**Small and Special: the Hospital for Sick Children at Great Ormond Street Historic Patient Admissions Database**

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*Small and Special* [2] is the database of the historic admission records for the Great Ormond Street Hospital for Sick Children. The database contains information relating to all 84,190 individual patient admissions from the day the hospital opened in February 1852 until the end of 1914, and a further 10,290 admissions to the hospital’s convalescent home, Cromwell House in Highgate, covering the period 1869 when it opened, until 1904. The name is taken from Elizabeth Lomax’s book, *Small and Special: the Development of Hospitals for Children in Victorian Times*: at approaching one million records the database can hardly be called small, but it has every claim to be special.

The first dedicated children’s hospital in Britain, the hospital did start small, with only ten beds, soon rising to 20. It expanded to 75 beds in 1858, 120 years later, and increased capacity yet again in 1893. In the early days the hospital admitted only a few hundred children a year, but by the early 20th century there were up to 3,000 in-patient admissions annually, plus over 20,000 out-patients. The latter, however, are not included in this database. A substantial number of children were transferred to the convalescent home of Cromwell House, one of a range of convalescent institutions used by the hospital, which opened with 52 beds in 1869, rising to 150 by 1885, and which catered mainly for the youngest convalescent patients who would not be admitted to private institutions, and those with chronic complaints. The website mediates access to a machine-readable database of the transcribed inpatient admissions registers, covering children aged from a few days old to 16 (although the oldest patient was actually aged 30, she was admitted only because she was a nurse at the hospital who had fallen ill with scarlet fever). For children under the care of the hospital’s key founder, Dr Charles West, the admission record is linked to a scanned copy of Dr West’s case notes. These are supplemented by a library containing a series of articles on the founding of the hospital, the history of its buildings, departments, and associated convalescent homes, and the daily life of the children in the hospital and their parents. There are also brief biographies of 21 doctors, a handful of nurses, a dozen patients, the founders and other influential supporters and benefactors such as Charles Dickens, and these are complemented by a gallery of photographs and contemporary illustrations.

The admissions registers themselves consist of one record for each admission, each record containing the child’s name, age, gender, address, the name of the admitting doctor, the illness the child was suffering from, the dates of admission and discharge, where they were discharged to, and the outcome of the treatment. All these have been entered exactly as given in the original documents, and in addition other fields have been added: standardized names, addresses and diseases providing enhanced search capacity, and other derived
fields generating useful information from the existing data, such as length of stay and year of birth. The website contains clear and relevant information about the generation of the database, the data entry and checking procedure, which fields are added and how they have been derived. Records relating to children admitted less than 100 years ago have been anonymised by hiding the name data, but with great efficiency, ‘de-anonymisation’ is taking place on a daily basis as the 100 year mark is passed. Thus on 9 June 2009, it is possible to see the names of those children admitted on 9 June 1909, but not those admitted the following day. Data entry was performed by volunteers, but was painstakingly double checked to ensure accuracy: the process being explained in detail in the section ‘about the project’, where the various individuals involved in the project are also listed. The supporting articles are interesting, appropriate, scholarly and answer many questions about the history, development and operation of the hospital.

The website provides a simple search facility enabling searching by name (standardized forename and non-standardized surname) and year of birth, with an option to specify various bands of years either side of the specified date. A more comprehensive search facility permits more flexibility in searching for names starting with a given letter or group of letters, and also sex and age on admission (within a chosen range). While it is not compulsory to register with the database, only these basic search facilities are available for non-registered users. Registration, which is simple and painless, opens up the possibility of searching on virtually every field in the database, neatly arranged in four panels: personal details (names, sex, year of birth, age on admission), residence (location keyword, street name, registration district and registration sub-district), admission and stay (hospital admitted to, date of admission, admitting doctor, length of stay in days, and whether case notes are available), and disease, outcome and discharge (disease name, disease group, ICD10, outcome, where the child was discharged to, and date of discharge). Searching is aided by drop-down lists of the possibilities where these are not too numerous and, for dates and ages, the option to specify either a precise date or age, or a range. Incredibly detailed and precise searches are therefore possible, and research is aided by the facility for registered users to download sets of complete records, which can be used for subsequent analysis, although these are limited to only 200 records per search. Contact with the website team is possible using a web form, and it is also easy to report errors or discrepancies with particular records in a similar fashion.

