing academic facilities
- Ability and willingness to accommodate significant additional academic facilities on site
- Willingness and ability of host hospital to accommodate - in whatever way is required - all relevant universities / teaching research institutions with paediatric interests

6.2 Planning and development considerations

The main objective was to assess the capacity of potential locations to accommodate the new paediatric hospital and a full maternity hospital alongside other site development proposals.

Criteria:

- Space / capacity for the children's hospital and maternity hospitals
- Construction and enabling works
- Further expansion capacity

Considerations:

- Space - Ability to meet projected tertiary and secondary needs (with capacity to expand including potential to accommodate research and education facilities)
- Site Area
- Capacity to accommodate a paediatric hospital as defined in "Children's Health First"
- Capacity to accommodate a maternity hospital of the order of 25,000m^2
- Expansion capacity as indicated for:
    - Children's hospital
    - Adult teaching hospital
    - Other service development
- Distance to Adult Teaching Hospital
- Impact on Development Control Plan (DCP), including traffic management
- Site constraints, including planning issues
- Infrastructural/utilities capacity
- Helipad
- Scope of site to deliver suitable quality of environment
- Likely height and density of development
- Conditions in adult hospital during development phase
- Car parking capacity
- Car parking location
- Attractive work environment
- Enabling works required and timescale
- Impact of development on existing hospital

- Other development planned to run concurrently on the same site
- Programme for development - phasing & sequence
- Specific/abnormal costs arising
- Site ownership – timing and cost factors

6.3 Governance

The Joint Task Group considered a range of options for governance of the new hospital. Three possible options were put forward for consideration as follows:

- The new hospital to be fully independent of the host hospital
- "Joint entity" to operate both hospitals
- Host hospital to operate the new paediatric hospital

The Joint Task Group considered that it would be preferable that the paediatric and maternity hospitals each have an independent status for both the development and operational phases. There should also be provision for an overarching mechanism designed to ensure that co-location / tri-location benefits are fully optimised.

In this context, it was considered important to establish whether the current site owners would be prepared to facilitate the preferred governance option and would be willing to cede the identified site for the development of the new paediatric and maternity hospitals, including further expansion capacity, unencumbered and at no cost to the State.

Criteria:

- Willingness to facilitate selected governance option and ease with which options can be implemented.

Considerations:

- Willingness to facilitate the selected governance option for the operational phase of the new paediatric and maternity hospitals
- Similar considerations in relation to the development phase of the hospital
- Willingness to cede the site for the paediatric, maternity and further expansion capacity, unencumbered and at no cost to the State
- Willingness of host hospital to significantly alter its current ownership base (including possible Ministerial or HSE ownership)
- Ease with which ownership / governance base of the host hospital can be altered
- Synergies between existing ownership/governance/provision and those planned for the new paediatric facility

6.4 Access

In addition to accessibility of the site, access as outlined in the 'Children's Health First' report incorporates outreach and retrieval services, facilities to house families

and links with secondary and community services. These features need to be factored into the model of care regardless of the location selected. For the purposes of assessing site options the criteria used were based on ease of transport to and from the site location for patients and families.

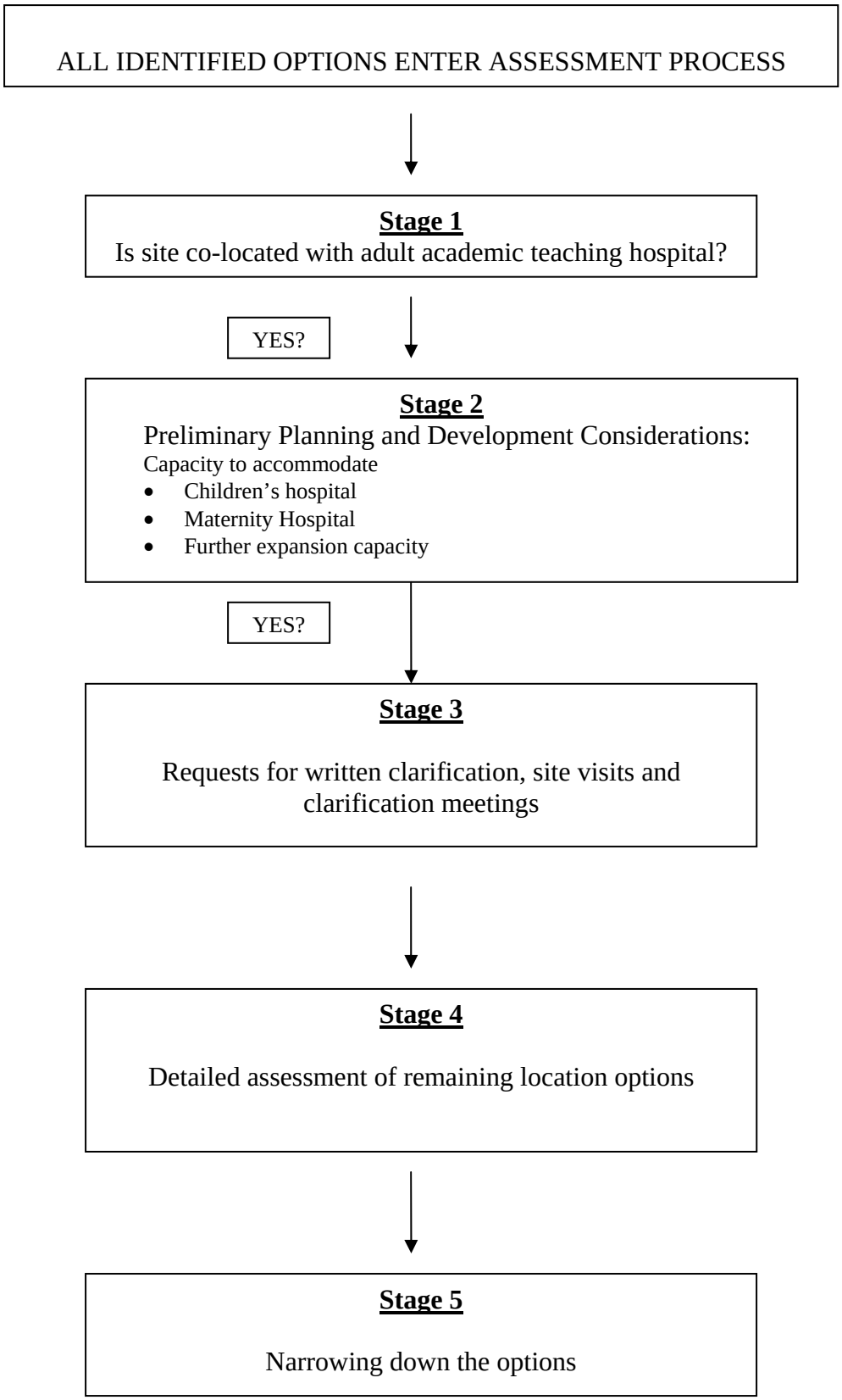
Criteria:

- Distance and time for travel of patients requiring tertiary care by both public and private transport means
- Distance and time for travel of patients requiring secondary care in the catchment area by both public and private transport means
- Potential / likely impact of planned transport infrastructural developments
- Accessibility for air and land-based emergency services

7. THE ASSESSMENT PROCESS

7.1 Overview of Assessment Process

The assessment process undertaken by the Joint Task Group is presented in the following table:



7.2 Assessment Process in Detail

As outlined above, the Joint Task Group took a multi stage approach to the consideration of site options.

7.2.1 Stage 1 (Co-location Consideration)

A first step was to assess all of the information submitted on the site options against the key co-location criterion, i.e.

- Is the site co-located (i.e. on the campus of / immediately adjacent to) an adult academic teaching hospital?

Neither the locations proposed by the private organisations, nor the locations identified from the information supplied by the OPW, HSE and Local Authorities, including the site at St. Brendan's Hospital, Grangegorman, were considered to be co-located - as defined in "Children's Health First" - with an existing adult academic teaching hospital.

Based on this core requirement, the following site options were considered to fulfil the criteria in relation to co-locating the proposed paediatric hospital with an adult academic teaching hospital:

- AMNCH, Tallaght
- Beaumont Hospital
- Connolly Hospital, Blanchardstown
- Mater Misericordiae Hospital
- St James's Hospital
- St Vincent's University Hospital

7.2.2 Stage 2 (Preliminary Planning and Development considerations)

An assessment of each of the above site submissions was undertaken in relation to:

- Capacity to accommodate a paediatric hospital as defined in "Children's Health First"
- Capacity to accommodate a maternity hospital of the order of 25,000m^2
- Expansion capacity as indicated for:
    - Children's hospital
    - Adult teaching hospital
    - Other service development

In relation to the planning and development considerations criteria, it was concluded that the aforementioned six sites all demonstrated feasibility, albeit to varying degrees and that all six sites were suitable for further in-depth consideration.

7.2.3 Stage 3 (Requests for written clarification, site visits, and clarification meetings)

In relation to the six identified locations, a number of generic and specific issues requiring clarification were identified in relation to the submitted documentation.

A sample clarification letter attached at Appendix 5.

The Joint Task Group undertook site visits to each of the six hospitals to provide an opportunity to view the sites and to clarify any site issues not addressed in the documentation provided.

Following the site visits, clarification meetings were held with representatives from each the six hospitals to provide them with an opportunity to explain further any aspects of their submission that still needed clarification.

7.2.4 Stage 4 (Assessment of remaining location options)

This stage of the process involved assessing each of the six location option against all of the criteria and considerations.

The four main criteria identified for assessment of the site options were:

- Co-location
- Planning and development considerations
- Governance
- Access

The sub criteria and considerations developed for each of the main criteria were used to facilitate an in-depth exploration of the merits of each location under consideration.

The assessment carried out under each of the above headings is detailed below.

Clinical co-location benefits

Overview

In order to assess potential sites on their clinical co-location benefits as identified in "Children's Health First" the Joint Task Group carried out the following:

- further analysis of selected literature/reports on the benefits of co-location,
- analysis of information received from the existing adult academic teaching hospitals with respect to clinical co-location benefits,
- analysis of the official HSE consultant staffing statistics in the relevant hospitals and their linkage with paediatric hospitals and academic centres
- analysis of the Hospital Inpatient Enquiry (HIPE) data[3] to ascertain the level of existing paediatric work carried out in the adult hospitals.

[3] The Hospital Inpatient Enquiry data are collected by the HIPE & National Perinatal Reporting System Unity of the Economic and Social Research Institute.

In addition, in order to inform the Joint Task Group's thinking and to act as a sounding board for these clinical assessments, interviews were carried out with the following international experts in the United States, Canada, Australia and the United Kingdom:

1. Professor Sir Alan Craft, Professor of Paediatrics University of Newcastle and President of the Royal College of Paediatrics.
2. Dr Mike Berman, Paediatric Cardiologist and former COO of New York Presbyterian Hospital (NYP). He is the former Professor and Chairman of Paediatrics at the University of Maryland (UM).
3. Dr Tony Cull, CEO The Royal Children's Hospital, Melbourne, Australia
4. Professor Les White, CEO Sydney Children's Hospital, Sydney Australia
5. Dr Tony Penna, CEO Westmead Children's Hospital, Sydney Australia
6. Dr Steven Altschuker CEO Children's Hospital of Philidelphia
7. Prof Andrew Calder, Chair of Advisory Group, New Children's Hospital, Glasgow

Expert opinion highlighted the added benefits of co-locating with an adult academic teaching hospital both in terms of clinical and research capacity. They also advised, that based on the current distribution of clinical specialities existing in Dublin adult hospitals, no one single speciality could be identified as being uniquely critical to the decision as to which adult hospital the newly proposed tertiary paediatric hospital should be co-located with. However, they were strongly of the view that the development of this new tertiary paediatric hospital should allow for a Level 1 trauma centre to emerge in the paediatric hospital. A level 1 trauma centre would be expected to have on-site paediatric departments of Orthopaedic trauma, Neurosurgery, General and vascular surgery, Plastic surgery, Cardiothoracic surgery, Head & neck surgery, Urology and Interventional radiology. That being so, the adult hospital site chosen to co-locate with the new paediatric hospital, should in so far as it is possible, support the provision of these requirements.

They also identified significant clinical advantages for additionally locating a maternity unit on the adult/paediatric site. This is in order to deal effectively with critically ill mothers, high risk deliveries and neonates.

The hospitals were assessed according to the agreed criteria in order to assess the various strengths of the existing adult teaching hospitals under consideration as to the value they would bring to the proposed paediatric hospital.

Breath and depth of services

Data provided to the Joint Task Group from the hospitals and the HSE consultant data base allowed the Task Force to identify the whole time equivalent complement of consultant posts for adult services in each hospital. These are outlined overleaf.

Hospital name	Beaumont Hospital	Connolly Hospital, Blanchardstown	Mater Misericordiae Hospital	St. James's Hospital	St Vincent's University Hospital	AMNCH, Tallaght
W.T.E. consultant posts	110	35	94	121	84	73

It should be noted that St Vincent's University Hospital has pursued a policy of building the clinical strength of neighbouring hospitals through joint appointments with other hospitals and that this has the effect of reducing their in-house total of WTE positions.

Level of subspecialty critical mass - specific clinical specialities where there are clear strengths within an existing location under consideration in comparison to all other alternative locations:

Data from the hospitals and the HSE consultant staffing statistics data base allowed the Joint Task Group to identify the depth of the existing specialities within each hospital and the added value that each hospital would bring to a paediatric hospital, over and above any other adult hospital. These are outlined below.

