

# THE LAYOUT of the HOSPITAL.

IN THE MATTER OF AN APPLICATION TO

AN BORD PLEANÁLA

FOR PERMISSION FOR

STRATEGIC INFRASTRUCTURE DEVELOPMENT

(THE CHILDREN'S HOSPITAL OF IRELAND)

ABP Reg. No. PL29N.PA0024

AND IN THE MATTER OF AN ORAL HEARING

Statement of Evidence of Dr Emma Curtis

p.26 Emerg. parking - ? no of spaces validated against no. patients

## **1. QUALIFICATIONS AND EXPERIENCE**

1.1 My name is Dr Emma Curtis. I am a Consultant Paediatrician, special interest community child health, at the Adelaide and Meath Hospital Dublin, Incorporating the National Children's Hospital (AMNCH), Tallaght. I work as an acute, general paediatrician with a special interest in developmental paediatrics, behavioural paediatrics and child protection.

1.2 I graduated from UCD in 1983. Following my internship in St Vincent's Hospital, Dublin, I trained in internal medicine with the Dublin Federated Hospitals scheme achieving my Membership of the Royal College of Physicians in Ireland in 1985. I then travelled and worked in Australia after which I worked in the Mater Hospital Emergency Department and in 1987 commenced training in paediatrics in Dublin. Between 1987 and July 1989, in the course of my paediatric training, I worked in the Children's University Hospital, Temple Street, the Rotunda Hospital and Our Lady's Children's Hospital, Crumlin.

1.3 From December 1990 to May 1994 I worked as a paediatrician in Esteli, Nicaragua.

1.4 From August 1994 to March 1999 I completed my training in paediatrics and community child health in Newcastle upon Tyne, England. I was then appointed as a Consultant Paediatrician, with a special interest in Community Child Health, to the Newcastle upon Tyne NHS Hospitals Trust.

1.5 In January 2002, I was appointed to a Consultant paediatric post in AMNCH, Tallaght and returned to work in Ireland in August 2002.

1.6 I was Chair of the AMNCH Paediatric Medical Advisory Committee from June 2006 to June 2008.

1.7 I was appointed by the AMNCH Hospital Board to the National Paediatric Hospital Development Board in 2007 as the AMNCH clinical representative to the Development Board.

1.8 In September 2008 I was appointed, in open competition, to the post of medical director to the National Paediatric Hospital Development Board.

1.9 The Medical Director post is a half-time post. I continue to work half time as a Consultant Paediatrician at AMNCH, Tallaght.

## **2. ROLE IN PROPOSED DEVELOPMENT**

2.1 As Medical Director to the project I am responsible for:

- Clinical input to the project and Integrated design team
- Liaison with the clinicians in the three children's hospitals and nationally
- Representation of the clinicians' views to the Board and design team
- Close working with the Health Service Executive, and the HSE Service Improvement Group on clinical planning for the new hospital
- Close working with the health planners to the project
- Facilitate the development of Models of Care for the Children's Hospital of Ireland and the Ambulatory & Urgent Care Centre, Tallaght, developing the model for presentation and consultation to the hospital clinicians for further detailed development of those models with them.

## **3. INTRODUCTION**

3.1 The new Children's Hospital of Ireland will bring together paediatric medical and surgical services which are currently delivered across three separate, independent hospital sites in Dublin. The medical, nursing, therapy and non-clinical staff from each of the three hospitals will join together to form a single workforce delivering paediatric clinical care at the Children's Hospital of Ireland on Eccles Street and at the Ambulatory and Urgent Care

Centre at Tallaght. The clinical specialists are currently divided between the three hospitals. In the new system there will be a single team in each specialty, creating a stronger, more flexible team and enabling greater sub-specialisation within the teams. This will enhance the clinical care of all children but especially those with rare conditions and reduce the need for these children to travel overseas for expert clinical care.

3.2 The new hospital has been carefully planned and the work invested in calculating the space requirement has been meticulous. The hospital has two crucial functions. The first is to deliver secondary, general care to the children and young people from the Greater Dublin Area (Dublin City and County, Kildare, Wicklow and Meath). 76% of inpatients in the three children's hospitals at the moment come from the Greater Dublin Area. 65% of children attending for daycare come from the Greater Dublin Area. The second function is to deliver specialist tertiary care to children from all over the island of Ireland (tertiary care involves the clinical care of children who, having been seen by a more general paediatric specialist, need a more specialised, perhaps organ specific opinion (e.g. liver, brain, heart, lungs, nervous system etc)).