To get and download a few fairly random samples of records, but which would also preserve the structure of the data by allowing for some clustering of individual children, I searched for some Christian names (e.g. Agnes, Rachel, Francis and Frances) and for some surnames (e.g. surnames beginning with Ve), and downloaded the resulting datasets. To generate figures for the mortality rates and numbers in this review, I searched for particular year, age, disease, and outcome combinations, and noted the numbers of records returned by the searches to use as denominators and numerators for my calculations. I also searched for interesting records by selecting ‘absconded’ under outcome, lengths of stay of over a year, and other extreme results.
The database can yield gems of poignant information about individual children, such as the nine-year-old Edward Mason of Soho, first admitted in the spring of 1885 with enteric catarrh and tuberculosis, leaving (pronounced cured) after nearly three months in first Great Ormond Street then Cromwell House. Early the following year he returned, suffering from bronchitis and bronchopneumonia, to stay another three months between the two hospitals. He was admitted yet again in the spring of 1887, with heart disease and phthisis (pulmonary tuberculosis). It clear that after two months confined in Great Ormond Street for the third year in a row, and facing the prospect of another month or so in Cromwell House, the 11-year-old had had enough of institutions, and despite his ill-health, ran away after only two days at the convalescent home. Cases such as this – and there are many such examples of children going in and out of hospital for often quite lengthy periods – flesh out images of sickly Victorian children, dogged by chronic illness, as epitomized by Dickens’ Tiny Tim. Case study type examples on the website in the form of biographies of patients (which can be found in the library section, a rolling example also always displayed on the home page) show how individuals and their families can be traced in censuses and other sources, illustrating clearly how the admissions registers can provide additional details about children’s lives, invaluable to the family historian, genealogist or social historian wanting particular examples.

However, as well as illustrative examples, and the linking of individuals to other sources, the database can also yield more statistically robust data, such as mortality rates according to age, time period, or cause of death. For example I was able to calculate that as expected, mortality rates declined with age from 350 deaths per 1,000 admissions of infants, to 36 per 1,000 admissions of 10-year-olds (I did not perform calculations for ages above 10). Mortality also declined over time: looking just at those aged one year on admission, mortality declined from 316 per 1,000 in 1862–71 to 225 per 1,000 in 1902–11. Over half of all one-year-olds admitted with tubercular diseases died, and nearly four in ten of those in the same age group admitted with infectious fevers, but the pattern was different for older children: one in ten, or 100 per 1,000 10-year-olds admitted with tubercular disease died, but the rate was less than half that (43 per 1,000) for 10-year-olds admitted with infectious fevers. These brief calculations raise a plethora of interesting questions which could be examined using this data, such as the extent to which the changing mortality in the hospital was a reflection of the changing balance of diseases and conditions admitted, the age structure of the patients, and the virulence and treatment of different diseases. Also important is the issue of how repeated spells in hospital by the same child should be treated: many children endured repeated, non-contiguous spells in hospital, with different outcomes: if a child is ‘relieved’ or ‘not-relieved’, rather than ‘cured’, should the next spell be treated as part of the same disease episode or not? The answer might be different for different diseases: children with cleft palate and hare lip appear to have had repeated visits at which the outcome was reported to have been ‘relieved’ before a final ‘cure’ was achieved. Episodes of infectious diseases such as scarlet fever, on the other hand, were unlikely to have occurred more than once to the same child. Comparisons of length of stay could be thrown into the mix and many more questions can be asked, and the database is large and diverse enough to provide a mine of information for rigorous academic research, from the operation of and access to hospitals, in depth investigation of morbidity and mortality, and the impact of medical advances and disease environments.
Despite an attractive, easy to navigate and informative website, there are a few areas where some improvements could be made. It is a shame, for instance, that there is no scanned example page of an admission register to enable us to envisage how they looked in the originals. Dr West’s case notes are fascinating, but although numerous at over 1,300 admissions, they do not provide a representative sample of children or diseases, in terms of either the time period or age of child. In terms of time period they are restricted to the first two decades when Dr West as active in the hospital, and in terms of age, none of his case notes relate to infants, as he was opposed to the admission of under one-year-olds and his influence was such that the hospital admitted very few until his resignation in 1875. The balance could be rectified if more money were sought to scan and add case notes from other doctors (some of which clearly exist given some of the patient case histories provided), not only to provide examples from a different doctor who may have taken a different approach or specialized in different diseases, but also covered a different era and a different age range of children.