Beaumont Hospital would add specific clinical value to a co-located children's hospital with its neurosurgical and neurosciences departments. Renal transplantation and cochlear implant programmes at Beaumont Hospital are also important services for children. A designated radiotherapy centre is also due to be developed there.

The cardiothoracic surgeons in the **Mater Misericordiae Hospital** currently carry out paediatric cardiothoracic surgery in OLHSC, Crumlin. The Mater Misericordiae Hospital has the national cardiac surgery centre and carries out heart and lung transplantation (adults only) and has the national spinal injuries unit. It also has a child psychiatric unit.

St. James's Hospital is responsible for severe paediatric burns management. St. James's also has a major haematology unit and a designated radiotherapy centre is due to be developed there. It is the national maxillo-facial surgery centre.

St. Vincent's University Hospital has tertiary level expertise in the management of adult cystic fibrosis patients and the liver (adult) transplantation programme. However, the view of the Joint Task Group was that the hospital does not offer the same breadth and depth of tertiary services as some of the other hospitals.

AMNCH, Tallaght has a large orthopaedic surgery team and has done prominent work in the area of cardiac risk factor assessment and management. However, the view of the Joint Task Group was that the hospital does not offer the same breadth and depth of tertiary services as some of the other hospitals.

Connolly Hospital, Blanchardstown has only thirty five consultant posts. The view of the Joint Task Group was that the hospital does not offer the same breadth and depth of tertiary services as some of the other hospitals.

Teaching and Research

Data from the hospitals allowed the Joint Task Group to analyse the relative strengths of the various hospitals in the area of teaching and research. All of the hospitals have linkages with a University or medical school in Dublin with varying commitments to teaching. All hospitals submitted evidence of their research outputs from the different specialties on their campuses. The submissions from the hospitals demonstrated their research strengths.

All of the hospitals demonstrated an ability and willingness to accommodate significant additional academic facilities on site. They also stated that they would be willing to accommodate all relevant universities / teaching research institutions with paediatric interests.

The international experts suggested that a key challenge facing the new unified paediatric hospital would be to knit together and build on the academic strengths of the individual paediatric providers.

In essence, the six hospitals would add clinical, educational and research strengths to the new paediatric hospital. However, as demonstrated above, some have more to offer than others and this is explored further later in the report.

Level of paediatric activity in the adult hospital:

Given the existing configuration of specialities, not all paediatric workload is carried in the paediatric hospital. 2004 data from HIPE allowed the Joint Task Group to identify the tertiary paediatric workload carried out in each of the acute adult hospitals.

The most significant of these was in Beaumont Hospital and included neurosurgery/neuroradiology and cochlear implants.

Level of shared appointments with paediatric hospitals:

The Joint Task Group considered the current linkages between adult and paediatric hospitals as an indicator of the level of cooperation and experience of paediatric care that a new tertiary paediatric hospital could build on. Data from the hospitals and the HSE consultant staffing statistics database allowed the Joint Task Group to identify the current linkages in terms of **sessional** consultant commitments between adult and paediatric hospitals. These are outlined below.

Hospital name	Beaumont Hospital	Connolly Hospital, Blanchardstown	Mater Misericordiae Hospital	St. James's Hospital	St Vincent's University Hospital	AMNCH, Tallaght
Paediatric consultant sessions	43	0	140	56	13	64*

* The adult and paediatric hospitals in AMNCH, Tallaght are already co-located on the one site. The 64 sessional commitments identified for AMNCH, Tallaght represent off-site linkages with OLHSC, Crumlin and the Children's University Hospital, Temple St.

Of the Mater Misericordiae Hospital's 140 shared sessions, nearly all are with the Children's University Hospital, Temple Street. The key specialities they cover include: ENT Surgery (20 sessions), Child Psychiatry (19 sessions), Orthopaedic Surgery (12 sessions), Dermatology and Plastic Surgery (10 sessions each), Anaesthetics (9 sessions) and Vascular Surgery and Urology (8 sessions each). The Mater Misericordiae Hospital has also 17 shared cardiothoracic sessions with OLHSC, Crumlin.

All of St James's Hospital's 56 sessions are shared with OLHSC, Crumlin, the key specialities being: Haematology (24), Plastic Surgery (18) and Dermatology (8).

Beaumont Hospital's 43 shared sessions are split between the Children's University Hospital, Temple St and OLHSC, Crumlin and the key specialities covered are: Anaesthetics (11), Neurosurgery (7) and Immunology (6).

All of St Vincent's University Hospital's 13 sessions are with OLHSC, Crumlin: Plastic Surgery (7), ENT surgery (4) and Rheumatology (2).

Non-clinical co-location benefits

All six hospitals under consideration outlined clearly in the information supplied to the Joint Task Group how they could maximise a range of non-clinical co-location values. In essence the degree to which they could bring significant added value to the proposed new children's hospital was a function of their existing capacity. Larger hospitals, in terms of the existing range of services provided, were in a better position to maximise this potential. However, all of the hospitals displayed a willingness to ensure that the maximum added value would accrue in the co-locating process.

Site Planning and Development considerations

Overview

The six hospitals under initial consideration supplied information on site issues which was of a standard appropriate to the context and purpose of the exercise.

This information, together with responses to written queries and the subsequent site visits provided a basis for initial assessment, and brought the overall information to a point that left relatively few outstanding matters requiring further discussion in the final clarification meetings.

The information provided by the hospitals was viewed as illustrative of siting potential rather than in terms of any competitive exercise in relation to design approach or particular development arrangements presented in the illustrations and diagrams. The nature of solutions envisaged and illustrated by the hospitals varied in accordance with the characteristics of the sites concerned.

The diagrammatic illustrations of approach which were submitted by the hospitals were accepted as representing only one possible approach to the accommodation of the required development on any given site. It is important to emphasise that full briefing and design processes will need to be carried out in the normal way on the selected site in due course.

There are significant differences and advantages/disadvantages amongst the sites studied, particularly in relation to such matters as:

1. Site context
2. Overall site area
3. Land available for development
4. Extent, configuration and condition of existing facilities
5. Development constraints

Beaumont Hospital
There were no significant site issues which would constrain the creation of the proposed new paediatric hospital and maternity hospital at this location. The hospital offered assurance that existing contractual arrangements would not hinder the relocation of the existing multi storey car park to facilitate the children's hospital development. It was accepted that removal or relocation of this structure would create a development site of significant capacity and character.

Connolly Hospital, Blanchardstown
The question of road access was the only significant issue arising in relation to this large, unencumbered site, which has particularly good landscaping and orientation characteristics. Clarification from the hospital described a comprehensively costed and timetabled plan to provide the necessary access to the site by way of a new bridge from the N3.

Mater Misericordiae Hospital
The Mater Misericordiae Hospital presented a very detailed proposal which showed clearly that a paediatric hospital of the size required could be incorporated with a new adult hospital on the Eccles Street site. The capacity to include a maternity hospital was also demonstrated. Much work has already been done on site clearance and enabling work though more would be required.

The hospital confirmed that the proposed Metro station could be incorporated into the overall development scheme without any effect on timeframe for development of the proposed Children's Hospital.

St. James's Hospital
The site solution initially proposed contained a degree of planning and land acquisition risk. Clarifications offered by St. James's Hospital described an alternative site solution which essentially mitigated those risks.

It was confirmed that the site could demonstrate adequate on-site parking capacity to fulfil the requirement of the outline brief without a need for off-site capacity, although such off-site arrangements continue to be proposed and would add benefit.

St. Vincent's University Hospital
Initially there was a level of concern about the extent to which enabling and decant work issues would impact on the ability of the site to accommodate both the new paediatric hospital and other planned facilities expansion while maintaining existing services. Subsequent clarification and site inspection fully allayed those concerns.

The hospital confirmed that the proposed Children's Hospital could be accommodated and linked to the existing adult hospital without the need for construction of their entire proposed Phase 2 adult hospital development save for link communication via shared services facilities at basement and ground floor levels.

AMNCH, Tallaght
The initially proposed site solution appeared to contain a degree of land acquisition risk associated with the proposed relocation of traveller housing to free up part of the site. Subsequent clarification around this issue confirmed that the land in question was not in fact required for the proposed paediatric hospital, and that all enabling aspects may be satisfactorily accommodated within the existing hospital site, though the hospital felt that they wished to acquire the land in question to allow for what they considered a better overall site solution.

Initial Assessment

Each of the six sites, on initial assessment, demonstrated the feasibility of the proposed development as defined in the outline briefing information provided, and could accommodate the proposed new paediatric hospital.

As noted earlier, the question of accommodating a maternity hospital on the site to be recommended for the new paediatric hospital was addressed by the Joint Task Group. In this context, hospitals were asked to demonstrate explicitly their approach to accommodating a maternity hospital on site. For planning purposes only it was estimated that a facility of the order of 25,000m^2 floor area would be required, with capacity to connect to both adult and paediatric hospitals in a manner that would establish appropriate functional relationships in key areas, and to further exploit the benefits of adjacencies, ('tri-location'). The Joint Task Group was satisfied that all six sites could satisfy this requirement.

Having established that all of the sites could achieve general compliance with the basic planning and development feasibility criteria, the sites were then considered further as regards their relative advantages and disadvantages. Site characteristics and related issues were considered under four general headings as follows:

- Capacity for the development of the children's hospital
- Capacity for the development of a maternity hospital of the order of 25,000m^2
- Site constraints and enabling aspects including such issues as site clearance, obvious abnormal enabling issues and decanting requirements.
- Further expansion capacity taking account of current development plans, and other possible future service needs of either adult/children's hospital or otherwise, e.g. upgrade of facilities, other service development, etc.

Taking just these aspects into overall consideration Connolly Hospital, Blanchardstown emerged as the location most readily able to accommodate such development on its campus.

The capacity of Beaumont Hospital and AMNCH, Tallaght to accommodate this level of development was also clearly demonstrated, subject to an element of enabling /decanting works in each case.

The Joint Task Group formed a view that, while St Vincent's University Hospital, the Mater Misericordiae Hospital and St. James's Hospital could all accommodate development of the scale and complexity proposed, each of these three hospital sites presented a greater requirement for enabling / decanting works than the other three.

Governance

An essential requirement for the HSE / DoHC would be to ensure that the appropriate governance arrangements could be put in place for both the development and operational phases on the selected site. In this regard it was decided to consider the site options in terms of meeting the governance criterion before further detailed consideration of other factors.

Hospitals were asked for written confirmation that the owners would be willing to cede the identified site for the development of the new paediatric hospital, a maternity hospital and further expansion capacity unencumbered and at no cost to the State. A copy of this letter issued is attached at Appendix 6. The Joint Task Group was conscious that the site owners were being asked to consider significant governance issues, including ceding of site, in a relatively short timeframe.
However, taking account of the written responses provided by the five hospitals and given the status of Connolly Hospital, Blanchardstown as a HSE owned hospital, the Joint Task Group was satisfied that all six sites would meet the governance requirements for both the hospital development stage and the operation of the new paediatric hospital.

Access

Adequate access to the paediatric hospital was also considered to be an essential requirement. It should be noted that the Joint Task Group acknowledged that the new paediatric hospital may have the potential to offer tertiary services to patients from outside the jurisdiction. However for the purposes of assessing accessibility, analysis of transport times was based on the Republic of Ireland. As noted earlier for the purposes of assessing site options the criteria used were based on ease of transport to and from the site location for patients and families.

Criteria

- Distance and time for travel of patients requiring tertiary care by both public and private transport means
- Distance and time for travel of patients requiring secondary care in the catchment area by both public and private transport means
- Potential / likely impact of planned infrastructural developments

- Accessibility for air and land emergency services

The Joint Task Group concluded that it was not possible to make any significant distinction in terms of land / air emergency service access to the proposed sites.

As stated earlier, the Joint Task Group commissioned the Small Area Health Research Unit (SAHRU) in Trinity College Dublin to undertake a study to identify travel times by public and private transport means, for both the national and local catchment populations. This report, attached at Appendix 7, was used to facilitate assessment of the relative ease of access to the six co-located sites.

The population 0 -15 years was used and population projections were obtained from the Central Statistics Office publications. The secondary catchment area was based on the catchment used in the analysis undertaken in "Children's Health First", i.e. counties Dublin, Kildare, Wicklow and parts of County Meath. The tertiary catchment was defined as all areas in the Republic of Ireland.

The report provided detailed analysis by distance and time to travel by both public and private transport projections for secondary and tertiary catchment population including projections for 2016.

It was not possible for SAHRU as part of their report to undertake a statistical analysis of distance and travel times to the selected sites in the context of future transport developments. However the Joint Task Group decided, on the basis of the commentary in the SAHRU report in relation to future transport developments, that public transport developments would be likely to improve access via public transport means to all sites.

Following analysis of the report, it was agreed that the assessment would focus on examination of:

- the cumulative percentage of the population within 60 minutes travel time by mixed public /private transport for the secondary catchment
- the cumulative percentage of the population less than 4 hours travel time by mixed public /private transport for the tertiary catchment

Based on the findings of the SAHRU Report the Joint Task Group concluded that the only potential location where access would be a significant decision making factor was Beaumont Hospital.

7.2.5 Stage 5 (Narrowing down the options)

Governance
As stated earlier in the report all six potential locations demonstrated that they would meet the criteria in relation to the proposed governance arrangements.

