Information technology

G255 HEART THROUGH THE BINOCULARS: A MODEL FOR TELEMEDICINE PAEDIATRIC CARDIOLOGY ASSESSMENT

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Background: 15 centres in the UK provide specialist paediatric cardiology services for one in 145 babies born with congenital heart disease.
Aim: We evaluated our model of a telemedicine paediatric cardiology clinic for children with suspected heart disease.
Method: A 1-year (2007) retrospective review of 56 cases seen by a paediatrician with special expertise in paediatric cardiology (PsePC) in a district general hospital who carried out echocardiography (ECHO) using a high-quality telemedicine link. After ratification by the ethics committee we carried out an anonymised 11-point single-blinded parental satisfaction questionnaire on a scale of 1 (very satisfied/very clear) to 4 (not at all).
Results: 49 of 56 cases were new referrals and seven of 56 were telemedicine follow-up with a bimodal peak in the age distribution at 1–6 months (25%) and 1–5 years (34%). These were referred by consultant paediatrician (25 (41%)), GP (12 (20%)), paediatric ward (eight (13%)), postnatal ward (five (8%)), community paediatrics (three (5%)) and NICU (two (3%)). 32 (57%) cases had normal ECHOs, including all 15 (27%) cases referred as innocent murmurs. 24 (43%) had abnormal ECHOs of whom 22 had acyanotic congenital heart disease. 51 (91%) of cases could be locally managed with 32 (57%) immediately discharged and five (9%) being referred to the tertiary cardiac centre. The service was rated overall satisfactory by more than 90% of the 27 (48.6%) parents who returned the questionnaire. 70% also highly rated the clinic for being convenient to attend locally, easy to view the television pictures, talk very well, ask all their questions and get appropriate answers. A further 75% also said that they were happy not to have a face-to face talk with the cardiologist at the tertiary centre.
Conclusions: 91% of the cases referred in our clinic could be managed locally. In addition to providing immediate reassurance for the children with structurally normal hearts, an appropriately trained PsePC can also make significant clinical decisions in those with abnormal hearts with live telemedicine assistance. Telemedicine cardiology significantly limits referrals to the tertiary centre and is rated highly satisfactory by the majority of the parents. Thus, this model provides quality assurance in addition to optimising the economics of service provision. We recommend further exploration of the role of paediatric cardiology networks of individual hospitals directly linked to a tertiary centre or indirectly via the creation of subregional centres for telemedicine cardiology in their vicinity.

G256 AUDIT AND REVIEW OF THE CURRENT USE AND PRESENTATION OF THE PAEDIATRIC PATIENT INFORMATION LEAFLETS AT A TERTIARY PAEDIATRIC HOSPITAL IN THE UK

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Introduction: Paediatric patient information leaflets (PILs) are an important tool for parents to obtain advice on their child's illness. The aim of this audit was to evaluate current use of PILs in terms of their availability and content as assessed by hospital staff and patients.
Methods: The audit consisted of two separate surveys.

1. An electronic questionnaire survey was conducted in November 2006. 100 paediatric health professionals (doctors, specialist nurses and allied health professionals) were identified in a tertiary paediatric hospital. The main focus of the survey was leaflet content and accessibility, with the opportunity for comments and suggestions for improvement. A further, qualitative observational study of staff using PILs in their daily duties was undertaken.
2. Parents (21) of paediatric patients completed a paper questionnaire.

Results:

1. The response rate was 59%. 93% of survey respondents had used hospital PILs. The majority (56%) referred to PILs less than five times a month. PILs were mostly obtained from available printed copies on the ward. 67% rated the last leaflet handed out positively for ease of access. The most common PILs used were asthma and bronchiolitis, head injury, febrile convulsions and nut allergy. Other methods respondents adopted to supply patients with information were support group/specialist nurse referrals (75%) and website/book recommendations (66%). 39% felt that additional PILs were required. The topic suggestions included urinary tract infection, Henoch–Schoenlein purpura, gastroenteritis and breath-holding attacks. Interestingly, one of these PILs (gastroenteritis) already existed on the hospital Intranet.
2. The parental survey showed 86% of parents had never been given a PIL. More than half of parents (67%) sought no resources to learn about their child's illness, thus relying on the health professionals' explanation. On being given a sample leaflet to read during the survey, none rated the PILs negatively for readability and relevance (29%, excellent; 55%, good; 16%, average).

