Aim
To standardise the supply and monitoring of growth hormone to children across the tertiary paediatric endocrine service and ensure cost-effective prescribing of growth hormone in children.

Method
Patients identified by recorded data on the Growth Hormone Management Review Clinic, or more urgently if issues identified and raised by the patients/family to the pharmacist. The pharmacist completed registration paperwork and prescribed growth hormone 6 monthly, ensuring appropriate monitoring is conducted before prescribing. All patients transitioned to the new service recorded on Excel spreadsheet comparing monthly cost on the previous service, to monthly cost on the current service.

Results
150 patients identified on growth hormone across six health boards prescribed majority via GP with few via homecare at an approximate cost of £800,000 a year. Over 1 year now 90 patients prescribed by the pharmacist based in the paediatric endocrine team and supplied by homecare. Resulting in cost savings of £100,000 a year, an average of £1,700 per patient, with the most significant cost saving of £4,400 a year for one patient. The time taken to start a new patient on growth hormone has reduced from an average of 6 weeks to 2 weeks, due to less burden on GP and shared care agreements. Reduced burden on specialist nurses to complete paperwork, deal with queries and chase prescriptions as managed by the pharmacist. Support to consultants to ensure patients are monitored at least every 6 months as per BSPED recommendations and NICE guidance.

Conclusion
Pharmacist-led prescribing of growth hormone can reduce the burden on consultants, specialist nurses, and GP’s, and standardise the supply and support that patients and their families receive when starting growth hormone. Ensuring patients receive treatment in a timely manner and receive appropriate monitoring regardless of where they live. Supplying growth hormone via homecare is more cost-effective than supplying via primary care. Utilising a pharmacist to oversee this service, identify and approach patients and their families to transition over to the new service can achieve significant cost savings to the NHS, without adding pressure to the specialist team.

REFERENCES
asked about the problems the most common response being
supply of medicines or administration difficulties. 79% reported that parents/carers at their hospital were the
opportunity to administer medicines whilst their baby was an
inpatient.

Conclusion Preliminary results show there is room for
improvement with the information and support provided to
parents/carers. The timing that the information is provided is
key with ‘throughout the hospital stay’ being the most popular
parent/carer response however, only 24% of HCPs reported information being given throughout the hospital stay. Both groups identified some of the same challenges.

REDUCING INTERRUPTIONS DURING ADMINISTRATION
OF MEDICINES TO CHILDREN

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Aim Many studies have identified that interruptions occur fre-
quently during administration of medicines and may cause
errors.1-3 Bundles of interventions aimed at reducing interrup-
tions have been investigated in adults.4 This study aimed to
determine whether a ‘Do not interrupt’ bundle of interven-
tions on paediatric wards, would reduce the number of inter-
ruptions to medicines administration and whether this would
reduce the number of administration errors reported.

Method Six paediatric wards in a specialist children’s hospital
was included in the study. Three were designated as ‘control’
wards and 3 as ‘intervention wards’. Baseline observations
were undertaken on all 6 wards prior to the introduction of a
‘Do not interrupt’ bundle on the intervention wards. Four
weeks later observations were repeated on all 6 wards. Elec-
tronic surveys were circulated to staff before and after the
introduction of the bundle.

The ‘Do not interrupt’ bundle consisted of staff education;
information for parents/patients; red aprons; banners; posters
and ‘Distraction free zone’ floor stickers.

Results Red aprons were worn during 82% episodes of medi-
cines administration on the intervention wards compared
with 43% on the control wards. 92% of medicines were prepared
in a designated ‘distraction free zone’ on the intervention
wards.

There was at least 1 interruption during medicines adminis-
tration for 69% of patients. The number of interruptions per
100 patient episodes reduced from 157 to 135 (14%) on the
intervention wards compared to an increase from 191 to 218
(14%) on the control wards. Nurses were most often observed
to be responsible for causing interruptions (48%) compared
with other staff, parents/patients, buzzers etc. The most com-
mon types of preventable interruptions on all wards were
social conversation and missing equipment or keys. Use of
‘distraction free zones’ did not prevent interruptions.

Reported administration error incidents increased from 2 to
7 per month (350%) on the intervention wards and from 4
to 15 (375%) on the control wards. This increase corre-
sponded with an increase in activity and winter pressures
across the hospital.

15% of nurses responded to the electronic survey. 76%
thought the bundle did not make a difference, however 85%
wanted the interventions to continue. Nurses disagreed with
the finding that they were the most common cause of
interruptions.

Conclusion Use of red aprons increased following introduc-
tion of the bundle indicating it did have some effect. Over-
all, interruptions occurred more frequently than expected.
Interruptions appear to have reduced on the intervention
wards although this wasn’t significant. Nurses were the most
common cause of interruptions although they thought other
staff and parents were. Many interruptions happened when
medications were prepared near the nursing station, despite
these being ‘distraction free zones’. The bundle does not
appear to have influenced the number of administration
errors reported.

The ‘Do not interrupt’ bundle requires revision prior to
trust-wide roll out. This will include provision of more edu-
cation for staff, especially nurses, regarding interruptions; a
focus on the awareness of preventable interruptions and strat-
egies to avoid preparation of medicines at nursing stations.

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USE OF INTRATHECAL FLUORESCIN TO IDENTIFY
CEREBROSPINAL FLUID (CSF) RHINORRHEA IN
PAEDIATRICS: A CASE REPORT AND LITERATURE
REVIEW

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Early identification of CSF rhinorrhoea can reduce the risk of
meningitis and potentially decrease the length of hospital stay.
To determine the exact site of leak, intrathecal fluorescein (IF)
is frequently used as a diagnostic tool adjunct to repair sur-
gery in rhinorrhoea. Although this is generally considered safe,
there is a slight risk of seizures, radicular symptoms such as
numbness and transient paraparesis.1

Miss. AB, a 20 month old child weighing 11.6kg with his-
story of traumatic subdural collections was admitted with ep-
esodes of absence seizures, ataxia and unresponsiveness. Initial
investigations involved an electroencephalogram which
reported a normal background rhythm. A follow up MRI scan
reported no definite site of abnormal CSF leak to confirm the
working diagnosis. Hence, IF was proposed as a diagnostic
tool to identify the location of a possible leak. The pharmacist
conducted a therapeutic review with the aim of appraising
existing evidence for the use of IF in paediatrics.

A total of 12 articles were identified using Medline and
Embase. 5 case series and 1 case report were selected for
further review to determine the safety profile, optimal dose
and appropriate formulation for the diagnostic procedure.
Studies showed at lower concentrations, with doses ranging
from 25-100mg the rate of minor complications such as