Co-location benefits
Some hospitals have a distinct advantage over others in the context of co-location benefits.

In terms of the breadth of consultant staffing, and therefore the ability to add value across a maximum number of clinical areas particularly in regard of transitional care, St James's Hospital has the greatest number of current consultant appointments, followed by Beaumont Hospital and the Mater Misericordiae Hospital. With regard to depth of clinical specialisation Beaumont Hospital, the Mater Misericordiae Hospital and St James's Hospital have certain advantages over the other hospitals. Neurosurgery, neurosciences, the cancer programme, renal transplant and cochlear implantation are important strengths for Beaumont Hospital. The Mater Misericordiae Hospital's cardiothoracic programme, lung transplant and spinal injuries unit are important strengths in the Mater Hospital. The haematology, burns, pathology units and the cancer programme are important strengths in St James's Hospital. These strengths give these three hospitals added advantages for a paediatric hospital co-locating on their sites. With regard to the specialties that will complement the development of a level 1 paediatric trauma centre at the new hospital, St Vincent's University Hospital and AMNCH, Tallaght and Connolly Hospital, Blanchardstown are not national centres for Neurosurgery, burns treatment or cardiothoracic surgery. In the case of AMNCH, Tallaght, while there is a strong orthopaedic team there, the other hospitals also have considerable orthopaedic capacity.

The current paediatric caseload demonstrates the specific paediatric work done by Beaumont Hospital particularly in the neurosciences.

The paediatric shared appointments demonstrate the important relationship between the adult services at The Mater Misericordiae Hospital and the Children's University Hospital, Temple Street / OLHSC, Crumlin and between St James's Hospital and OLHSC, Crumlin over and above those pertaining elsewhere.

All the hospitals demonstrated research output with publications in key international journals. However the volume and import of the academic output of hospitals is a product of the size of their workforce. Hence the larger adult hospitals have an advantage in this regard.

Taking all these elements into consideration, the Joint Task Group concluded that Beaumont, St James's and The Mater Misericordiae hospitals have a clear advantage over the other proposed hospitals in terms of clinical co-location benefits.

In the absence of a detailed evidence base that gives greater value to one specialty over another, and in light of the existing configuration of existing specialties between the hospitals under consideration, it was not possible, utilising the clinical co-location benefits to further separate the hospitals concerned. It is important to note that all three bring significant benefits to a tertiary paediatric hospital; however, none have the full range of services required to support a Level 1 paediatric trauma centre within the paediatric hospital.

Access

Following detailed assessment of the adult hospital sites in relation to the criteria under "access" described elsewhere in this report, it was considered that Beaumont Hospital was significantly less suitable than St. James's Hospital or the Mater

Misericordiae Hospital in terms of ease of access, particularly for the secondary catchment population.

Consequently subsequent detailed assessment focused on St. James's and the Mater Misericordiae hospital sites.

Planning and development considerations - St. James's and Mater Misericordiae hospital sites.

Having considered the narrowing of options under the headlines of "Governance" "Co-location benefits" and "Access" as noted above, it was concluded by the Joint Task Group that further detailed assessment from a planning and development perspective should concentrate on the two hospital sites that offered greatest advantages, namely the Mater Misericordiae Hospital and St. James's Hospital.

Both of these sites share a number of critical characteristics, particularly their:

- Urban location
- Intensity of current use
- Varied building stock in terms of age, condition and function
- Issues of site access during construction
- Issues of maintaining acceptable clinical conditions during construction
- Potential for community gain and urban regeneration

Since the size, complexity, direct costs and programme for the construction phase of the Children's Hospital project will be essentially the same for these two urban locations, the assessment focused on areas where differences were most apparent.

The key relative advantages and disadvantages of each of these two sites, the Mater Misericordiae Hospital and St. James's Hospital, from a planning and development perspective only, are summarised below:

1. **The Mater Misericordiae Hospital:**

   Advantages:

   - Relatively clear site
   - Substantial portion of the enabling works required have already been completed
   - Demonstrable planning clarity, and 'back to back' synergy of concurrent adult and children's development
   - The future availability of the adjacent Temple Street

   Disadvantages:

   - Smaller site (6.15 hectares on main hospital campus plus buildings along Eccles St. and Nelson St.)
   - Less capacity to accommodate further developments
   - More sensitive planning and development context

2. **St. James's Hospital:**

   Advantages:

   - Greater site area and capacity (24.3 hectares)
   - Clearer ability to accommodate further developments

Disadvantages:

- Greater need for ‘enabling’ works
- Greater future costs associated with site preparation
- Potentially longer programme to delivery

From a planning and development perspective, both the Mater Misericordiae Hospital and St. James’s hospitals demonstrated capacity to accommodate a paediatric hospital of up to 585 beds with ensuing research capacity and a full maternity hospital of the order of 25,000m^2 albeit with a differing capacity for further expansion.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Location of Paediatric Hospital

Having assessed all the potential locations against the assessment criteria, the Joint Task Group concluded that there were two hospitals that offered the greatest advantages, namely the Mater Misericordiae Hospital and St. James's Hospital. Both hospitals demonstrated their ability to meet all of the assessment criteria set by the Joint Task Group. The strengths of these hospitals in terms of the assessment criteria are summarised below.

Co-location
In considering the clinical and academic strengths both the Mater Misericordiae Hospital and St James's Hospital offer very strong clinical and research environments in which to develop the children's hospital. Both would add value in terms of research strength, educational capacity and clinical synergy. The paediatric shared appointments demonstrate the important relationship between the adult services at the Mater Misericordiae Hospital and the Children's University Hospital, Temple Street / OLHSC, Crumlin and between St James's Hospital and OLHSC, Crumlin.

In terms of the breadth of consultant staffing, and therefore the ability to add value across a maximum number of clinical areas, particularly in regard of transitional care, St James' Hospital has the greatest number of current consultant appointments. The haematology, burns, pathology units and the cancer programme are important in St James's Hospital.

The Mater Misericordiae Hospital's cardiothoracic programme, lung transplant, child psychiatry and spinal injuries unit are important for the paediatric hospital. A further advantage for the Mater Misericordiae Hospital is that it is the only one of the hospitals under consideration to be currently accredited by the Irish Health Services Accreditation Board.

In the absence of a detailed evidence base that gives greater value to one specialty over another, and in light of the existing configuration of existing specialties between the hospitals under consideration, it was not possible, utilising the clinical co-location benefits to further separate the hospitals concerned.

Planning and development considerations
From a planning and development perspective, both the Mater Misericordiae Hospital and St. James's hospitals demonstrated capacity to accommodate a 380-585 bed paediatric hospital and a full maternity hospital of the order of 25,000m^2 albeit with a differing capacity for further expansion. St. James's Hospital is a bigger site (24.3 hectares v 6.15 hectares) and because of its size may have greater potential to accommodate further expansion needs.

Access
Following detailed assessment of the adult hospital sites in relation to access undertaken by the Small Area Health Research Unit (SAHRU), Trinity College, Dublin it was considered that both St. James's Hospital and the Mater Misericordiae Hospital offered advantages over other locations in terms of ease of access by public and private transport means for both the secondary and tertiary catchment populations. There was no significant difference between the two hospitals in terms of ease of access.

Governance
Both hospitals satisfied the Joint Task Group that they could accommodate a paediatric and maternity hospital on site under the proposed governance arrangements. They also provided written confirmation that the hospitals are willing to cede the site for the development of the new paediatric hospital, space required for a maternity hospital and further expansion capacity unencumbered and at no cost to the State.

Other considerations
On the basis of the above considerations it would not be possible for the Joint Task Group to put forward one of the above locations on a basis that renders it clearly distinguishable from the other site. However, in all of its deliberations the Joint Task Group was conscious of the urgent need to reach a decision on the location of the new paediatric hospital. **A point that was consistently and emphatically made to the Joint Task Group in the course of their work was the deficiencies in the existing children's hospitals infrastructure and the critical need for capital investment in paediatric services. The urgency of this requirement was emphasised by every stakeholder group with which the Joint Task Group met.**

Furthermore, the commitment of the existing paediatric hospitals in Dublin to set aside individual institutional ambitions in the interests of delivering a single tertiary paediatric hospital for Ireland which would ensure the delivery of healthcare services to children in line with best international practice was noted.

In this context, the Joint Task Group considered that it was critical that the assessment process resulted in a clear recommendation to build on the momentum and goodwill displayed by all parties following the publication of "Children's Health First" and to deliver a world class facility for children in the shortest time possible. In this regard there are two further issues that were considered by the Joint Task Group

Speed of Project Delivery
The Joint Task Group was mindful of the need to consider timescale associated with building the paediatric hospital. The Joint Task Group considers that the project will be delivered more quickly on the site of the Mater Misericordiae Hospital. In particular, the Joint Task Group noted that significant enabling and decanting works have already been carried out on the Mater Misericordiae Hospital site.

Maximising paediatric access to relevant off site adult sub-specialties
Because of the historic development of adult specialties in Dublin, neither hospital has the full range of adult sub-specialties that ideally would be available in the co-located hospital. Thus the selected location, which will have all paediatric sub-specialties (including clinical capacity in neurosurgery, cardio-thoracic and burns management), will have to develop clear cross-site, team-working arrangements with the corresponding adult specialist teams where these are based at other off –site adult hospitals. In the context of the current configuration of adult specialties, the Mater Misericordiae Hospital is in a better geographical position to facilitate a clinical network of critical adult and paediatric specialties, particularly in acute services such as neurosurgery and in terms of the neuroscience services available across the Mater Misericordiae Hospital and Beaumont Hospital. Siting the paediatric hospital at the Mater Misericordiae Hospital site would place it between the neurosurgical and

transplant teams in Beaumont Hospital and the haematology/radiotherapy and burns staff in St James's Hospital thereby maximising access to the relevant off site expertise.

Conclusion
After consideration of all of these factors the Joint Task Group advises that the new national tertiary paediatric hospital should be built on the site of the Mater Misericordiae Hospital.

8.2 Governance arrangements

The above recommendation is made subject to the HSE / DoHC being satisfied that the appropriate governance arrangements are in place for both the development and operational phases and that host adult hospital is willing to give up ownership of the required site area. The hospital is to be built on an identified site at the Mater Misericordiae Hospital that requires to be ceded to the State through the HSE unencumbered and at no cost to the State. The Mater Misericordiae Hospital has also agreed to cede a site for a maternity hospital.

The Joint Task Group is proposing an independent status for both the development and operational phases of the new paediatric hospital. The Joint Task Group recommends that the new paediatric hospital has its own Board of Management, separate budget and identity. There will also be a need to establish an overarching coordinating mechanism with links between the adult and paediatric hospital at management and clinical Board level to ensure co location benefits are fully optimised.

8.3 Urgent Care Centre Needs

"Children's Health First" underlined the need for access to urgent care to be guaranteed at sites other than the proposed national paediatric hospital. The model for development of paediatric services includes provision for urgent care access at two other sites in Dublin. **Decisions on the location and configuration of these centres should now be progressed as part of the next phase of development of the new paediatric care model.** The need for ease of geographical access to urgent care will be a factor in determining the location of these urgent care centres. It is not intended to include inpatient beds at these urgent care centres. The urgent care centres will be staffed by consultants and other staff rotating out from the new national children's hospital and will have observation bays where children can be looked after for care for a length of stay less than 24 hours. However in discussions with the current paediatric service providers a view emerged as to the range of services that it would be appropriate to provide in these centres. The paediatric hospitals have suggested that these centres could also serve as bases for outreach out-patient departments and operate as day surgery units. This may reduce the bed capacity/space requirement for the main children's hospital and will need to be considered at the next phase. It is important to emphasise that these centres would not be independent units but rather be managed and run as an integral part of the outreach service provided from the single national tertiary paediatric hospital.

8.4 Organisation of clinical co-location in the context of adult service configuration

The work of the Joint Task Group in advising on the optimum location of the paediatric hospital brought into sharp relief the fragmented nature of adult specialty services in Dublin. The configuration of adult services is such that several key specialties are spread across the city in different hospitals. The decision in relation to the location of the new paediatric hospital will have significant implications for the development of paediatric, adult and maternity services in Dublin. Accordingly, there is a need to begin a process of looking at how acute adult services will be developed into the future. **The Joint Task Group recommends that the HSE undertakes a review of the configuration of adult acute services in Dublin.**

8.5 Future configuration of maternity services

In developing maternity services the importance of high risk mothers being cared for in a maternity unit that is located on the site of an adult hospital needs to be considered. The purpose of locating such a maternity unit with the co-located paediatric and adult hospital would be to ensure, as far as is possible, that high risk deliveries would occur in this unit. This will also have implications for the organisation of peri-natal maternity services. Also the neonatal period is the most vulnerable for children with the highest mortality rate. Consequently, if a neonatal intensive care unit, that could provide on-site emergency neonatal abdominal and cardiac surgery, is to be developed this would have to be co-located with the paediatric hospital. In the recent report, "Maternity services in the Eastern Region – A Strategy for the future 2005-2011", the three hospitals have already agreed that there should be one level 4[4] NICU in Dublin with the possibility of one other outside of Dublin. It is also accepted by the maternity hospitals in Dublin that such a unit could only be developed in a fully functioning maternity unit and not as a stand alone NICU in a paediatric hospital. With more effective ante-natal diagnosis, neonates, particularly with congenital cardiac or abdominal problems, can be identified pre-nataly. While some of these will increasingly be operated on in-utero, many will be able to book for delivery in the high risk unit. The need for emergency neonatal transport and retrieval of vulnerable neonates could be reduced in this way. This maternity unit should have the neonatal transport service based on the same site.