3.3 The design of the project has been clinically led. The design and scope of the hospital has been planned, and designed, based on the projected clinical activity, and activity acuity, which it will be required to deliver. The hospital must be of sufficient size to provide care to the hundreds of thousands of children who will attend it each year. The building design will promote and enable safe, efficient, high quality clinical care. The design will have the flexibility to adapt to evolving clinical care over the next number of decades. The design will promote a healing environment and deliver a building in which it is pleasure to work promoting low levels of absenteeism and staff turnover.

3.4 The NPHDB facilitated the development of a National Model of Care document in 2009. Responsibility for further consultation and implementation of this has been assumed by the recently appointed by the HSE National Programme Lead for paediatrics. Earlier this year, a MOC for the hospital and A/UCC was developed. This provides a framework for the development of general and specialty care delivery models. There is clear understanding of

projected levels of activity and acuity of care required in the new hospital. While much consultation about clinical care delivery has taken place to date, this process is ongoing.

#### **4.0 PATIENT EXPERIENCE IN THE CHOI EMERGENCY DEPARTMENT**

##### **4.1 Emergency Department**

A large, specialist children's hospital is an extremely complex organisation. There are multiple elements involved in clinical care delivery which spans the ages from birth to 16 years and encompasses minor to serious and life-threatening conditions. For many children, and especially for children from the Greater Dublin Area, their patient journey starts in the Emergency Department. For some, this may be the only contact they have with the Children's Hospital.

4.2 The Emergency Department (ED) is on Level 0. Approximately 65,000 – 70,000 children each year will attend the Emergency Department, 180 – 190 patients each day. Patient attendance is spread throughout the day:

- approximately 18% of the day's patients attend the current three children's hospitals EDs between the hours of 08.00 hours and 12 midday
- 26% attend between the hours of 12.00 midday to 16.00 hours
- 26% attend between the hours of 16.00 hours to 20.00 hours
- 18% attended between the hours of 20.00 to midnight
- 9.3% attended in the 8 hour period between midnight and 08.00 hours.

The majority will have their problem solved and be discharged home and back to the care of their GP. Discharge rates for each of the three children's hospitals in 2009 were: OLCH 84.6%; CUH 93.4% and AMNCH 82.8%. This gives an average admission rate of 14% (discharge rate of 84%). Some of these children may require medical or surgical intervention and a period of observation in the Emergency Department Observation Unit following which they will be discharged.

4.3 Among those children who require admission to the hospital, most will require admission to the acute general medical or surgical inpatient units for further investigation and treatment. Some with more complex conditions may require admission to a specialist unit.

4.4 A smaller percentage of children will present to the hospital in a serious condition, perhaps brought by ambulance (6-8%). They will enter from the rear of the Emergency Department at Level 0 and be brought straight to the resuscitation rooms in the emergency department for life-saving treatment. Within the resuscitation rooms, the emergency team, using their skills will optimise the outcome for the child who presents with a critical illness or injury. This treatment is facilitated by the resuscitation room design and equipment e.g. X Ray in room.

4.5 Paediatric practice is different in many ways to adult practice. One way in which it is different is that parents can carry their children. For that reason, some children who are critically ill will not arrive by ambulance but by private transport entering through the front of the department taking either the stairs, ramp or the one-floor lift into the department. The resuscitation room is also close to the pedestrian entrance and the parent and critically ill child will be directed there immediately and treatment initiated.

4.6 This will be a very busy emergency department seeing approximately 65-70,000 children annually. It is the clinical aim of the department to manage the illnesses and injuries of the majority of children within the department and to discharge them back to the care of the community. In order to offer this high quality clinical care efficiently within the department, there will be within the department the facility to take X Rays (which can diagnose pneumonia, fractures or the presence of foreign bodies). Consideration is being given to the location of a CT scan in the department in order to do an urgent head scan when a child presents with a head injury. The staff will need clinical examination rooms in which to interview the child and parent and make a clinical assessment of the problem with which the child presents. While they might take blood samples in the same room they will use procedure rooms to perform lumbar punctures (to diagnose meningitis), suture

lacerations, apply casts to fractures, take urine samples, reduce a fracture (improve the lie of the broken bones) etc.

4.7 A child who presents with asthma, or pneumonia, requiring oxygen and medical treatment will be admitted to an ED Observation room for treatment and assessment of their response to treatment. They can stay here for up to 6 hours at which time a decision will be made either to discharge the child to admit the child to an inpatient medical assessment ward. Depending on the condition of the child on assessment, an immediate decision to admit the child to an inpatient ward might be made.