Conclusions: The study demonstrated that the hospital PILs are found useful by patients' parents but are not being used to the fullest extent by staff. The paediatric health professionals should make more effort to use this important resource, and the availability and accessibility of the leaflets should be expanded in order to maximise the benefits.

G257 PAEDIATRIC CLINICAL GUIDELINES: AN AUDIT OF THEIR USE AND USABILITY IN A TERTIARY PAEDIATRIC HOSPITAL IN THE UK

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Introduction: Paediatric clinical guidelines are widely used in hospital to help health professionals in their work. The aim of this audit was to evaluate the current use of tertiary paediatric hospital clinical guidelines and identify strengths and weaknesses in their availability and content.
Methods: An electronic questionnaire survey was conducted in November 2006 of 100 paediatric health professionals (doctors, specialist nurses and allied health professionals) identified in a tertiary paediatric hospital. The main focus of the survey was readability of guidelines, relevance and ease of access, with the opportunity for comments and suggestions for improvement. In addition, a qualitative observational study of staff using the guidelines in their daily duties was undertaken.
Results: The response rate was 59%. The clinical guidelines were used by 90% of survey respondents. 49% of respondents who referred to the guidelines did so less than five times a month. However, 59% of specialist registrars referring to the guidelines were found to be using them 5–10 times a month. The guidelines were mainly accessed via the Intranet (89%). The hospital guidelines that were in greatest demand were haematology-related (sickle cell and blood transfusion guidance), respiratory-related (asthma and bronchiolitis), the diabetic guideline and antibiotic prescriptions. The last accessed hospital guideline was rated positively for the relevance of information (77%), ease of access (66%) and readability (87%). It was seen

that the National Institute of Clinical Excellence guidelines were accessed the most after hospital paediatric guidelines (66% of all respondents). 41% felt that there were paediatric clinical conditions that required guidelines to be written and the most common topics suggested were haematology-related, eg, petechial rash management, coagulopathies and renal drug dosing.
Conclusions: The study demonstrated that hospital paediatric guidelines were considered a valuable information source, primarily by doctors. However, shortcomings to the Intranet and paper-based guidelines system were found. Recommendations include availability of the guidelines as handbooks in printed and electronic format, a specific search engine on guidelines web-pages, a shortcut icon on hospital computers, succinct guidelines with flowcharts and a multidisciplinary liaison on guideline contents.

G258 PHARMACEUTICAL PRODUCTS AVAILABLE ON THE INTERNET (EBAY) FOR THE TREATMENT OF GASTROENTEROLOGICAL DISORDERS

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Introduction: Internet shopping is increasingly common. We evaluated the sale of medicines used for gut symptoms on a popular auction site ''eBay'' with particular relevance to paediatric practice.
Method: We searched for medications (eg, lactulose, senna, prednisolone) and treatments for common gastrointestinal (GI) conditions (eg, constipation, diarrhoea, colic, pain). Information was extracted from the adverts regarding description, price, postal address, indications, side-effects and age recommendations.
Results: We identified 186 products being sold as medicines (includes 15 endoscopes). 70% of products were sold from the UK, 24.7% from the USA and 3.4% from Asia (European Union—none). 98% of the medications on sale are available over the counter in the UK. 44% of the medications were complementary and alternative treatments (the majority being homeopathic and herbal). The three commonest GI conditions with available treatments include constipation, diarrhoea and infant colic. Common available treatments include Senna, colic relief (Infacol, Dentonox and Colief), Buscopan and specialised milks (Nutramigen and Neocate). 53% of medications were recommended for children. Ingredients were mentioned on 70.5%, and indications in 86.2% of the drugs. Inappropriate indications were mentioned for 15% of the medications, which included recommending Senna that was described as a slimming pill by one vendor. Side-effects were mentioned in only 7%. The expiry date was mentioned in two. 35.8% of the vendors were chemists. One vendor was selling a bottle of Infacol with the seal already broken (slightly used). Although it is possible to email the seller via eBay (anonymously), 42% of the sellers had no address or contact details listed.
Conclusions: Medications can be purchased on the internet, but little information is available regarding these sales. There is a concern regarding individual vendors possibly selling unused medications prescribed to or bought by them. There were isolated incidences of dangerous practice, eg, Senna being sold as a slimming pill, or medicines being sold already opened. Although 98% medicines sold on eBay are sold over the counter, inappropriate/inadequate information regarding these is a concern.