It was not within the remit of the Joint Task Group to recommend that any one maternity unit should tri-locate with the proposed national paediatric hospital. **The evidence the Joint Task Group has analysed does however lead the Group to recommend strongly that the site selected for the paediatric hospital should accommodate a full secondary and tertiary care maternity hospital.**

The Joint Task Group recommends that a review of the configuration of maternity services in the Dublin region should be undertaken as soon as possible in light of the strong case for tri-location for adult, paediatric and maternity services as presented to the Joint Task Group.

[4] This report describes a level 4 neonatal unit as being dedicated to the care of extremely pre-term infants, under 26 weeks gestation or under 759 grams birth weight.

Appendices

Appendix 1: Membership of Joint Task Group to advise on the optimum location of the new Paediatric Hospital

Health Service Executive:
Ms. Laverne McGuiness, National Director of Shared Service,
(Chairman from April 2006)
Mr. John O' Brien, National Director (Temporary), National Hospitals Office
(Chairman to April 2006)
Mr. Tommie Martin, National Director, Office of the CEO
Dr. Fenton Howell, Population Health Directorate
Mr. Joe Molloy, Director of Technical Services and Capital Projects, HSE West
Ms. Fionnuala Duffy, National Hospitals Office
Ms. Ruth Langan, Office of the CEO

Department of Health and Children:
Mr. Paul Barron, Assistant Secretary
Dr. Philip Crowley, Deputy Chief Medical Officer
Mr. Paul de Freine, Deputy Chief Architectural Advisor
Mr. Denis O'Sullivan Principal Officer

Office of Public Works:
Mr. David Byers, Commissioner, OPW

Appendix 2: List of meetings held by Joint Task Group

Date	Description
13.02.2006	Meeting of Joint Task Group
15.02.2006	Meeting of Joint Task Group
15.02.2006	Meeting with Council for Children's Hospitals' Care
15.02.2006	Meeting with Small Area Health Research Unit (SAHRU) TCD
17.02.2006	Meeting with Heart Children Ireland
17.02.2006	Meeting with Children in Hospital Ireland and New Crumlin Hospital Action Group
17.02.2006	Meeting with Mr. Gay Mitchell, M.E.P.
23.02.2006	Meeting of Joint Task Group
24.02.2006	Meeting with Cystic Fibrosis Ireland
06.03.2006	Meeting of Joint Task Group
06.03.2006	Meeting with Dublin Inner City Partnership
08.03.2006	Meeting of Joint Task Group
13.03.2006	Meeting of Joint Task Group
22.03.2006	Meeting of Joint Task Group
22.03.2006	Site visits undertaken by Joint Task Group
23.03.2006	Site visits undertaken by Joint Task Group
23.03.2006	Meeting of Joint Task Group
24.03.2006	Clarification meetings with each of the six adult academic teaching hospitals
27.03.2006	Meeting of Joint Task Group
29.03.2006	Meeting of Joint Task Group
29.03.2006	Meeting with Crumlin Children's Research Centre and Children's Research Foundation
31.03.2006	Meeting of Joint Task Group
03.04.2006	Meeting of Joint Task Group
06.04.2006	Meeting of Joint Task Group
19.04.2006	Meeting of Joint Task Group
02.05.2006	Meeting with the Coombe Women's Hospital
02.05.2006	Meeting with the Rotunda Hospital
02.05.2006	Meeting of Joint Task Group
04.05.2006	Meeting with Alburn Developments
04.05.2006	Meeting with Harlequin Healthcare
04.05.2006	Meeting with Beacon Medical Group
04.05.2006	Meeting with Abbeyrock Companies
05.05.2006	Meeting with Irish Patients Association
05.05.2006	Meeting of Joint Task Group
10.05.2006	Meeting with Forrest Little Golf Club
10.05.2006	Meeting with National Maternity Hospital, Holles Street
10.05.2006	Meeting of Joint Task Group
15.05.2006	Meeting of Joint Task Group
15.05.2006	Further clarification meeting with St. James's Hospital
23.05.2006	Meeting of Joint Task Group
23.05.2006	Meeting with OLHSC, Crumlin
23.05.2006	Meeting with the Children's University Hospital, Temple Street
23.05.2006	Meeting with the National Children's Hospital, Tallaght
24.05.2006	Meeting of Joint Task Group
29.05.2006	Meeting of Joint Task Group

Appendix 3: Sample letter sent to the six adult academic teaching hospitals in Dublin, 17th February 2006

17th February 2006

Dear CEO,

Re: Request for Information

You will be aware that in February 2005 the Health Service Executive accepted a report, prepared on their behalf by McKinsey & Company, recommending the strategic organisation of tertiary paediatric services for Ireland, in the best interests of children.

The report - entitled *"Children's Health First: International best practice in tertiary paediatric services: implications for the strategic organisation of tertiary paediatric services in Ireland"* - recommends the configuration of tertiary paediatric services for Ireland and secondary paediatric services for Dublin. The key recommendations of the report are set out in Appendix A.

On foot of the report's recommendations the Department of Health and Children and the HSE have established a Joint Task Group to progress matters and, in particular, to advise on the optimum location of the proposed new hospital. The Group includes representation from the Office of Public Works. The work of the Joint Task Group is to be completed within a two month time frame.

Given that the report recommends that the new hospital would ideally be co-located (i.e. on the campus of or adjacent to) with a leading adult academic hospital in Dublin, the Joint Task Group is now writing to each of the Dublin Academic Teaching Hospitals seeking information to establish:

a) Whether your hospital is interested in being considered as the co-location site, and

b) If so, to provide you with an opportunity to demonstrate your approach to meeting the recommendations of the report. To assist the Task Group in understanding and assessing this, your response should include the details outlined in the attached template (Appendix B).

The information provided by you will form part of the Task Group's deliberations regarding the options for location of the new paediatric hospital. The Group may revert to you if further clarification is needed.

The deadline for submission of this information (six copies are required) is Friday 3rd March 2006 to:

Ruth Langan
Joint HSE/DoHC Joint Task Group
2nd Floor, Block D
Parkgate Business Centre
Parkgate Street
Dublin 7

Yours sincerely,

_____

John O'Brien
Chair, Joint HSE/DoHC Task Group

APPENDIX A

Children's Health First report recommends the following configuration of tertiary paediatric services in Ireland.

- Population and projected demands of Ireland can support only one world class tertiary centre.
- The centre would have the attributes outlined on page 58 of the report.
- This centre would be in Dublin
    - It would ideally be co-located with a leading adult academic hospital
    - It would have space for future expansion (including education and research facilities)
    - It would be easily accessible through public transport and the road network
- The centre would be at the nexus of an integrated paediatric service also comprising:
    - Important outreach capabilities at key non-Dublin hospitals
    - Adequate geographic spread of A&E facilities (including 2-3 in Dublin). Treatment at "urgent care" centres is another option. These centres are either stand alone or attached to an adult facility with no inpatient children's beds.
- This centre would also provide care for all the secondary needs of Greater Dublin

APPENDIX B

The report recommends development of a 380 bedded Children's hospital, including:

- 96 tertiary non-ICU beds
- 54 ICU beds
- 189 secondary non-ICU beds
- 41 secondary day beds

For the purposes of these deliberations, it is envisaged that all inpatient beds will be accommodated in single rooms.

The new children's hospital is to provide appropriate accommodation for the full range of clinical and other functions as envisaged in the report. This may include space to be shared between co-located hospitals, particularly in such areas as pathology, radiology, pharmacy, education, catering, stores, energy centre, etc.

It is estimated, for outline planning purposes only, that a total gross internal floor area of approximately **65,000m^2** will be required for this purpose.

As recommended by the report an 'expansion' allowance is to be provided. This additional space requirement has been estimated, for preliminary planning purposes, at approximately 20% or **13,000m^2**. Given that not all areas of the future hospital will require equal expansion, an approach to the provision of such expansion capacity should be indicated. The separate future expansion needs of the adult acute hospital need also to be considered. In particular, the approach to expansion capacity should identify whether there is land available (stating area) for development of expansion at ground level, or whether the expansion would be accommodated without ground level construction.

The report discusses alternative planning models that could result in a requirement for up to ***585*** beds:

- 215 tertiary non-ICU

- 81 ICU beds
- 248 secondary non-ICU beds
- 41 secondary day beds

The availability of land (stating area), for this significant overall capacity should also be identified and its impact on site capacity shown.

Space will also be required, *inter alia*, for the following:

- Helipad
- Emergency vehicular access
- Car parking for a minimum of 530 cars (2/bed tertiary; 1/bed other)
- Waste marshalling yard
- Amenities

To assist the Joint Task Group, please provide information in the following format (supported where appropriate by block plan diagrams or other graphic representations):

1. <u>Planning and Development Considerations</u>

1.1 Definition of proposed site, incl. confirmation of site area (ha), and indicated on O.S. site map at 1:1000 scale (min.)

1.2 Is site fully contained within existing hospital curtilage? (Y/N)

1.3 Indication of how the proposed site and development of children's facilities would relate to the hospital's current Development Control Plan and traffic management strategy.

1.4 Details of route of proposed physical link with existing hospital, including

I. Linear distance from closest accessible boundary/edge of proposed site to existing hospital core building (m)
II. State whether route is on surface, at high level or underground
III. Covered for full length?
IV. Route ownership details
V. Pedestrian traffic only?
VI. Patient transfer?
VII. Transfer of goods and samples?
VIII. Vehicular traffic?

1.5 Confirmation of ownership of the entire proposed site and absence of boundary conflict issues; including confirmation of legal title, ownership; confirmation that site is free of encumbrances-legal, financial etc.

1.6 Details of Planning and Development considerations relating to the proposed site, including in particular reference to such matters as:

I. Zoning
II. Protected structures
III. Height restriction
IV. Development density, permissible building footprint
V. Traffic management and transport plans
VI. Environmental impact
VII. Waste management
VIII. Previous planning history

1.7 Details of any existing or planned alternative land use by of the proposed site by the hospital and /or any other parties

1.8 Description and extent of enabling or other works required to make available the proposed site which may generate particular costs to facilitate a new children's hospital development, e.g. decanting, demolitions, diversion of significant site services adjoining site acquisition, etc.

1.9 Information on the manner in which enabling or other works, or the general approach to development, that may impact on the timeframe for development, e.g. phasing requirements, planning aspects.

1.10 Impact of the development of a new children's hospital on the existing hospital, which will need to provide clinical services in acceptable conditions for the duration of the development period.

1.11 Consequential development requirements of the existing hospital and how they would be impacted by the development of a new children's hospital.

1.12 Utilities infrastructure capacity of the site and how impacted by a new children's hospital.

1.13 Known development constraints.

Co-location values

2.1 Clinical

2.1.1 Please provide information on the particular adult specialist services available or planned for your hospital that would bring added value to the new paediatric hospital through resource sharing in of clinical linkages if they were co-located with your hospital.

2.1.2 For the specialties outlined on the following table, please indicate which adult services are available at your hospital and the number of consultant sessions available

Specialty	**Adult service (Y/N)**	**Number of consultant sessions**
Medicine		
Anaesthetics		
Cardiology		
Endocrinology		
General Medicine		
Genetics		
Haematology		
Immunology		
Infectious diseases		
Intensive care		
Neonatology		
Nephrology		
Neurology		
Oncology		
Ophthalmology		
Pathology		
Radiology		
Respiratory		
Rheumatology		
Microbiology & Clinical Chemistry		
Surgery		
Cardiothoracic surgery		
ENT surgery		
Gastroenterology / GI		
General surgery		

Neurosurgery		
Orthopaedic surgery		
Transplant surgery		
Urology		
Other		
Dermatology		
Burns		
Plastics		
Metabolics		
Psychiatry		
Clinical Pharmacology		
Child Development		

2.2 Capacity for shared resources

Please indicate the potential for your hospital to bring added value to the new paediatric hospital in terms of the following areas.

- Work Force: clinical areas
- Work Force: non-clinical areas
- Clinical support services e.g. diagnostics
- Non Clinical Support services e.g. catering/cleaning/maintenance/energy
- Facilities

2.3 Education and Research

Please describe existing education, training and university linkages and research activities/facilities and describe potential for additional linkages, specifically in the context of the new paediatric hospital which will require to be associated with all the existing medical schools.

3. Access

The Task Group will have available to it a detailed piece of work examining travel times by public and private transport means for both the national and local catchment populations. However, please provide information on how your hospital would facilitate access to the new paediatric hospital.