4.8 Children and adolescents who are acutely, mentally ill may come to the hospital. These symptoms are particularly distressing for the child, young person and their families. In the ED design there are specialist mental health rooms provided for the care of children and young people who are distressed and/or mentally unwell. These afford them privacy, reduced stimulation and an environment designed to reduce the stress being experienced by the child and their family while the mental health team carries out an assessment, provides appropriate therapy or arranges inpatient admission. There are specific design requirements for these rooms which have been applied to their design.

4.9 If a child requires admission to an inpatient ward or the intensive care department, they will be transported to the ward by the patient lifts situated behind the emergency department. These lifts are available to staff and patients only and the unwell child and their family will not have to meet with or travel with members of the public.

4.10 There is a large light well in the middle of the department which aside from ensuring penetration of natural light into the centre of the department may also be used as a garden space, a play area or a more open waiting area for children. Internal design of this space will be developed with the clinicians who work in the department and with the family forum and youth advisory group.

4.11 The ambulance entrance to the paediatric ED is at the same level, and reasonably close to the ambulance entrance to the Mater Adult ED. This design offers the opportunity for enhanced care in the event of a major incident.

4.12 The mortuary is situated on Level 0. The design of the mortuary responds to family's need for privacy, comfort and support. While close to the Emergency Department there is no visual or patient/parent contact with the ED.

Mortuary

## **5.0 PATIENT EXPERIENCE IN THE CHOI: THE ATRIUM**

5.1 The atrium is a large, bright open space designed to comfortably accommodate the large numbers attending the hospital daily. Daily attendance to the outpatient department is approximately 143,000 children annually (600/day), there are 27,885 inpatients each year in the hospital who will have visitors coming in to see them daily. Children will attend the X Ray department for scheduled X Rays and scans and 18,000 children and their families will traverse this space annually on their route to the daycare ward.

5.2 The design of the atrium demonstrates a large, bright multi-story space which will fulfil a number of functions. Families will wait here if they arrive early for their child's outpatient appointment. Within this space there will be play areas, changing facilities, changing and bathing facilities for children with a disability, cafes and coffee shops for those who have travelled far and require sustenance before their journey home. The signage will be bright, clear and easy to follow. There will be a welcome desk, a retail pharmacy, shop and seating. There will be kiosks where parents can register for clinics and at the time of the child's appointment they will be directed to the waiting area outside the clinic room where they will be seen. There will be a phlebotomy department in the atrium which will take blood samples from children attending OPD and those sent in by their GPs.

## **6.0 PATIENT EXPERIENCE IN THE CHOI: OUTPATIENT DEPARTMENT LEVELS 1 & 2**



73 6.1 The largest group of patients who attend the hospital will attend the outpatient department (OPD). Approximately 143,000 children will attend the outpatient department at the Children's Hospital of Ireland at Eccles Street each year. That is approximately 600 children and adolescents attending the outpatient department every day that the department is open (48 weeks/5days per week). The design of the hospital ensures that the largest group of patients attending the hospital will readily access the area they require. Penetration into the upper levels of the hospital is limited to much smaller numbers visiting the wards including those attending the therapy park or attending the specialist, low volume outpatients situated on the upper levels. This is essential from the viewpoint of infection control and also concentrates the largest numbers in the more open area of the lower floors. The children who attend this outpatient department will have been referred from a number of sources; from their GP to a secondary, general paediatrician or to a specialist paediatrician from a secondary general paediatrician in the hospital or from one of the regional hospitals.

6.2 The outpatient department is organised in "neighbourhoods". Each neighbourhood consists of a "cluster" of specialties, with their specialist multi-disciplinary teams, accommodated around a suite of clinic examination and clinical support rooms. Care of children with complex conditions requires multi-disciplinary team involvement. This team might include a general paediatrician, one or more specialist paediatricians, an advanced nurse practitioner (ANP), clinical nurse specialists, health and social care professionals (physiotherapists, speech and language therapists, dieticians, social workers, psychologists and occupational therapists), pharmacists and non-clinical support staff such as secretarial and administrative support.

6.3 The team involved in the care of children with complex needs can be large indeed. This team is accommodated in one area so that the child can be seen by the different team members without significant travel or inconvenience and the team members can consult each other easily on matters of clinical care. Because of the "team around the child" principle there is a need for a number of different types of rooms. There is a need for clinic examination rooms for the medical consultation, interview rooms for social work or

psychology type interviews, therapy rooms for the therapy staff, treatment rooms where the ANP may administer treatments and a conference room where the team can discuss the child and makes treatment decisions based on whole team input. There are also designated rooms for the treatment of wounds requiring dressing and an infusion area for children requiring specialist intravenous treatment for their condition. This “team around the child” approach requires a much larger outpatient space than the traditional model based on doctor – patient consultation alone.