G259 ELECTRONIC AID TO RATIONAL ANTIBIOTIC PRESCRIPTION AND IMPLEMENTATION OF LOCAL ANTIMICROBIAL POLICIES

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Antimicrobial resistance has become a global public health problem. The overuse (or misuse) of antimicrobials resulting partly from poor prescribing behaviour, is the single most important determinant of resistance. As a result of ongoing concern regarding rates of resistance to antimicrobials and inappropriate prescribing, the UK Department of Health (DH) in 2003 allocated £12 million to be spent over 3 years on developing the role of pharmacists to take a lead in the promotion of rational antibiotic prescribing. Because the treatment of acute infections often requires administration of medications on an empirical basis, implementation of standard treatment guidelines and essential drug lists are powerful mechanisms to improve prescription practices.
Aims: To design an easy-to-use, user-friendly desktop Windows application for general practitioners and hospital doctors (and other prescribing professionals) to act as a quick reference for the implementation of the local antibiotic guidelines and essential drug lists.
Methods: The designed software is based on Windows Microsoft Access, which is widely available in most hospitals. It is intuitively easy to use and requires no advanced computer skills.
Results: The software provides dosage recommendations for patients of different age groups based on the British National Formulary. It aids selection of appropriate antibiotics based on agreed priority criteria and prescribing using correct dosage and route of administration for selected common disease conditions. It minimises prescribing errors by aiding in calculation of the correct antimicrobial dosage based on the given patient's weight. It enables different categories of prescribers to easily implement the local antibiotic guidelines and policies based on peculiar epidemiological characteristics and identified resistance patterns.
Conclusions: We have designed an easy to use simple electronic assistant that offers guidance on choice and priority of antibiotics to be prescribed in the empiric management of selected disease conditions within the context of a local antimicrobial prescribing policy.

G260 ELECTRONIC AID TO DIAGNOSIS AND MANAGEMENT OF CHILDHOOD URINARY TRACT INFECTIONS: BASED ON CURRENT UK NATIONAL INSTITUTE FOR HEALTH AND CLINICAL EXCELLENCE GUIDELINE

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The National Institute for Health and Clinical Excellence (NICE) has recently published a clinical guideline on the diagnosis, treatment and long-term management of urinary tract infection (UTI) in children. The UTI is a relatively common site of infection in infants and young children. UTIs in children are important because they cause acute morbidity and may result in long-term medical problems, including hypertension and reduced renal function. The full NICE guideline for the management of children with suspected UTI is a 178-page documentation.
Aims: The aim of the NICE guideline is to lead to more consistent clinical practice of accurate diagnosis and effectiveness of subsequent investigations and treatment (including surgical intervention) and follow-up. We aimed to design an easy to use, user-friendly desktop Windows application for the general practitioners (GP) and paediatricians based on the NICE guideline as a quick reference for the management of children with suspected UTI.
Methods: The software is based on Windows Microsoft Access, which is widely available in most hospitals. It is intuitively easy to use and requires no advanced computer skills.
Results: The software provides an easy navigation system based on the main headings of the NICE guideline: history, urine sample collection and testing, treatment, investigations and information for patients/carers. It aids selection of appropriate radiological investigation depending on the clinical status and age category of the patient. It offers guidance on choice of antibiotics and duration of treatment, requirement for specialist follow-up and information to be given to patients and their carers. It provides the option of

automatically generating a letter to the GP and carers based on entered clinical information.
Conclusions: We have designed an easy to use simple electronic assistant with an intuitively easy to use interface based on current guidelines of NICE (UK) on the diagnosis, treatment and long-term management of UTI in children. This software has been found useful by GPs and hospital doctors caring for children suspected of presenting with UTI.