2. Governance

In the context that this project would involve the relocation of existing paediatric services onto one site please indicate what the hospital envisages to be the organisational governance model associated with:

(a) the development of the new paediatric hospital
(b) the running of the new hospital

Appendix 4: Potential locations identified to the Joint Task Group

The following is a list of potential locations identified to the Joint Task Group:

Abbeyrock Group of Companies identified site
Alburn Developments identified site
Beacon Medical Group identified site
Beaumont Hospital
Cherry Orchard Hospital, Ballyfermot, Dublin 10
Connolly Hospital, Blanchardstown
Forrest Little Golf Club identified site
Harlequin Healthcare Holdings Ltd identified site
Joint HSE / OPW owned site between the Camac River and Heuston Station, Dublin 8
Lissenhall, Swords, Co. Dublin
Mountjoy Prison, Dublin 7[5]
South Dublin County Council owned site near Newlands Cross
St Ita's Hospital, Portrane, Co. Dublin
St. Brendan's Hospital, Grangegorman, Dublin 7
St. Brigid's Home, Crooksling, Brittas, Co. Dublin
St. Columcille's Hospital, Loughlinstown, Co. Dublin
St. James's Hospital
St. Vincent's Hospital
Tallaght Hospital
The Central Mental Hospital, Dundrum
The Coombe Women's Hospital and adjoining Dublin City Council owned land
The Mater Misericordiae Hospital

[5] The OPW in their response to the Joint Task Group request for information, referred to the site currently occupied by Mountjoy Prison. It was not considered by the Joint Task Group in the context that the site cannot be accessed for development until the planned new prison is ready.

Appendix 5: Sample letter of clarification issued to the six adult academic teaching hospitals in Dublin, 14th March 2006

14th March 2006

Dear CEO,

I refer to John O' Brien's letter dated 17th February 2006 and the subsequent response received from ….. Hospital.

1. Preliminary request for written clarification

In relation to the documentation submitted by the ……. to the Joint Task Group, it would be appreciated if written clarification of the following issues could be provided by close of business on Monday March 20th 2006 to me at the following address:

Ruth Langan
Joint HSE/DoHC Task Group
2nd Floor, Block D
Health Service Executive
Parkgate Business Centre
Parkgate Street
Dublin 7

A, Planning and development considerations:

Known planned development projects:
Please identify on a single map the proposed location of all known development plans for the hospital site, as well as the proposed location of the new paediatric hospital.

Future expansion capacity:
When all known planned development projects are complete and in the event that the new children's hospital were to be constructed on your site, please indicate what expansion capacity would remain on the site and how the hospital would propose to address future expansion requirements of the adult hospital, for example, increased bed capacity and future service developments and expansion.

Planning considerations:
Please indicate whether any preliminary discussions have been undertaken with planning authorities in relation to the development of a paediatric hospital on your site as outlined in your documentation.

Onsite management of multiple capital development projects:
Please indicate the capacity of the hospital to facilitate multiple contractors on site undertaking separate capital development projects simultaneously. Specifically how does the hospital envisage dealing with:

- Access (and requirement to have uninterrupted emergency, public and construction access)
- Separation of contractors
- Continuation of core hospital business

Site ownership:
Where land forming part of the proposal is owned by a 3rd party, please indicate the following:

- That the land is available for the stated purpose
- Acquisition timeframe
- Context of acquisition
- Cost of acquisition

Timescale:
Please define in separate blocks of time for each stage, the timescale for:

- Acquisition of land, where required
- Enabling of preparatory works
- Statutory approvals in context of significant planning issues
- Timeframe to build

Other:
A number of issues requiring clarification specific to each of the hospitals was asked here.

B. Access:

Please clarify whether the hospital could incorporate a helipad on site which would comply with all relevant regulations/requirements. Please state the nature of any known planning restrictions in this regard.

C. Governance:

Please indicate whether there is a willingness to facilitate all possible governance / construct options for the development phase of the new paediatric hospital including the following:

- Development entity fully independent requiring host hospital to cede site
- "Joint entity" provision which may require the ceding of the site
- Host hospital to directly develop the new paediatric hospital

Please indicate the same for operational phase of all acute services located on the site including the new paediatric hospital

Please indicate whether there is a willingness on the part of the host hospital to significantly alter its current ownership base (including possible Ministerial or HSE ownership) if so required

Please indicate the ease with which ownership / governance base of the host hospital can be altered if so required

2. Site visit

The Joint Task Group would like to undertake a site visit to the….. on …. March at …..pm.

3. Clarification meeting

The Joint Task Group would like to invite the following representatives from the …… to a clarification meeting on Friday 24th March 2006 at ….. in the HSE- EA, 63-64 Adelaide Road, Dublin 2:

- Chairman
- Chief Executive
- Chairman of the Medical Board
- A representative able to address technical/planning/development issues

It is anticipated that this meeting will not take more than 45 minutes.

An early indication of the …… willingness to facilitate the site visit and clarification meeting as outlined in 2 and 3 above would be appreciated.

Yours sincerely,

_____
Ruth Langan

Appendix 6: Sample letter issued to five of the six adult academic teaching hospitals in Dublin, 5th April 2006

5th April 2006

Dear CEO,

I refer to previous correspondence and meetings in relation to the work of the Joint HSE / DoHC Task Group to advise on the optimum location of a new paediatric hospital.

As you are aware the Task Group is endeavouring to report within a two month timeframe and has appreciated your cooperation to date in this regard.

Following recent discussions the Joint Task Group wishes to request clarification in relation to two issues.

Governance
In relation to governance, the Joint Task Group is likely to propose an independent status for both the development and operational phases of the new paediatric hospital. There will also possibly be a recommendation to establish an overarching coordinating mechanism designed to ensure co location values are fully optimised.

In this context, the Joint Task Group requires written confirmation that the owners of ….. are willing to cede the identified site for the development of the new paediatric hospital and future expansion capacity, unencumbered and at no cost to the State.

Future expansion capacity
In the course of its deliberations the Joint Task Group has come to a conclusion that it would be important as part of assessing the future expansion capacity of the hospital to ensure that, following completion of all known development plans / projects, there would be sufficient capacity for the development of a maternity hospital on the campus if required.

The Joint Task Group is satisfied that your hospital site could accommodate a maternity hospital in the order of approximately 25,000m^2.

The Joint Task Group requests an indication that

(a) The owners would be willing to accommodate a maternity hospital on site and would prioritise the development if required;
(b) That the owners of the site would be willing to cede the space required for the development of such a hospital, unencumbered and at no cost to the State.

A response by Tuesday April 11th is requested.

Yours sincerely,

_____
John O' Brien
Chairman
Joint HSE/DoHC Task Group

Appendix 7: "Distance and Travel Time Calculations for a proposed National Paediatric Hospital in Dublin: A report to the HSE" (SAHRU, TCD, March 2006)

Distance and Travel Time Calculations

for a proposed

National Paediatric Hospital

In Dublin

A Report to the HSE

Mr. Conor Teljeur
Dr. Alan Kelly

Small Area Health Research Unit
Department of Public Health & Primary Care
Trinity College Dublin

10th March 2006

Terms of reference

Context: The Joint DoHC/HSE Task Group established to propose a location in Dublin for a single paediatric hospital, ideally to be co-located (on the campus of or adjacent to) with a leading adult academic teaching hospital to provide (1) tertiary paediatric services nationally and (2) secondary services to the local catchment currently served by the three existing hospitals (i.e. Dublin, Kildare, Wicklow and parts of Meath).
In this regard, the group would be interested in SAHRU undertaking a piece of work around transport and access issues. Specifically, to examine travel times - by public and private transport means – for both the national and local catchment populations to each of the 5 Dublin Area Teaching Hospitals (The Mater, Beaumont, St. Vincents', St. James' and AMiNCH) and the James Connolly Memorial Hospital, Blanchardstown.

Subsequently, the terms of reference were ammended to consider proposed
transport changes over a time horizon up to 2016. A further amendment asked that, in addition to the 6 sites initially nominated, calculations for a seventh possible site (at Grangegorman) should be considered.

Timeframe

Three weeks – work to be competed on or by 10th March 2006.

Resources Accessed

Population

Population projections for numbers of children aged between 0 and 15 years were obtained from the Central Statistics Office's publications available at:
http://www.cso.ie/releasespublications/reg_pop_projections.htm and the associated zip files of tables.

These tables cover anticipated growth in the numbers of children annually between 2002 and 2021 at 8 regional levels: Dublin (D), Mid East (ME), Mid West (MW), South East (SE), South West (SW), Border (B)< Midland (M) and West (W). The details of the CSO's regional composition are provided in the Appendix.

NB: Projections of population change are not available at sub-regional level.

Residential development:

We accessed the most recently published county development plans in relation to proposed residential developments during the next 5-10 years.

Hospital In-patient Inquiry data (HIPE) for children

HIPE data for all national day case and in-patient admissions of children aged between 0 and 15 years for the year 2004 were made available by the HSE.

Transport

Road network and nominal speed per road segment: Ordnance Survey of Ireland and National Roads Authority
Bus routes: Dublin Bus Route Network Guide and timetables and Bus Eireann timetables
Rail network: Irish Rail timetables
Luas network: Ordnance Survey of Ireland and Luas website

Defined Catchment for the national paediatric hospital as given:

Secondary: comprising Dublin City, South Dublin, Fingal, Dun Laoghaire-Rathdown, Kildare, Wicklow and Meath (parts of.)
Tertiary: all areas of the Republic of Ireland.

Selected analyses from HIPE 2004

The total number of day cases and in-patients recorded during 2004 was 127,139 children aged 0-15 years:

Origin	Events[1]	%
Other countries	507	0.4
From Ireland	126,632	99.6
Total	127,139	100.0

Excluding children who were not resident in Ireland, the in-patient and day case counts are as shown.

Type	Events	%
In-patient	86,846	68.5
Day case	39,786	31.5
Total	126,632	100.0

A breakdown of the regional distribution of the day case and in-patient children by CSO Region and HIPE county of residence is provided below. It will be seen that the area designated as South Dublin City and County accounted for the highest numbers of both day cases and in-patient events in 2004 at a combined total of 12.78% of all events. This is followed by North Dublin City and County at 10.43%.

In regional terms, the CSO Region of Dublin represents 23.31% of all events. Patients originating from the South West represent 13.6% of all events followed by those from the South East with 13.13%.

[1] The term 'events' is used in lieu of cases or patients as some children have multiple episodes.

Breakdown of day case and in-patient numbers by area.

CSO Region	Area	No In-Patient	%	No. Daycase	%	Total	%
B	Cavan	1,719	1.98	519	1.30	2,238	1.77
B	Donegal	4,406	5.07	1,407	3.54	5,813	4.59
B	Leitrim	597	0.69	263	0.66	860	0.68
B	Louth	2,631	3.03	2,158	5.42	4,789	3.78
B	Monaghan	1,193	1.37	539	1.35	1,732	1.37
B	Sligo	1,459	1.68	569	1.43	2,028	1.60
D	Dun Laoire Borough	61	0.07	73	0.18	134	0.11
D	North Dublin City and County	8,138	9.37	5,065	12.73	13,203	10.43
D	South Dublin City and County	10,415	11.99	5,767	14.50	16,182	12.78
M	Laois	1,773	2.04	607	1.53	2,380	1.88
M	Longford	768	0.88	294	0.74	1,062	0.84
M	Offaly	1,588	1.83	648	1.63	2,236	1.77
M	Westmeath	2,388	2.75	838	2.11	3,226	2.55
ME	Kildare	3,509	4.04	1,776	4.46	5,285	4.17
ME	Meath	3,138	3.61	1,727	4.34	4,865	3.84
ME	Wicklow	1,912	2.20	1,381	3.47	3,293	2.60
MW	Clare	2,103	2.42	1,089	2.74	3,192	2.52
MW	Limerick City	2,172	2.50	796	2.00	2,968	2.34
MW	Limerick County	1,898	2.19	880	2.21	2,778	2.19
MW	Tipperary Nth Riding	1,196	1.38	455	1.14	1,651	1.30
SE	Carlow	1,149	1.32	424	1.07	1,573	1.24
SE	Kilkenny	1,940	2.23	712	1.79	2,652	2.09
SE	Tipperary Sth Riding	1,978	2.28	662	1.66	2,640	2.08
SE	Waterford City	1,848	2.13	725	1.82	2,573	2.03
SE	Waterford County	1,711	1.97	843	2.12	2,554	2.02
SE	Wexford	3,260	3.75	1,378	3.46	4,638	3.66
SW	Cork City	3,557	4.10	1,402	3.52	4,959	3.92
SW	Cork County	6,467	7.45	2,327	5.85	8,794	6.94
SW	Kerry	2,815	3.24	648	1.63	3,463	2.73
W	Galway City	1,395	1.61	581	1.46	1,976	1.56
W	Galway County	3,434	3.95	1,574	3.96	5,008	3.95
W	Mayo	3,150	3.63	1,058	2.66	4,208	3.32
W	Roscommon	1,078	1.24	601	1.51	1,679	1.33
	Totals	86,846		39,786		126,632	

The Border counties provide 13.79% of all events, while the Mid East [2] are the next largest and account for 10.62% of events.
The remaining regions breakdown as follows: West (10.16%); Mid West (8.36%) and Midland (7.035).

[2] Recall that the CSO region 'Mid East' includes all of Co. Meath, whereas the secondary catchment only includes about 1/3 of this county.

Attendance at Dublin Paediatric Hospitals

Breakdown of total numbers of day case and in-patient attendances at the 3 Dublin paediatric hospitals:

Hospital	Total	In-patient	Daycase
Crumlin Children's	20,608	10,530	10,078
National Children's Hospital (AMiNCH)	9,337	5,596	3,741
Temple Street Children's	11,830	7,578	4,252

The following tables provides deails of the source of these patients to each centre for in-patients and daycases.