6.4 There will be at least 29 different medical and surgical specialties providing outpatient care in the new children’s hospital. The outpatient occupies the entire floor area on Level1, half of floor area on Level 2. There are specialist outpatient services on Level 8, including oncology/haematology. The children attending this service are often very unwell and may have an immune deficiency and therefore cannot mix with the general, outpatient attending, paediatric population. Child and adolescent psychiatry outpatient care will also be delivered close to the inpatient unit on Level 7.

6.5 Orthopaedic fracture clinics are very busy. They might see upwards of 50 children in a fracture clinic and most of these will require an X Ray of the injured part. For this reason, we have placed the orthopaedic outpatient clinics right beside the radiology department on Level 1 in order to facilitate efficient running of that clinic. Many other outpatient clinics will send children for Xrays, to book ultrasound scans, CT scans and/or MRI scans. These scans are scheduled activities with the machines working to maximum efficiency.

## **7.0 PATIENT EXPERIENCE IN THE CHOI: LEVEL 3 THEATRE FLOOR**

7.1 Level 3 is the theatre floor. Most paediatric surgery in the country will be done in this hospital. All infants, toddlers, small children and older children with complex health needs will have their operations here. Very young infants and children from all over Ireland will have their surgery here, even if the surgery itself is not complex, because of their need for specialist paediatric anaesthetic expertise.

7.2 It is planned to have separate flows of patients for day care (same day) surgery and more complex, inpatient surgery with dedicated daycare theatres and daycare beds so that elective daycare surgery continues unimpeded by emergency unplanned inpatient activity.

7.3 Same-day surgery tends to be less complex, to usually take less time and the child can be admitted and discharged on the same day. The number of day theatres is based on current and projected day surgical activity. There are also procedure rooms for endoscopy. Endoscopy currently has to compete for theatre space and anaesthetic time. The new design will address this deficiency.

7.4 The day beds/ward is on this floor also in order to provide rapid access from the ward to the theatres and back again. There is a shift within health care towards day care, surgery where possible. This design reflects that trend. It is an efficient use of resources and reduces the time spent by children in hospital.

7.5 There will be 13 theatres, 2 procedure rooms and 2 endoscopy rooms in the new children's hospital.

7.6 Within the theatres destined for more complex surgery there are general and designated theatres. There are surgical specialties which require specialist equipment, or specific air movement, or which carry out lengthy, complex operations and these specialties will have designated theatres. These include cardiac surgery, orthopaedic surgery, neurosurgery, interventional radiology and ENT surgery among others. A number of these theatres are very large because of the huge amount of technical equipment required to support this complex surgery.

7.7 There is a designated emergency theatre. Currently, a child admitted as an emergency who requires surgery, may have to wait until the day's planned surgery is completed before having their operation. This requires a lengthy and unpredictable period of fasting and uncertain waiting for the child and family. This is not best management. The

designation of an emergency theatre means that these children will be operated upon according to their clinical need leading to better care and better outcomes.

7.8 There are two cardiac catheterisation laboratories on this theatre floor and also an interventional radiology laboratory. Agreement has been reached between the cardiology and radiology staff for the interventional radiology team to use the bi-plane cardiac laboratory when required. This promotes efficiency and optimal use of specialist space.

7.9 Parent accommodation is provided on this floor for the parents of children in the intensive care department. This allows parents to rest while remaining close to their ill child. There is also in room overnight accommodation for parents and a patient parent hostel planned for Eccles Street.

#### **8.0 PATIENT EXPERIENCE IN THE CHOI: LEVEL 4 INTENSIVE CARE**

8.1 Level 4 is the intensive care floor and the cardiac inpatient ward. The most ill children in Ireland will be cared for in this unit. It will be the only paediatric intensive care unit in the country. Critically ill and injured children from all over the country will be transferred to this unit for highly technical, multi-system specialised care.

8.2 There will be 62 rooms/beds in this unit. This number was determined using a number of sources. The first was the report commissioned by the HSE in 2008 on paediatric intensive care needs in Ireland (*Right Care, Right Place, Right Time: Advice on the development of paediatric critical care facilities and services in the Dublin children's hospitals between now and the completion of the National Paediatric Hospital. DNV*); Secondly, population and labour force growth projections were calculated and lastly the team consulted with the chair of the Irish Paediatric Critical Care Network (IPCCN) (responsible for the implementation of the DNV report).