G261 DESIGN OF AN IMPROVED WINDOW-BASED ELECTRONIC ATTENDANCE REGISTRATION AND CONTINUOUS PROFESSIONAL DEVELOPMENT MONITORING SYSTEM FOR HOSPITAL TRAINEES

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Each trainee must commit to lifelong learning and continuing education in order to be able to provide the best care to patients and document evidence for professional development. Tracking attendance at teaching and other departmental meetings in a busy hospital is highly desirable but can be time-consuming and very costly when implemented with a commercial software product. Introduction of an electronic attendance registration system is one of the strategies recognised for improving attendance at hospital grand rounds.
Aims: It was generally observed that the regular recording of attendance at the hospital grand rounds and other academic conferences was deficient. The register was often misplaced and sometimes not available during the meeting, and attendance had to be recorded on a temporary register, which is often misplaced and not eventually updated in the original register. We therefore aimed to develop a more easy to use and effective system based on MS Access. It is kept very simple and user-friendly so that it can be used by every health personnel with minimal previous skills or knowledge of computers.
Methods: We have developed an effective Window-based system that provides a permanent record of attendance for each trainee and other healthcare professionals at various academic sessions organised by the hospital. It is an updated revision of a previous web-based attendance system and maintains an updated record of the employees' continuous professional development.
Results: It provides an option for sending an e-mail reminder to all employees on the database about a specific meeting. It is also able to generate a statistical overview of attendance at all the different types of meetings held in the department. It may produce a printable record of attendance for each employee as a documentary evidence for continuous professional development. It provides login access for privileged users and administrators to password protected areas on the database.
Conclusions: We have found the system to be extremely easy to use, preferred to a similar web-based system, user-friendly and executed with minimal cost to the hospital.

G262 USE OF AN INNOVATIVE COMPUTERISED SCHEDULING SYSTEM TO STREAMLINE THE MRCPCH CLINICAL OBJECTIVE STRUCTURED CLINICAL EXAMINATION CIRCUIT

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Background: The new model of the MRCPCH clinical examination was introduced in 2004. This involves an Objective Structured Clinical Examination (OSCE) incorporating 10 stations of varying duration in the circuit. Audible alerts have to be given at specified intervals so as to warn candidates a few minutes before a station is due to end, as well as at the end of the station. Currently this is done manually with a dedicated helper using a stopwatch and bell. This is time and labour intensive and is prone to errors. An electronic timing system has been recommended as an alternative.[1]
Aim: To design, implement and evaluate a computerised timing program for the MRCPCH clinical OSCE circuit.
Methods: The official circuit for the examination was analysed for the following variables: duration of each station, timing of the audible alerts and gap between each station. A computer-generated programme that gives instructions in a human voice was designed incorporating the above variables. This was configured to run seamlessly for the duration of the whole examination and to give out alerts at appropriate timings that could then be amplified using a loudspeaker. The program was piloted before the examination and any glitches were ironed out. Permission was obtained from the examination co-ordinator. The final version was then used in the MRCPCH clinical examination held at a district hospital in June 2007 and June 2008. Written feedback was obtained from examiners, candidates and helpers.
Results: The program enabled smooth running of the circuit without any errors. The senior examination co-ordinators felt that the system was efficient and practical. Analysis of written feedback revealed that 100% of the examiners found the electronic scheduler helpful and innovative. All of them graded it higher than the bell and clock system. Similar positive feedback was obtained from candidates and helpers. No negative feedback was received.
Conclusions: The computerised scheduler is a practical, feasible and more efficient alternative to the traditional "stopwatch and bell" system for running the MRCPCH clinical examination circuit.

1. **Boursicot K,** Roberts T. How to set up an OSCE. *Clin Teacher* 2005;**2**:16–20.

G263 PLANNING AND DELIVERING HEALTH AND SOCIAL CARE ACROSS BOUNDARIES

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Introduction: Healthcare provision has become increasingly complex as new treatments evolve and children with long-term conditions, special needs or at risk of abuse or neglect survive throughout childhood and into adult life. The role of healthcare is to arrange interventions that improve the future of the patient. Care is often not delivered as intended, errors are commonplace and patients are put at risk resulting in reduced benefit from interventions, unnecessary hospital admission, morbidity and avoidable deaths.
Aim: This project aimed to identify and define the process of medical and professional care so that a common understanding can inform a standard for record keeping capable of delivering the care that children need, as intended by their health professionals and multidisciplinary teams.
Methods: Clinical practice was observed in primary and secondary care in a variety of settings, through: direct observation of professionals at work, singly or in multidisciplinary teams; study of records; correspondence and interviews with health professionals and others; and review of the literature.
Results: Repeated cycles of care were identified and could be subdivided into three classical components: assessment, planning and implementation. Assessment was initiated following a new presentation with a new problem or as part of a planned or emergency follow-up of an existing problem. It included history, examination, specific assessments, observations, review of old records, correspondence and previous plans. From this a summary was sometimes made and the problems, needs and risks defined. Planning required the identification of aims or goals, ideally agreed with the patient or carers for each problem or need. This sometimes included contingency plans for identified risks. Plans included monitoring and reassessment. Finally, the implementation phase represented the actions arising from the plan that held the potential to alter the future of the patient.