Detailed breakdown of area of residence of patients attending the 3 Dublin paediatric centres as in-patients

Region	Crumlin	%	Tallaght	%	Temple Street	%
B	625	5.94	53	0.95	445	5.87
D	5,281	50.15	3,586	64.08	5,361	70.74
M	556	5.28	39	0.70	148	1.95
ME	2,102	19.96	1,791	32.01	939	12.39
MW	323	3.07	10	0.18	141	1.86
SE	811	7.70	69	1.23	201	2.65
SW	400	3.80	18	0.32	101	1.33
W	432	4.10	30	0.54	242	3.19
Total	10,530	100.00	5,596	100.00	7,578	100.00

Detailed breakdown of area of residence of patients attending the 3 paediatric centres as day cases

Region	Crumlin	%	Tallaght	%	Temple Street	%
B	658	6.53	51	1.36	311	7.31
D	4,580	45.45	2,207	58.99	2,895	68.09
M	570	5.66	74	1.98	178	4.19
ME	1,811	17.97	1,224	32.72	548	12.89
MW	292	2.90	9	0.24	61	1.43
SE	1,219	12.10	91	2.43	156	3.67
SW	385	3.82	21	0.56	33	0.78
W	563	5.59	64	1.71	70	1.65
Total	10,078	100.00	3,741	100.00	4,252	100.00

Methods – Population projections

Pre-defined catchments

Secondary Catchment - Dublin, Wicklow, Kildare and part of Meath
Tertiary Catchment - All other areas.

The CSO's report dated 25th May 2005 entitled "Regional Population Projections 2006-2021" and the associated detailed tables (available from the CSO's web site) have been used for purposes of calculations based on the projected numbers of children (0-15 years) in the regions in the Results section.

In relation to these projections the CSO indicate :
"The assumptions used in relation to regional fertility and mortality trends and international migration to and from each region are consistent with those used at national level."

Additionally, under Limitations, they state the following:

"Because of the greater uncertainty attaching to regional as distinct from national population projections, the results for individual Regional Authority areas must be regarded as somewhat tentative. The objective of the regional population projections is to determine how the population of the various regions would evolve in the period to 2021 if recent demographic trends were to continue. The National Spatial Strategy, which is likely to influence how future regional population trends will evolve, was not factored specifically into the projections."

These remarks and caveats must be borne in mind in considering the results detailed later.

Total population projections according to the CSO's MIF2-medium scenario (this scenario is considered the "most likely") has been used throughout this report.

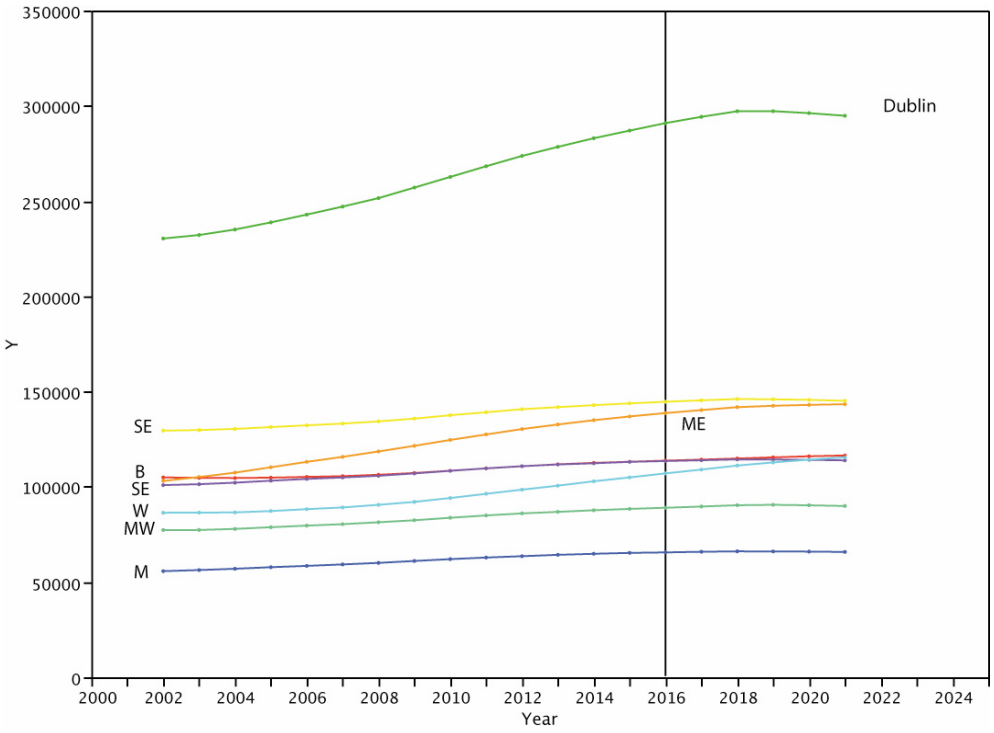
Region	2002	2006	2016	
Border		432,534	457,132	519,195
Dublin		1,122,821	1,185,967	1,373,864
Midland		225,363	242,690	280,195
Mid-East		412,625	458,696	572,026
Mid-West		339,591	355,079	394,897
South-East		423,616	450,729	511,858
South-West		580,356	609,046	678,833
West		380,297	406,400	479,658

The total child (0-15 years) population projections for the same period are as follows:

Total Child (0-15 years) population

Region	2002	2006	2016	
Border		104,949	105,222	113,765
Dublin		230,364	242,918	290,955
Midland		55,739	58,509	65,586
Mid-East		103,093	113,113	138,737
Mid-West		77,342	79,640	89,023
South-East		100,911	104,170	113,543
South-West		129,505	132,288	144,672
West		86,407	88,293	107,069

The projected trends for children by region between 2002 (known) and 2024 are graphed.



Projected trends in the number of children (0-15 years) by Region

It is clear from this plot that there will continue to be an increase in the numbers of children in the Dublin region until 2018 after which it is expected to plateau or decline slightly. Relatively modest increases are projected for most regions with the exception of the ME and W where growth is expected to be more pronounced.

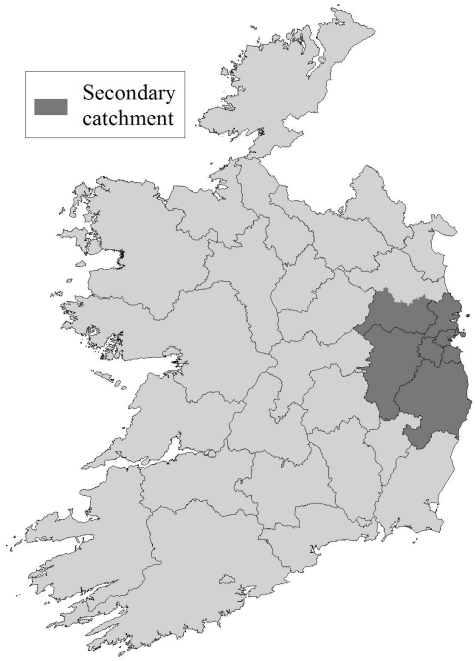
Based on the above overall pattern, it was necessary to attribute the projected growth in the numbers of children available at a regional level to sub-regions to enable suitable and detailed calculations of distance and travel times to the 7 pre-defined sites. A careful examination of county development plans for all areas - other than Dublin - confirmed that local authorities (who necessarily avail of the CSO's population projections) plan for local residential growth by re-zoning suitable land in proximity to existing urban and large village centres. As a consequence, in attributing growth in the numbers of children by region in future years we have considered that such growth will inevitably be *predominantly* associated with new residential developments in the environs of existing towns and larger villages. It has been assumed in relation to the distribution of additional population numbers over the next decade that these will be added to existing population centres *in proportion to the present size of such centres*. This seems plausible to us particularly in view of the approach taken by local planners. The Electoral Divisions (EDs) comprising existing towns (and neighbouring under populated EDs) within regions will therefore receive the projected additional numbers in proportion to their current size.

In the Dublin region, we have used the detail provided by the constituent authorities in their development plans (and accompanying maps) to determine where growth will occur. This tends to be on the fringes of already developed land in Fingal, Dun Laoghaire-Rathdown and South Dublin. The EDs where growth has been planned in these local authorities were identified and the regional projected additional growth in numbers of children has been allocated to these areas.

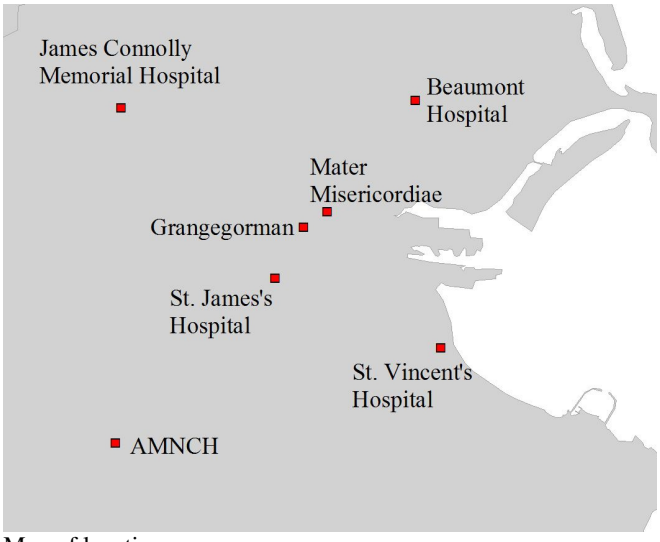
It has been assumed that the numbers of children in the large conurbations will remain in a steady state, i.e. as some children age and 'fall out' of the target population others will appear to take up their places.

Methods – Distance & Transport Calculations

Below are shown maps of the secondary catchment boundary and the site locations in Dublin.



Map of the secondary catchment.



Map of locations.

Road distances and travel times.

The Ordnance Survey of Ireland digital road network data was used for all calculations.

Average travel speeds were determined using information on free speeds as published by the National Roads Authority. Figures were adjusted to take into account impedances generated by junctions. Different average speeds were applied to rural, town and city areas respectively, as shown below.

Road type	Average speed (kmph)		
	Rural	Town	City
Motorway	109	104	96
Primary	80	72	64
Secondary	64	56	48
Regional	72	64	54
Third	56	48	40
Fourth	40	32	32

A number of sample travel times were tested against published estimates by the AA to ensure that similar results were obtained.

Bus information.

Bus route and timetable data were obtained from Dublin Bus and Bus Eireann through their respective websites. Detailed Dublin Bus route information was taken from the October 2005 Route Network Guide. In the case of Bus Eireann services where a stop appears on several services with different routes, the average time to Dublin was used. For Dublin Bus services, an average travel speed was calculated across all services which equated to 18.27 kmph. Where the service was within walking distance of a location, a walking speed of 6.4 kmph was used. It was assumed that people present at a stop 10 minutes prior to the arrival of the service.

Train information.

Route and timetable information for all Intercity and suburban services were obtained from Irish Rail through their website. Luas information was obtained from the Luas website and route information from the Ordnance Survey Dublin Street Guide. Patron are expected to arrive 10 minutes early for intercity and suburban rail services while for DART and Luas services the expected waiting times were set at 5 and 7 minutes respectively.

For public transport options, it is assumed that the people in an ED will opt for the fastest option available from the choice of bus, train and walking [if within 1250m of the location].

Results:

Secondary Catchment - Dublin, Meath(part of.), Kildare, Wicklow
Tertiary catchment - all regions

Hospitals	Abbreviations
Beaumont	BH
Grangegorman	GG
James Connolly Memorial	JC
Mater Misericordiae	MM
St. James	SJ
St. Vincents	SV
Tallaght (AMiNCH)	TH

Actual 2002 and projected population (0-15 years) for 2006 and 2016

Catchment	2002	2006	2016
Secondary	315,425 (35.5%)	336,523 (36.4%)	406,598 (38.2%)
Tertiary (all areas)	888,310 (100%)	924,153 (100%)	1,063,353 (100%)

1. Analysis by distance

Secondary catchment

Numbers of population (0-15 years) within given distances (in Kilometres)

	Distance	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 10	71,713	114,009	60,158	110,883	124,031	84,193	78,172
	10 – 20	132,037	111,084	146,394	116,133	104,028	135,979	114,713
	20 – 30	49,665	31,643	43,353	28,919	33,578	30,320	62,515
	30 – 40	21,463	22,496	30,458	22,895	18,635	26,155	26,114
	40 – 50	9,878	14,167	14,225	13,751	15,149	17,663	16,682
	50+	30,669	22,026	20,837	22,844	20,004	21,115	17,229
2006	0 - 10	72,726	114,974	63,447	111,212	126,085	85,076	80,944
	10 - 20	140,542	121,444	152,767	127,335	113,890	145,900	120,241
	20 - 30	55,490	35,926	47,805	32,912	37,814	34,278	69,335
	30 - 40	23,968	24,936	34,417	25,419	20,588	29,335	28,931
	40 - 50	10,454	15,358	15,469	14,936	16,516	19,321	18,381
	50+	33,343	23,885	22,618	24,709	21,630	22,613	18,691
2016	0 - 10	77,609	119,708	75,693	113,241	134,798	87,665	90,956
	10 - 20	172,250	160,965	174,776	170,190	150,818	185,084	139,474
	20 - 30	74,581	47,838	64,985	43,977	49,102	46,195	93,645
	30 - 40	30,097	31,102	45,338	31,803	26,138	37,713	36,961
	40 - 50	11,955	18,404	18,650	17,966	19,929	23,519	23,120
	50+	40,106	28,581	27,156	29,421	25,813	26,422	22,442

Cumulative percentages of population (0-15 years) within given distances (in Kilometres)