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20m<sup>2</sup>  
8.3 The intensive care rooms are more spacious than the rooms on the wards (25m<sup>2</sup> versus 20m<sup>2</sup> with two especially large rooms at 30m<sup>2</sup> each) because of the large amount of complex equipment required for the care of these children.

8.4 These rooms do not have en suite facilities for infection control reasons.

8.5 These rooms do not have overnight parent accommodation because of the amount of equipment in the room and complexity of illness of the patients. In order to support families there are recliner chairs in the rooms and separate in-hospital parent accommodation on level 3. The entire focus on this floor is on the clinical care of the critically ill child.

8.6 There are three sections in the intensive care department. These are paediatric intensive care beds, cardiac intensive care beds and neonatal intensive care beds. Most of the work in the cardiac unit will be planned heart surgery on infants and children with congenital heart disease. Children admitted to the paediatric intensive care unit will include children with serious illness, major trauma, life-threatening infections and congenital conditions requiring surgery. Neonates are infants in the first month of life. These infants are often transferred from the maternity hospitals with life-threatening conditions requiring surgery in that first month. Ideally, in the future, with the growth in ante-natal diagnosis of congenital abnormalities, many of these infants will be transferred in utero so that may be delivered in the maternity hospital adjacent to the new national paediatric hospital for easy transfer to the paediatric hospital.

8.7 The paediatric critical unit requires meeting rooms, conference facilities and office space for staff based on the unit.

8.8 The cardiac ward is to the right of this floor. It is not part of the critical care unit but is close to it in order to facilitate the smooth passage of post-operative children from critical care to step down beds on the cardiac ward. The catheter labs are on the theatre floor just below this level for easy transfer from the labs to the ward.

8.9 It is also considered that this hospital will provide complex heart surgery for the whole island of Ireland and 4 extra beds have been allocated for those children.

#### **9.0 PATIENT EXPERIENCE IN THE CHoI: LEVEL 5**

9.1 On Level 5 the design team have located the plant floor required to support the very technical theatre and critical care floors below. Level 5 also provides space for administrative offices, clinical skills laboratories and clinical support services. The public will not have any requirement to visit this floor.

#### **10.0 PATIENT EXPERIENCE IN THE CHoI: LEVEL 6**

10.1 Level 6 provides accommodation for the therapy area and for the CHoI Research Institute.

10.2 The therapy departments on level 6 will accommodate areas with significant space requirement such as the physiotherapy gym and hydrotherapy pool, occupational therapy splint rooms, play therapy rooms, speech and language therapy and dietetic clinical and team space. The therapy space on this floor will provide therapy to inpatients and specialist input to outpatients.

10.3 Children attending this hospital for complex orthopaedic surgery, burns treatment and rheumatological disorders all require this specialist therapy facility and equipment. This type of clinical support is available in many adult hospitals but not routinely in the children's hospitals. This development will enhance patient care in these areas.

10.4 The therapy area also has access to outdoor space at this level which will be beneficial in the rehabilitation work carried out in this area.

10.5 Research must be a core function of the Children's Hospital of Ireland. There is a designated research centre on Level 6, dedicated research beds on Level 4 and dedicated

research clinic rooms on Level 1 and in the Emergency Department at Level 0. However, research will take place throughout the hospital.

10.6 An active research community within the hospital is a critical driver of quality healthcare for sick children in Ireland. The research facility must be located within the hospital complex and have governance, management and research support infrastructure that are integrated into the executive functions of the Children's Hospital of Ireland.

10.7 The Children's Hospital of Ireland must embed research as a core principle and enterprise at the hospital as it is widely accepted that not to do research with children is unethical. With the significant educational commitment of the hospital there is an unprecedented opportunity for the integration of research into all aspects of the clinical education and training process.

10.8 All models of care at the Children's Hospital of Ireland must be underpinned by systematic clinical enquiry (research) in order to improve our understanding of the disease process and the factors which contribute to the health and happiness of children.

#### **11.0 PATIENT EXPERIENCE IN THE CHOI: LEVEL 7**

11.1 Level 7 accommodates specialist outpatient clinics, including child development, child safety, child and adolescent mental health and neurology.

11.2 The inpatient child and adolescent psychiatry unit with 20 inpatient beds is also on this floor. Eight of the 20 beds will be for children with eating disorders and the remaining 12 for children with general mental ill health. This requirement was defined in *A Vision for Change. Report of the Expert Group on Mental Health Policy. Government of Ireland 2006*. There will be both a local and national service provision within this unit.

11.3 Because of the nature of the service provided there are specific design and building requirements for this unit. The design has complied with these.