Conclusions: Many of the safety issues described by the National Patient Safety Agency or in confidential enquiries and child protection reviews can be attributed to lack of understanding or failure of implementation of this process and subsequent failure to share or transfer responsibility for implementation of the plan thus failing to deliver the intended care or safeguards. In particular, failure to include contingency plans in response to risks was identified.

G264 OVER A DECADE EXPERIENCE OF BENEFITING FROM HOSPITAL INFORMATION SUPPORT SYSTEM AND ELECTRONIC PATIENT RECORD

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History and introduction: In 1989, our hospital became a Resource Management (RM) site—a national initiative giving the hospital an opportunity to radically improve its operational efficiency through the implementation of a Hospital Information Support System (HISS). In 1991, Admissions, Discharges and Transfers (ADT), Laboratory, Radiology and Patient Care Inquiry (PCI) were introduced. In 1993, Care Planning and Order Entry were added. In 1994, our hospital was one of two nationally funded pilot sites for an electronic patient record (EPR) and in 1996 electronic prescribing (EP) was rolled out.
Components of induction training: PCI includes access to the individual record, ie, current medication chart, ordering investigations, viewing results, discharge letters, appointments, patient notes (multidisciplinary) and operation notes, etc. Other components are Theatre Management, Emergency Department tracker, Magic Office, scheduling clinic lists and Nursing module–Liverpool Care Pathway (LCP).
Training duration: The main induction is 3 h 30 min; thereafter, follow-up training is arranged as necessary or if required or requested.
Frequency of training (2006): Annual intake × 1 group, out of phase doctors × 13 groups, locum doctors – adhoc.
Feedback: This is generally positive especially as trainees are increasingly computer literate. Types of problems faced by doctors include frequent change of practice. There is, however, a steep learning curve due to the clinical-rich system. Occasionally, some trainees feel that insufficient training time is allowed for the quantity of subject matter to be covered.
Benefits: Accessibility and integration, legibility, timeliness, ability to implement medicines management, eg, decision support, distance prescribing, audit, up to date protocols and guidelines readily available online.
Conclusions: We have a fully comprehensive HISS/EPR system that is utilised by all staff working at our hospital. The system is intuitive and flexible with immediate access to patient records at the finger tips. We would strongly recommend it to be adopted by all hospitals across the UK.

G265 THE PAINPASSPORT: A NEW COMMUNICATION TOOL FOR CHRONIC PATIENTS

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Introduction: A new communication tool for children with chronic healthcare needs is being introduced in our Trust.
Aim: To minimise the distress faced by children requiring multiple hospital admissions and procedures by improving communication between patients, parents and healthcare professionals. This should facilitate individualised care.

Abstract G265

	Yes	No	Sometimes
Routinely copy letters	10	20	
Copied letters only in special circumstances	14	16	
If copied wrote separate letter to parents	7	18	5
Awareness of advised consent	6	24	
Obtained consent in special circumstances	6		
Clinicians believed it			
Improved communication	23	4	3
Improved parental satisfaction	21	3	6
Improved compliance	15	6	9
Increased workload	14	12	4
Increased parental anxiety	14	10	6
Potential for breech of confidentiality	15	9	6