	Distance	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 10	22.7	36.1	19.1	35.2	39.3	26.7	24.8
	10 - 20	64.6	71.4	65.5	72.0	72.3	69.8	61.2
	20 - 30	80.3	81.4	79.2	81.1	82.9	79.4	81.0
	30 - 40	87.1	88.5	88.9	88.4	88.9	87.7	89.2
	40 - 50	90.3	93.0	93.4	92.8	93.7	93.3	94.5
	50+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	0 - 10	21.6	34.2	18.9	33.0	37.5	25.3	24.1
	10 - 20	63.4	70.3	64.2	70.9	71.3	68.6	59.8
	20 - 30	79.9	80.9	78.5	80.7	82.5	78.8	80.4
	30 - 40	87.0	88.3	88.7	88.2	88.7	87.5	89.0
	40 - 50	90.1	92.9	93.3	92.7	93.6	93.3	94.4
	50+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	0 - 10	19.1	29.4	18.6	27.9	33.2	21.6	22.4
	10 - 20	61.5	69.0	61.6	69.7	70.2	67.1	56.7
	20 - 30	79.8	80.8	77.6	80.5	82.3	78.4	79.7
	30 - 40	87.2	88.4	88.7	88.3	88.8	87.7	88.8
	40 - 50	90.1	93.0	93.3	92.8	93.7	93.5	94.5
	50+	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tertiary catchment

Numbers of population (0-15 years) within given distances (in Kilometres)

	Distance	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 50	303,580	312,223	315,112	311,405	312,841	298,550	300,896
	50 - 100	106,128	105,334	107,436	105,648	104,917	113,661	119,238
	100 - 150	99,689	102,748	99,367	101,304	107,505	103,668	120,723
	150 - 200	112,898	118,301	131,560	115,530	117,050	108,472	112,428
	200 - 250	146,840	163,568	148,467	159,229	162,919	152,579	164,562
	250+	119,175	86,136	86,368	95,194	83,078	111,380	70,463
2006	0 - 50	323,334	332,792	335,760	331,968	333,633	318,430	320,668
	50 - 100	111,302	109,925	111,975	110,242	109,291	118,852	124,698
	100 - 150	102,186	105,247	101,773	103,740	110,192	106,185	124,047
	150 - 200	116,254	121,645	135,218	118,842	120,213	111,700	115,255
	200 - 250	149,759	167,226	151,721	162,665	166,645	155,799	168,310
	250+	121,318	87,318	87,706	96,696	84,179	113,187	71,175
2016	0 - 50	390,882	402,407	405,537	401,567	403,579	385,435	387,368
	50 - 100	126,481	123,784	125,919	124,107	122,725	134,935	141,583
	100 - 150	111,326	114,950	111,441	113,253	120,733	116,023	136,429
	150 - 200	130,776	136,775	153,503	133,592	134,862	125,454	130,597
	200 - 250	171,997	192,086	172,764	186,775	191,611	179,066	192,054
	250+	131,891	93,351	94,189	104,059	89,843	122,440	75,322

Cumulative Percentage of population (0-15 years) within given distances (in Kilometres)

	Distance	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 50	34.2	35.1	35.5	35.1	35.2	33.6	33.9
	50 - 100	46.1	47.0	47.6	46.9	47.0	46.4	47.3
	100 - 150	57.3	58.6	58.8	58.4	59.1	58.1	60.9
	150 - 200	70.1	71.9	73.6	71.4	72.3	70.3	73.5
	200 - 250	86.6	90.3	90.3	89.3	90.6	87.5	92.1
	250+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	0 - 50	35.0	36.0	36.3	35.9	36.1	34.5	34.7
	50 - 100	47.0	47.9	48.4	47.9	47.9	47.3	48.2
	100 - 150	58.1	59.3	59.5	59.1	59.9	58.8	61.6
	150 - 200	70.7	72.5	74.1	71.9	72.9	70.9	74.1
	200 - 250	86.9	90.6	90.5	89.5	90.9	87.8	92.3
	250+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	0 - 50	36.8	37.8	38.1	37.8	38.0	36.2	36.4
	50 - 100	48.7	49.5	50.0	49.4	49.5	48.9	49.7
	100 - 150	59.1	60.3	60.5	60.1	60.8	59.8	62.6
	150 - 200	71.4	73.2	74.9	72.6	73.5	71.6	74.9
	200 - 250	87.6	91.2	91.1	90.2	91.6	88.5	92.9
	250+	100.0	100.0	100.0	100.0	100.0	100.0	100.0

2. Analysis by time to travel

Secondary catchment – Public Transport

Numbers of population (0-15 years) within given travel times

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	4,357	3,643	2,057	3,982	3,203	1,568	7,272
	15 - 30	20,595	13,088	20,091	23,934	25,788	11,172	20,070
	30 - 45	37,056	59,228	34,860	65,545	58,701	52,722	33,337
	45 - 60	38,285	103,009	35,052	90,999	103,974	76,557	22,929
	60 - 90	142,345	109,491	129,010	108,398	97,339	137,628	135,144
	90+	72,787	26,966	94,355	22,567	26,420	35,778	96,673
2006	0 - 15	4,357	3,643	2,464	3,982	3,203	1,568	8,454
	15 - 30	20,663	13,088	22,706	23,934	25,788	11,172	20,757
	30 - 45	37,856	59,586	35,558	66,654	59,914	53,942	33,893
	45 - 60	40,057	110,493	35,971	97,789	110,257	79,415	22,929
	60 - 90	154,407	120,585	136,051	119,993	108,795	152,395	143,542
	90+	79,183	29,128	103,773	24,171	28,566	38,031	106,948
2016	0 - 15	4,357	3,643	4,151	3,982	3,203	1,568	13,044
	15 - 30	21,099	13,088	32,237	23,934	25,788	11,172	22,729
	30 - 45	41,655	62,153	37,541	72,216	64,920	58,005	36,171
	45 - 60	47,789	137,858	39,285	123,845	133,439	90,786	22,929
	60 - 90	195,953	154,913	160,292	154,271	144,916	201,264	173,794
	90+	95,745	34,943	133,092	28,350	34,332	43,803	137,931

Cumulative Percentage of population (0-15 years) within given travel times

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	1.4	1.2	0.7	1.3	1.0	0.5	2.3
	15 - 30	7.9	5.3	7.0	8.9	9.2	4.0	8.7
	30 - 45	19.7	24.1	18.1	29.6	27.8	20.8	19.2
	45 - 60	31.8	56.7	29.2	58.5	60.8	45.0	26.5
	60 - 90	76.9	91.5	70.1	92.8	91.6	88.7	69.4
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	0 - 15	1.3	1.1	0.7	1.2	1.0	0.5	2.5
	15 - 30	7.4	5.0	7.5	8.3	8.6	3.8	8.7
	30 - 45	18.7	22.7	18.0	28.1	26.4	19.8	18.8
	45 - 60	30.6	55.5	28.7	57.2	59.2	43.4	25.6
	60 - 90	76.5	91.3	69.2	92.8	91.5	88.7	68.2
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	0 - 15	1.1	0.9	1.0	1.0	0.8	0.4	3.2
	15 - 30	6.3	4.1	8.9	6.9	7.1	3.1	8.8
	30 - 45	16.5	19.4	18.2	24.6	23.1	17.4	17.7
	45 - 60	28.3	53.3	27.8	55.1	55.9	39.7	23.3
	60 - 90	76.5	91.4	67.3	93.0	91.6	89.2	66.1
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tertiary catchment

Numbers of population (0-15 years) within given travel times

	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	100,293	178,968	92,060	184,460	191,666	142,019	83,608
	1-2 hours	246,648	213,309	235,552	213,041	216,366	219,128	244,627
	2-3 hours	139,385	146,098	153,499	133,056	151,875	149,455	160,563
	3-4 hours	195,868	230,437	207,177	222,580	221,390	201,530	221,088
	4-5 hours	143,077	94,524	139,109	105,616	85,797	129,434	124,610
	Over 5 hours	63,039	24,974	60,913	29,557	21,216	46,744	53,814
2006	Under 1 hour	102,933	186,810	96,699	192,359	199,162	146,097	86,033
	1-2 hours	266,543	230,142	252,829	229,911	234,193	238,825	264,245
	2-3 hours	143,729	149,407	158,474	135,940	155,454	153,187	165,514
	3-4 hours	201,461	236,863	213,053	228,903	227,212	207,056	227,417
	4-5 hours	145,775	95,871	141,695	107,295	86,858	131,929	126,717
	Over 5 hours	63,712	25,060	61,403	29,745	21,274	47,059	54,227
2016	Under 1 hour	114,900	216,742	113,214	223,977	227,350	161,531	94,873
	1-2 hours	330,610	280,981	307,903	280,142	289,048	301,350	327,430
	2-3 hours	158,426	164,797	177,143	149,156	174,664	167,869	184,613
	3-4 hours	230,243	270,563	243,396	261,333	256,287	236,735	260,133
	4-5 hours	161,233	103,713	156,086	117,236	93,574	145,983	138,277
	Over 5 hours	67,941	26,557	65,611	31,509	22,430	49,885	58,027

Cumulative Percentage of population (0-15 years) within given travel times

	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	11.3	20.1	10.4	20.8	21.6	16.0	9.4
	1-2 hours	39.1	44.2	36.9	44.7	45.9	40.7	37.0
	2-3 hours	54.7	60.6	54.2	59.7	63.0	57.5	55.0
	3-4 hours	76.8	86.5	77.5	84.8	88.0	80.2	79.9
	4-5 hours	92.9	97.2	93.1	96.7	97.6	94.7	93.9
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	Under 1 hour	11.1	20.2	10.5	20.8	21.6	15.8	9.3
	1-2 hours	40.0	45.1	37.8	45.7	46.9	41.7	37.9
	2-3 hours	55.5	61.3	55.0	60.4	63.7	58.2	55.8
	3-4 hours	77.3	86.9	78.0	85.2	88.3	80.6	80.4
	4-5 hours	93.1	97.3	93.4	96.8	97.7	94.9	94.1
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	Under 1 hour	10.8	20.4	10.6	21.1	21.4	15.2	8.9
	1-2 hours	41.9	46.8	39.6	47.4	48.6	43.5	39.7
	2-3 hours	56.8	62.3	56.3	61.4	65.0	59.3	57.1
	3-4 hours	78.4	87.7	79.2	86.0	89.1	81.6	81.5
	4-5 hours	93.6	97.5	93.8	97.0	97.9	95.3	94.5
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Secondary catchment – Private car

Numbers of population (0-15 years) within given travel times

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	13,029	17,918	5,701	14,486	15,755	5,721	17,967
	15 - 30	42,109	55,612	40,215	55,906	61,021	44,555	77,546
	30 - 45	43,533	95,333	115,729	87,819	100,346	93,009	59,917
	45 - 60	54,498	64,302	70,765	77,137	58,492	61,911	51,964
	60 - 90	99,824	42,610	50,365	36,266	44,805	61,392	76,391
	90+	62,432	39,650	32,650	43,811	35,006	48,837	31,640
2006	0 - 15	13,097	17,918	6,793	14,486	15,755	5,721	19,657
	15 - 30	43,125	55,720	42,412	56,132	61,637	45,063	80,016
	30 - 45	47,181	101,499	120,655	91,718	107,121	97,095	63,863
	45 - 60	58,262	71,121	75,235	86,282	63,813	64,895	55,388
	60 - 90	106,443	47,242	56,007	40,289	50,193	70,487	82,702
	90+	68,415	43,023	35,421	47,616	38,004	53,262	34,897
2016	0 - 15	13,533	17,918	11,461	14,486	15,755	5,721	26,017
	15 - 30	48,405	57,017	49,990	57,021	64,704	46,833	88,976
	30 - 45	61,187	123,892	138,390	108,353	131,361	111,447	78,355
	45 - 60	71,111	95,951	90,304	117,985	82,964	77,962	64,087
	60 - 90	128,791	60,178	74,020	51,242	66,208	100,468	104,700
	90+	83,571	51,642	42,433	57,511	45,606	64,167	44,463

Cumulative Percentage of population (0-15 years) within given travel times

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	4.1	5.7	1.8	4.6	5.0	1.8	5.7
	15 - 30	17.5	23.3	14.6	22.3	24.3	15.9	30.3
	30 - 45	31.3	53.5	51.2	50.2	56.2	45.4	49.3
	45 - 60	48.6	73.9	73.7	74.6	74.7	65.1	65.8
	60 - 90	80.2	87.4	89.6	86.1	88.9	84.5	90.0
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	0 - 15	3.9	5.3	2.0	4.3	4.7	1.7	5.8
	15 - 30	16.7	21.9	14.6	21.0	23.0	15.1	29.6
	30 - 45	30.7	52.0	50.5	48.2	54.8	43.9	48.6
	45 - 60	48.0	73.2	72.8	73.9	73.8	63.2	65.1
	60 - 90	79.7	87.2	89.5	85.9	88.7	84.2	89.6
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	0 - 15	3.3	4.4	2.8	3.6	3.9	1.4	6.4
	15 - 30	15.2	18.4	15.1	17.6	19.8	12.9	28.3
	30 - 45	30.3	48.9	49.1	44.2	52.1	40.3	47.6
	45 - 60	47.8	72.5	71.4	73.3	72.5	59.5	63.3
	60 - 90	79.4	87.3	89.6	85.9	88.8	84.2	89.1
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tertiary catchment – Private car