11.4 Mental health day care and outpatient services are also provided in this area facilitating pooling of staff expertise and creating a sense of security and familiarity for this patient group.

11.5 This service liaises very closely with community child and adolescent mental health services at a local and national level.

## **12.0 PATIENT EXPERIENCE IN THE CHOI: LEVEL 8 HAEMATOLOGY/ONCOLOGY**

12.1 Children with solid malignant tumours and blood and lymphatic system cancers have very specific needs and can be very unwell on presentation and indeed during the course of their treatment.

12.2 Children with non-malignant haematological will also be cared for on this level. In recent years in Ireland, there has been a growth in non-malignant haematological conditions, such as sickle cell disease. These children can be extremely unwell on presentation. Inpatient, outpatient and daycare facilities for this group, and for those with other non-malignant haematological conditions, are provided on this floor. The medical, nursing and therapy staff, with appropriate expertise, will all be based here.

12.3 International evidence supports the view that adolescents with cancer have different needs to those of younger children. For that reason, we have a dedicated area for adolescent in-patients with cancer.

12.4 Bone marrow transplantation is a complex procedure, required by children with cancer and with immune deficiency. These children have a huge vulnerability to infection during the immediate post-transplant stage. There is a special bone marrow transplant unit on this level which meets the stringent infection control and air flow requirements of such a unit.



12.5 Because of the susceptibility of this group of patients to infection outpatient, day care and inpatient services are all delivered on this one level.

12.6 The clinical team also has its offices on this level so that they can work closely together and be readily available to their patients and their families.

12.7 There are stringent controls regarding the preparation of chemotherapy. For this reason there is a self contained pharmacy area in this department in order to meet the needs of the unit.

### **13.0 PATIENT EXPERIENCE IN THE CHOI: LEVEL 9**

13.1 There is a large adolescent space on this floor so that young people, who are inpatients, and well enough, can gather in a common room where there will be organised recreational activities, access to computers, games etc. This space provides an opportunity for young people to access leisure activities independently which would be the usual way for them if they were not ill. It is an effort to provide normal peer interaction in an abnormal setting.

13.2 This area also provides play space for younger children, music and play therapy space, space for arts and crafts and a multi-sensory room.

13.3 The hospital school is also on level 9. This school is provided by the Department of Education. Many children with complex and chronic conditions spend prolonged periods of time in hospital. The presence of a school provides an element of normality but also enables the child to keep pace with his or her peers while in hospital.

13.4 There are dining facilities for staff and families on this floor also.

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+ seat - 9

#### 14.0 PATIENT EXPERIENCE IN THE CHOI: IN-PATIENT WARDS

14.1 The five ward levels rise above the podium at this stage (Levels 10-14). These wards will provide accommodation for children from the Greater Dublin Area with secondary general conditions who require inpatient care and for children from all over Ireland with complex, conditions which often affect more than one organ system

14.2 Each ward has isolation rooms so that a child with a serious infection does not pass it on to others and so that a child who is vulnerable to infection may be accommodated there in order to protect them from infection.

14.3 The number of beds for this hospital is the outcome of meticulous work on the part of the health planners. This work has been presented for external validation on two occasions. This work on projected clinical activity and acuity has predicted the inpatient accommodation required for planned (elective) secondary and tertiary work. The health planning work has also predicted the likely unplanned (emergency) inpatient clinical activity and its accommodation requirements. While these admissions are unplanned, this work tends to follow a relatively predictable pattern year on year.

14.4 The average overall occupancy rate for inpatient beds is 85%. This includes planned elective admissions over 5.5 days and unplanned (emergency) admissions to the acute admission unit. The exception to this is critical care for which there is a predicted 70% occupancy level. This lower level of occupancy is to ensure constant availability of critical care beds as the only paediatric critical care unit in the country.

14.5 In Dublin, at the moment, no child is ever on a trolley, in Dublin. That must not happen in the future. The clinical activity and acuity work has calculated the projected bed requirement for acute secondary care for the Greater Dublin Area and bed requirements national tertiary care, to ensure that this does not happen.

14.6 The hospital must also respond to the needs of the regional hospitals whose consultants regularly need to transfer ill children with complex conditions for more specialist care.

14.7 In the hospital, all the bedrooms are single rooms, with en suite facilities and in-room parent accommodation. The evidence to support 100% single rooms, in terms of infection control is compelling (infection is the greatest threat to unwell people, of any age, in hospital). Single rooms also provide privacy for medical consultation, privacy for procedures, privacy for dressing and undressing, privacy for patients who are unwell and worried, privacy for families to consult together and privacy to pursue the leisure activity of their choice e.g. TV, play station, computer, social networking and music, without inconveniencing other patients and their families.