Method: We developed our Painpassport based on a tool already in use in the Netherlands. It is a colourful 28-page booklet in which children with chronic healthcare needs can document how they prefer procedures to be done. They write in their likes, dislikes and coping strategies surrounding stressful procedures. This helps healthcare professionals to tailor the care given with the intent of reducing the child's distress. The passport is owned by the child and offers room to note down personal information, preferences surrounding "needles", other procedures such as nasogastric tubes, anaesthetic and recovery. There is also room to collect stickers and bravery certificates, and a list of tips on coping. For every procedure the child can note, for example, who should be there with them and what can be done to help them cope, such as the use of cream or spray or whether they want to be told what is going on. The Painpassport confirms the commitment of professionals within the department to support children during procedures and to reduce their distress where possible. Parents are given an information leaflet on how to support their child.
Results: The Painpassport was successfully introduced and is increasingly used within our Trust. Some children also use it outside our Trust. The design (pictures, colours and text) was positively received. Patients and parents have given very positive feedback on the use of the passport. Communication between patients and professionals has improved and patients report increased confidence around procedures. These findings are also supported by the findings in the Netherlands where this tool has been used successfully for 2 years and where its effectiveness has been proven. Further improvements may be made after future audits.
Conclusions: This new tool improves patient–doctor communication, reducing distress and improving patient care.

G266 COPYING CLINICAL LETTERS TO PARENTS: CURRENT VIEWS AND PRACTICE

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Introduction: Since 2004, the Department of Health (DoH) has recommended that all patients should receive a copy of letter following attendance at outpatient clinics after obtaining consent. Previous studies have demonstrated improved parental satisfaction and compliance by following this advice.
Aims: (1) To explore current practice and influencing factors among paediatricians regarding copying outpatient clinic letters to parents, and (2) to assess awareness of DoH advice.
Methods: A questionnaire was devised assessing: the frequency of copying letters to parents, consent issues and the clinician's views on the benefits and disadvantages of copy letters. This was conducted in person among all consultants and specialist registrars

in general paediatrics and paediatric specialities in the children's hospital.

Results: 56 doctors were employed: 18 SpRs and 38 consultants. Completed questionnaires were obtained from 30 of 37 of those approached (15 SpRs and 15 consultants). Seven were unavailable due to refusal or were never completed.

73% of the SpRs were unaware of DoH guidelines and none had received any formal training on written communication with parents/patients.

Conclusions: Few paediatricians routinely copy their letters to parents despite the proven benefits and DoH advice.

G267 A MINIMAL EXPANSION OF THE HOSPITAL EPISODE STATISTICS OUTPATIENT DATA SET CAN DEMONSTRATE CASE MIX COMPLEXITY

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Aim: To show that a minimal expansion of the current Hospital Episode Statistics (HES) outpatient data set can effectively and simply demonstrate case mix complexity.

Methods: We analysed our services' activity data for a 6-month period for the following items: (a) number of referral reasons (main ones being physical, developmental, behaviour)*; (b) number of special categories indicating vulnerability (including special educational needs, looked after child, child protection plan, child in need, traveller, asylum seeker or refugee, involvement of the youth offending team*); (c) number of diagnoses coded*; (d) number of separately coded EU agreed key diagnoses (attention deficit hyperactivity disorder (ADHD) on medication, autistic spectrum disorder, epilepsy, cerebral palsy, Down syndrome, visual impairment, sensorineural hearing loss*; (e) numbers followed up (appointment/brought forward for discussion); (f) number of further referrals*. Items marked* are additional to the HES outpatient data set.

Results: Of the 3754 contacts during the 6-month period in 2007/08. (a) 712 (19%) had more than one stated referral reason. (b) 1749 (46.6%) had at least one special category. (c) 1596 (42.5%) had more than one diagnosis. (d) 764 (20.3%) had at least one key diagnosis. The commonest were autistic spectrum disorder in 242 (6.4%), ADHD on medication in 217 (5.8%) and cerebral palsy in 107 (2.8%). These are agreed markers across the EU. (e) 2526 (67.3%) were given follow-up appointments and 387 (10.3%) were listed for further discussion with the multidisciplinary team. (f) 2994 (80%) of contacts resulted in no further referrals; 642 (17%) had one, 118 (3%) had two or more (these cases were not necessarily discharged).

Conclusions: All indicators show a high level of complexity: one-fifth of cases presented with, and two-fifths were diagnosed with, multiple problems; nearly half of all cases were in a vulnerable category. The majority of this complex caseload remained under active management; other services became involved in one-fifth of cases. Most of the added data items are included in the proposed full Department of Health child health data set but this information is currently not available from PAS-derived Hospital Episode Statistics; it is easy to collect, has meaning for clinicians and is essential for commissioning and costing purposes.