Numbers of population (0-15 years) within given travel times

	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	153,704	233,165	232,410	235,348	235,614	205,196	207,394
	1-2 hours	168,391	109,737	125,231	97,869	101,174	106,912	140,012
	2-3 hours	96,487	121,260	124,440	119,064	134,864	131,403	150,137
	3-4 hours	129,507	158,577	155,568	155,178	160,831	158,466	178,706
	4-5 hours	206,270	202,193	200,848	209,736	192,962	194,796	172,148
	Over 5 hours	133,951	63,378	49,813	71,115	62,865	91,537	39,913
2006	Under 1 hour	162,237	246,258	245,095	248,618	248,326	212,774	218,924
	1-2 hours	179,563	118,530	135,122	105,623	110,696	119,691	151,235
	2-3 hours	101,428	125,558	128,656	123,867	139,401	137,034	154,734
	3-4 hours	133,257	163,266	159,846	159,927	165,123	163,002	183,945
	4-5 hours	211,208	206,445	205,007	214,196	197,090	199,002	175,182
	Over 5 hours	136,460	64,096	50,427	71,922	63,517	92,650	40,133
2016	Under 1 hour	194,921	294,778	290,145	297,845	294,784	241,963	257,435
	1-2 hours	216,150	144,390	166,350	128,808	138,182	159,774	187,850
	2-3 hours	115,108	138,725	141,913	137,889	154,279	153,876	171,029
	3-4 hours	146,633	181,955	177,770	178,202	183,402	180,913	210,003
	4-5 hours	240,522	235,064	233,636	243,803	224,812	225,785	194,620
	Over 5 hours	150,019	68,441	53,539	76,806	67,894	101,042	42,416

Cumulative Percentage of population (0-15 years) within given travel times

	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	17.3	26.2	26.2	26.5	26.5	23.1	23.3
	1-2 hours	36.3	38.6	40.3	37.5	37.9	35.1	39.1
	2-3 hours	47.1	52.3	54.3	50.9	53.1	49.9	56.0
	3-4 hours	61.7	70.1	71.8	68.4	71.2	67.8	76.1
	4-5 hours	84.9	92.9	94.4	92.0	92.9	89.7	95.5
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	Under 1 hour	17.6	26.6	26.5	26.9	26.9	23.0	23.7
	1-2 hours	37.0	39.5	41.1	38.3	38.8	36.0	40.1
	2-3 hours	48.0	53.1	55.1	51.7	53.9	50.8	56.8
	3-4 hours	62.4	70.7	72.4	69.0	71.8	68.4	76.7
	4-5 hours	85.2	93.1	94.5	92.2	93.1	90.0	95.7
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	Under 1 hour	18.3	27.7	27.3	28.0	27.7	22.8	24.2
	1-2 hours	38.7	41.3	42.9	40.1	40.7	37.8	41.9
	2-3 hours	49.5	54.3	56.3	53.1	55.2	52.3	58.0
	3-4 hours	63.3	71.5	73.0	69.8	72.5	69.3	77.7
	4-5 hours	85.9	93.6	95.0	92.8	93.6	90.5	96.0
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Secondary catchment – Mixed public/private

Numbers of population (0-15 years) within given travel time (ratio of public to private from 2002 Census)

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	6,652	5,286	4,480	5,086	10,354	3,470	10,979
	15 - 30	33,690	48,049	23,919	48,836	38,207	26,787	41,675
	30 - 45	39,423	84,487	78,232	74,104	104,298	79,525	55,338
	45 - 60	48,194	87,102	84,497	100,686	72,876	94,256	69,557
	60 - 90	125,582	50,459	85,343	45,594	61,518	67,007	102,591
	90+	61,884	40,042	38,954	41,119	28,172	44,380	35,285
2006	0 - 15	6,652	5,286	5,378	5,086	10,354	3,470	12,161
	15 - 30	33,969	48,049	26,279	48,904	38,207	26,787	42,918
	30 - 45	42,182	87,284	80,412	75,515	108,429	82,830	56,677
	45 - 60	51,355	96,679	89,341	111,693	79,761	98,497	75,482
	60 - 90	134,645	55,712	92,693	50,711	69,458	76,911	110,610
	90+	67,720	43,513	42,420	44,614	30,314	48,028	38,675
2016	0 - 15	6,652	5,286	9,065	5,086	10,354	3,470	16,751
	15 - 30	35,307	48,049	34,422	49,340	38,207	26,787	47,168
	30 - 45	53,866	99,467	88,220	82,382	125,380	94,059	61,482
	45 - 60	63,520	131,078	105,309	151,761	104,086	116,294	95,316
	60 - 90	164,785	70,275	118,136	64,425	92,726	108,785	137,279
	90+	82,468	52,443	51,446	53,604	35,845	57,203	48,602

Cumulative Percentage of population (0-15 years) within given travel times

	Minutes	BH	GG	JC	MM	SJ	SV	TH
2002	0 - 15	2.1	1.7	1.4	1.6	3.3	1.1	3.5
	15 - 30	12.8	16.9	9.0	17.1	15.4	9.6	16.7
	30 - 45	25.3	43.7	33.8	40.6	48.5	34.8	34.2
	45 - 60	40.6	71.3	60.6	72.5	71.6	64.7	56.3
	60 - 90	80.4	87.3	87.7	87.0	91.1	85.9	88.8
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	0 - 15	2.0	1.6	1.6	1.5	3.1	1.0	3.6
	15 - 30	12.1	15.8	9.4	16.0	14.4	9.0	16.4
	30 - 45	24.6	41.8	33.3	38.5	46.7	33.6	33.2
	45 - 60	39.9	70.5	59.9	71.7	70.4	62.9	55.6
	60 - 90	79.9	87.1	87.4	86.7	91.0	85.7	88.5
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	0 - 15	1.6	1.3	2.2	1.3	2.5	0.9	4.1
	15 - 30	10.3	13.1	10.7	13.4	11.9	7.4	15.7
	30 - 45	23.6	37.6	32.4	33.6	42.8	30.6	30.8
	45 - 60	39.2	69.8	58.3	71.0	68.4	59.2	54.3
	60 - 90	79.7	87.1	87.3	86.8	91.2	85.9	88.0
	90+	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Tertiary catchment – Mixed public/private

Numbers of population (0-15 years) within given travel time (ratio of public to private from 2002 Census)

	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	128,494	224,924	191,128	228,712	225,735	204,038	177,549
	1-2 hours	193,142	125,269	163,631	113,591	117,615	118,770	169,487
	2-3 hours	109,062	128,956	126,815	130,168	143,226	136,719	143,978
	3-4 hours	127,969	153,322	155,091	146,430	165,858	149,068	189,072
	4-5 hours	220,340	203,071	198,973	206,768	187,250	197,960	167,978
	Over 5 hours	109,303	52,768	52,672	62,641	48,626	81,755	40,246
2006	Under 1 hour	134,730	237,298	201,410	241,198	236,751	211,584	187,238
	1-2 hours	206,618	135,326	175,901	122,797	129,031	132,722	182,762
	2-3 hours	114,402	133,234	131,022	135,001	147,680	141,379	148,200
	3-4 hours	131,767	157,581	159,486	150,630	170,513	153,476	194,518
	4-5 hours	225,536	207,376	203,112	211,130	191,039	202,234	170,960
	Over 5 hours	111,100	53,338	53,222	63,397	49,139	82,758	40,475
2016	Under 1 hour	160,030	283,880	237,016	288,569	278,027	240,610	220,717
	1-2 hours	250,610	164,518	216,464	149,358	162,191	175,692	224,941
	2-3 hours	129,165	146,662	144,275	149,668	162,963	156,561	163,610
	3-4 hours	145,712	176,304	179,254	168,202	192,263	170,861	221,195
	4-5 hours	256,709	235,236	229,990	239,723	215,479	229,717	190,063
	Over 5 hours	121,127	56,753	56,354	67,833	52,430	89,912	42,827

Cumulative Percentage of population (0-15 years) within given travel times

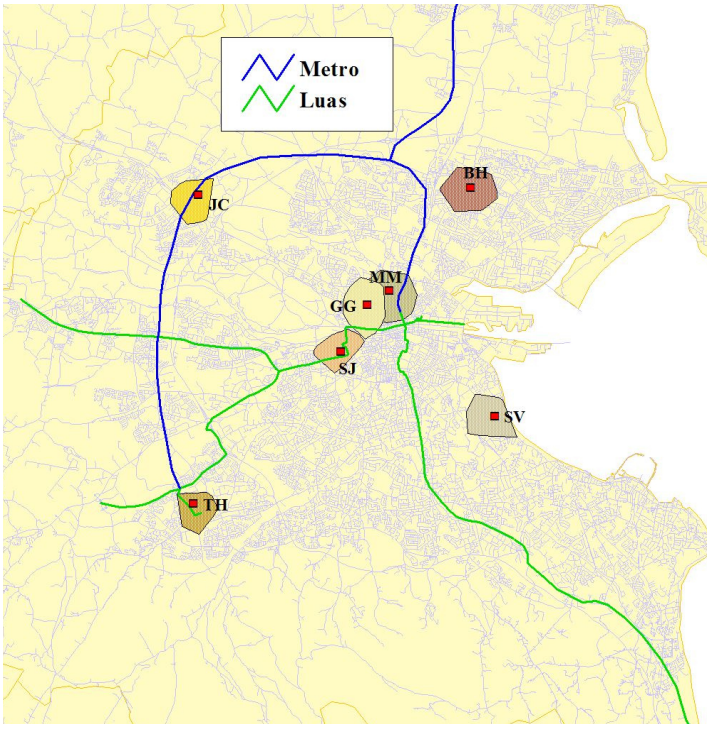
	Hours	BH	GG	JC	MM	SJ	SV	TH
2002	Under 1 hour	14.5	25.3	21.5	25.7	25.4	23.0	20.0
	1-2 hours	36.2	39.4	39.9	38.5	38.7	36.3	39.1
	2-3 hours	48.5	53.9	54.2	53.2	54.8	51.7	55.3
	3-4 hours	62.9	71.2	71.7	69.7	73.4	68.5	76.6
	4-5 hours	87.7	94.1	94.1	92.9	94.5	90.8	95.5
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2006	Under 1 hour	14.6	25.7	21.8	26.1	25.6	22.9	20.3
	1-2 hours	36.9	40.3	40.8	39.4	39.6	37.3	40.0
	2-3 hours	49.3	54.7	55.0	54.0	55.6	52.6	56.1
	3-4 hours	63.6	71.8	72.3	70.3	74.0	69.2	77.1
	4-5 hours	88.0	94.2	94.2	93.1	94.7	91.0	95.6
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2016	Under 1 hour	15.0	26.7	22.3	27.1	26.1	22.6	20.8
	1-2 hours	38.6	42.2	42.6	41.2	41.4	39.1	41.9
	2-3 hours	50.8	56.0	56.2	55.3	56.7	53.9	57.3
	3-4 hours	64.5	72.5	73.1	71.1	74.8	69.9	78.1
	4-5 hours	88.6	94.7	94.7	93.6	95.1	91.5	96.0
	Over 5 hours	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Projected transport changes

Under the Government's Transport 21 initiative, the extensions to the existing Luas lines and the introduction of Metro services are the main changes likely to impact on transport options within the Dublin area.

The projected link between the two Luas lines will improve access to the sites within walking distance of stations: GG, MM, SJ and TH. The extensions will improve access primarily for the suburbs of Lucan, Rathgar, Dundrum and Sandyford.

The proposed routes for the new Metro services are not clearly defined so it is not possible to predict which sites will benefit directly although both JC and TH would appear to benefit. Indications are that the routes will be at least partially orbital and as such will link suburbs but not to the stations at Heuston and Connolly. As the Metro will not be on-street it should provide a fast service – for example, it is projected that the journey time from City Centre to Dublin Airport will be 17 minutes.



Projected transport changes [with 1250m walking catchments shown]

Dublin Bus are in the process of reviewing their bus routes and indications are that they will move away from the traditional radial routing to a system of suburban hubs. According to early reports, these hubs will be located at Dun Laoghaire, Dundrum, Tallaght, Blanchardstown and Swords. These changes may have benefits for locations at JC and TH if these areas become hubs. It is, however, too early to speculate on whether it will lead to increased services or if existing services will simply obtain new termini at the proposed hubs.

The new train station under construction at Spencer Dock will service routes currently arriving at Connolly. It will lead to a greater frequency of services along the Maynooth line although it is unlikely to greatly impact on travel times.

A new station will be built at the Adamstown site in West Lucan where some 10,000 homes are being built. People using this station will alight in Heuston station.

Appendix

CSO regional composition:

Souther & Eastern NUTS 2 Region		Border, Midland & Western NUTS 2 Region	
Region	Comprising	Region	Comprising
Dublin (D)	Dublin City	Border (B)	Cavan
	Dun Laoghaire-Rathdown		Donegal
	Fingal		Leitrim
	South Dublin		Louth
			Monaghan
Mid-East (ME)	Kildare		Sligo
	Meath		
	Wicklow		
Mid-West (MW)	Clare	Midland (M)	Laois
	Limerick City		Longford
	Limerick County		Offaly
	North Tipperary		Westmeath
South East (SE)	Carlow	West (W)	Galway City
	Kilkenny		Galway County
	South Tipperary		Mayo
	Waterford City		Roscommon
	Wexford		
South-West (SW)	Cork City		
	Cork County		
	Kerry		