14.8 Each inpatient room is bright, spacious and has views across the city.

14.9 Contact with other children, play and entertainment is also very important for healing. For that reason there will be play areas on each ward, outdoor play facilities on many levels and age specific leisure facilities (e.g. adolescent and toddler rooms on level 9). There is the potential to show movies in the lecture theatre on level 0 and there is space for music and drama performances in the atrium.

14.10 The inpatient wards have 24/25 beds per ward. There is extensive work being done on the nursing workforce required to staff these wards and the principle being used is one of acuity based staffing. A child who is more ill will require more nursing care and that nurse will look after a smaller number of children than a nurse who is looking after a group of children with less severe illnesses.

14.11 The nursing stations are spread throughout the ward so that the nurses will be out among the patients rather than at a central base distant from their patients. The ward is planned so as to reduce walking time for the nursing staff with satellite stations holding the materials relevant to their care of these children.

## 15.0 EDUCATION IN THE CHOI : LEVEL 15 & THROUGHOUT THE HOSPITAL

15.1 The new children's hospital will have a huge educational role. The multi-disciplinary team will provide education to parents, and children, on a daily basis. They will educate families about their child's condition, the treatment required, how to look after their child at home, how to do dressings, how to prepare special meals, how to resuscitate their child if necessary, how to administer emergency medication and much more. This will take place in inpatient rooms, in education rooms and meetings rooms on the inpatient wards, day case wards and in the outpatient department.

15.2 The hospital will provide medical undergraduate training to medical students of the three Dublin Universities, University College Dublin (UCD), Trinity College Dublin (TCD) and the Royal College of Surgeons in Ireland (RCSI). The three colleges plan to work together, to develop a common curriculum for training of future doctors in paediatric care. There will be up to 750 medical students attending the hospital annually.

750  
med.  
students

15.3 Specialist training for doctors who wish to specialise in paediatrics will also take place in the hospital. These doctors will gain clinical experience through their work but will also require supervision and training (to include tutorials, teaching sessions, journal clubs, mentoring). Space has been allocated for this throughout the hospital and within the Education Centre on Level 15.

15.4 Qualified, registered doctors must commit to lifelong skill maintenance and training. There is now in place a requirement to demonstrate this to the training colleges and to the Irish Medical Council on an ongoing basis. The design has incorporated facilities which support the ongoing professional development of the consultant staff within the hospital. Examples of these include the lecture theatres where whole hospital grand rounds can take place, conference rooms for clinico-pathological conferences, conference facilities in the seminar rooms on level 2 for radiology conferences, team meeting rooms for teaching, training and supervision on outpatient and inpatient levels and the presence of research

and education facilities within the hospital stating the importance of both of these to students, trainees and doctors alike.

15.5 Undergraduate nursing students from UCD, TCD and Dublin City University (DCU) will all attend the hospital for their practice based training. There will be 650 undergraduate nursing trainees, on a rolling programme, over a 4 year period who will train in paediatric nursing in this hospital.

650  
student  
nurses

15.6 There is also a well organised, mandatory ongoing professional development programme for registered nurses which must be delivered in the hospital.

15.7 Undergraduate students in physiotherapy, speech and language therapy, occupational therapy, dietetics and psychology will all undertake their clinical paediatric placements in this hospital. The Education Centre provides a base and focus for all this educational activity but education in health is a continuous process which takes place on a daily basis throughout the hospital in both planned activities and spontaneous events.

## **16.0 PATIENT EXPERIENCE IN THE CHOI: CLINICAL SUPPORT SERVICES**

16.1 This will be a very large and busy hospital. I have described above how the clinical services will work for patients and their families and the fact that many of these children will require multi-disciplinary input. However, behind these clinical services are a number of clinical support services without which the clinicians cannot care for the child.

16.2 These clinical support services include radiology, laboratory services, pharmacy and clinical engineering among others.

16.3 The diagnostic imaging department (X Ray) is on Level 1. This will be a very busy department providing diagnostic support to the outpatient department, inpatients, theatre, critical care and the emergency department.

7.2

16.4 The diagnostic imaging department will require the equipment necessary to deliver a modern, responsive diagnostic service. The department will contain facilities which include general radiology rooms for inpatient and outpatient plain X Rays; ultrasound rooms; fluoroscopy rooms, 1 CT scanner, 3 MRI scanners, a DEXA scanner and a nuclear imaging department. This level of diagnostic imaging is required for the patient numbers and complex clinical profile presenting to this hospital.