Most of the data is transcribed exactly as it appeared in the registers, including, therefore, inconsistencies and earlier transcription errors, for example between ward books and admission registers. Some of these have been ironed out by the addition of standard fields, but some remain, such as the significant number of children with unexpected forename and sex combinations (where the case notes exist these could be ironed out, but have not always been). Forenames with no clear gender assignation (such as Frances and Francis) may have been particularly prone to mistakes as there are several repeat visits by children who appear to change sex between visits, and it is not clear whether these were mistakes in the original data, or in recent transcription. In an ideal world these instances could have been flagged and corrected by recourse to other records if possible (eg census records, other admissions, case notes etc), but such an exercise can be time-consuming and expensive in return for only small increases in accuracy, and it is possible that resources for this were not available. Despite the double-checking described, moreover, some clear transcription errors have not been picked up, such as the case where the disease was transcribed into the admitting doctor field, resulting in one of the doctors in the drop-down list possessing the unusual name of ‘Psoas Abscess’.

Not all fields amenable to standardization have been standardized: admitting doctor and surname are notable omissions, for which standardization would have considerably aided searching for both groups of and individual children. Care must also be taken when using standardized and other derived fields, as there is a certain lack of completeness and consistency. The records for Cromwell House, added later, do not have the standardized fields ‘residence street’ and ‘ICD10 codes’ or the calculated field ‘length of stay’ filled in: thus searching and sorting by these fields can be misleading as not all records fulfilling the search criteria will be selected. Standardization of names, places and diseases is a painstaking and difficult task, and it is easy to make mistakes and leave inconsistencies in the standard dictionary, but these are diminished when a dictionary is created from the finished data set rather than standardization performed as the data is entered. Some of the fairly obvious inconsistencies in this data suggest that standardization occurred in the latter manner, and they also prompt worries about the possible existence of less obvious mistakes. For example, there are cases in which streets have been coded to different districts or sub-districts: e.g. the address ‘55 Lilfud Rd, Camberwell’ is coded to residence street: Lilfud Road, Registration district: ‘Camberwell’, and the practically identical address ‘55 Lilford Rd, Camberwell’ is coded to residence street: blank and registration district: ‘Outside London’. Similarly the several variations of ‘Bengworth Rd, Loughborough Junction’ (Bangworth, Bensworth, Blagworth, Bengemont, Bougworth, Bengeworth) have been variously coded to the Registration District of ‘Lambeth’, with residence street ‘Bengworth Road’, ‘Blagworth Road’ or blank, or Registration district ‘St Saviours Southwark’ and residence street blank. Similarly, the ‘major standardization effort’ applied to diseases, has not resulted in an entirely standard classification: for example, a search for ‘infantile paralysis’ under disease, returns 549 records, while as search for ‘paralysis infantile’ returns an entirely different 109 records.
A brief definition of disease groups is provided in the help/diseases section, but these categories are fairly broad and each contains many individual diseases: it would also be beneficial for non-specialists in the history of infant diseases to have had a glossary of more specific illnesses.

Where a child has been referred from GOSH to the convalescent home of Cromwell House, a linked field is shown, enabling continuous stays in the related institutions to be easily viewed. However the claim that therefore ‘a user can view all records related to a child’s admission to the whole institution, following its progress from hospital to convalescent home, and sometimes back again’ (general help page), is misleading, as non-contiguous return visits by the same child have not been linked, but this information is only tucked away on the ‘hospital records help’ page. It is important to remember, therefore, that these are different admissions, not necessarily different children, or even different disease episodes, and therefore do not provide the whole story about each child. While it is possible to extract and link the data relating to different admissions by the same children oneself, it is perhaps one aspect of data enhancement which would have added considerable value to the data set, enabling not only the ability to follow a more complete and longer trajectory of a child’s illness or illnesses, but also a considerably more nuanced view of morbidity, case fatality and treatment procedures.

Finally, I found the restriction to 200 downloadable records frustrating, as it was frequently fewer than those found by my search criteria. Ingenuity in searching can enable the extraction of contiguous datasets which can be added together (for example by limiting the searches to a small number of years, children whose surnames begin with a particular letter etc, and repeating the searches by varying forename, surname or year) but this can be time consuming and cumbersome, and those who wish to do analysis on relatively large datasets might be best applying to the project managers for less restricted access to the data.

Most of these minor criticisms can be easily rectified with a little attention, such as an image of an admission register, tidying up the dictionaries, and extending calculated fields to the Cromwell House admissions. Others – such as adding more case notes from other doctors, linking individual children, would require more time and money, but would be well worth doing if resources allowed. Nevertheless, this is an excellent website, providing general access to a database which would be otherwise neither easily accessible and nor searchable, and which has been considerably and thoughtfully enhanced by additional fields and explanations. The detail and flexibility in searching, together with the contextual information and support, make it enjoyable to use and render it accessible and attractive to a wide range of users, from family historians to a variety of academics.

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