16.5 Radiologists work very closely with the general and specialist clinicians. They advise on appropriate investigation. Regular weekly conferences with the different clinical groups will be held in the seminar rooms in the radiology department.

16.6 Interventional radiology is starting to develop in paediatric practice in Ireland. It is more established in adult practice. The model of care will support the development of interventional radiology as it reduces the need for open surgery and reduces inpatient time and morbidity for children undergoing the procedures. An interventional radiology lab has been located on the theatre floor.

16.7 A space will be identified and prepared for the installation of a PET scanner though it is not our intention to install a PET scanner by 2016. It would be unwise not to prepare for the likelihood that this will become a more commonly used diagnostic modality in the future than it is now. It would be difficult to install one in the future if the space were not appropriately prepared now.

16.8 The laboratories provide a crucial service to children attending the hospital. The haematology, biochemistry, histo-pathology, micro-biology, metabolic, immuno-chemistry, molecular, stem cell, coagulation and immunology laboratories are all involved in the diagnostic, therapeutic and monitoring process in a hospital of this size and scope. They work closely with the clinicians on the wards, interpreting results, advising clinicians, chairing the weekly clinico-pathological conferences, attending ward rounds (e.g. microbiology in intensive care).

16.9 The microbiology team is also very involved in infection control in the hospital as a whole and usually lead the hospital infection control team.

16.10 There will be a number of national laboratories in this hospital including the national meningococcal screening lab and the newborn heel-prick screening lab.

16.11 The pharmacy plays a crucial role in dispensing drugs to the wards; advising re drug interactions and side effects; monitoring drug prescribing; preparing complex medications and in the new hospital dispensing medication to the patients leaving hospital.

16.12 The pharmacy plays a very significant role in safety in the hospital as drug errors contribute significantly to patient morbidity and mortality. The HSE plans to introduce an e-medication system which will support safe prescription of medication. The role and importance of the pharmacy is likely to increase in the coming years.

16.13 The dispensing of medication on-site means that parents can get the prescribed medication before they leave the hospital but it also provides an opportunity for the pharmacist to ensure that the parent understands the administration instructions and what potential side effects they should look for.

## **17.0 SUPPORT SERVICES**

17.1 In such a large and complex institution such as the new national paediatric hospital clinical service delivery is supported by a large number of services such as clinical engineering, facilities management, laundry, catering, cleaning, IT, administration, finance and human resources all of which enable clinicians to provide the best clinical care to children.

17.2 While a hospital governance model has yet to be finally determined the hospital will require a CEO and support staff to lead the hospital forward and ensure it meets its

commitment of quality and safety in the delivery of clinical care to Dublin and the Nation's children.

#### **18.0 CAR PARKING**

18.1 Another way in which a children's hospital differs from an adult hospital is that parents of sick and/or disabled children are more likely to drive to the hospital than arrive by public transport.

18.2 In a review of clinical activity in the 3 children's emergency departments in 2009 it was noted that of the 106,460 ED attendances 88-91% attended by car.

18.3 For this reason there is an appropriate parking allowance requested as part of the planning application.

18.4 There is protected parking space for those attending the emergency department.

#### **19 Conclusion**

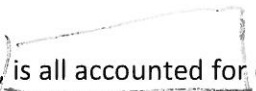
19.1 The Government decision to build a new national paediatric hospital to provide secondary general paediatric care for children from the Greater Dublin Area and national, tertiary care for all the children of Ireland is welcomed as the most positive step towards providing high quality, safe and effective care for children.

19.2 The design submitted for planning consideration has evolved in response to the clinical requirement and has incorporated best international practice into the proposed design.

19.3 There has been meticulous work carried out in the activity and capacity planning for the hospital and it is this understanding of the clinical activity, and its acuity, which has driven the design process.



19.4 The design is based on the projected clinical activity in the inpatient, outpatient, daycare and emergency areas. The planning has included occupancy levels appropriate to a well organised and efficient hospital with the capacity to respond to the expected rise and fall in unplanned clinical activity levels and to unexpected, but inevitable variability in planned clinical activity.

19.5 The space within the hospital, while significant,  is all accounted for either in terms of clinical activity or clinical support requirements and there is space to support children and their families, emotionally and psychologically, during their stay in hospital.

19.6 The evidence based design aims to support healing and to promote safety and efficiency in the delivery of clinical care.

19.7 Every element in this design can be justified from the viewpoint of clinical need.

19.8 This is a wonderful opportunity to provide a physical setting and environment where safe, high quality, effective clinical care can be delivered to the children of Ireland.

Thank you

19 October 2011