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Skill mix in the aetiology pathway for children identified with permanent childhood hearing Impairment

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Introduction

The retirement, followed by unsuccessful recruitment, of a paediatrician with a special interest in audiology, forced the service to review the aetiology pathway for children diagnosed with PCHI. Without significant change the children under the care of the audiology team would no longer be able to be offered aetiological investigations in accordance with British Association of Audiovestibular Physicians guidance.

Aims

This project aimed to assess the feasibility of introducing skill mix into the aetiology pathway. Resulting in shortened wait times for families, cost savings for audiology and better use of paediatricians time.

Methods

Through a multi-disciplinary approach, quality improvement tools, including sequential PDSA cycles were used to develop the new pathway (figure 1). It was identified that the majority of the routine level 1 investigations could be requested and held in an enhanced audiology role. These investigations include: clinical history, referrals for; family audiograms, orthoptics CMV, genetics, ECG, MRI/CT, urine analysis bedside balance tests and tinnitus discussion. Where complex results were received indicating further investigation, a secure and timely referral pathway to a paediatrician or other specialist such as clinical genetics was developed.

Results

The pilot of the pathway celebrated several successes;

- a waiting list of 214 children (new and review) with the longest wait of 58 week wait was reduced to 0 weeks
- 193 children were managed by audiology with no requirement for medical input (only new cases were referred to paediatrics for a physical exam and any cases requiring level 2 investigations)
- Money was released to employ more paediatric audiologists to support general diagnostic wait times within the service.
- CMV swabbing was incorporated into the routine diagnostic follow up appointment for babies referred from the NHSP with improved notification time for positive cases.

Discussion

SPIN modules for doctors should increase the number of paediatricians trained in delivery of this specialist area of practice. However, this pilot has shown that with good links, it is possible to prevent delay in the provision of the early level 1 aetiology investigations for families by incorporating the role into the audiology service.

The last 12 months

- Electronic referrals and notifications of results have been established for most parts of the pathway
- Waiting lists have been maintained at 0-4 weeks
- All new children are now seen within recommended timeframes for aetiology

Case Study

Girl age 2.5yrs. Movement in from Spain
May 2021 Referred to audiology via ENT with known hearing loss but no hearing aids (lost in transition)
Assessed in audiology as urgent case – bilateral moderate SNHL referred for hearing aids and aetiology.
Seen for aetiology within 1 week of initial assessment no family history of hearing loss reported.
Offered referrals to community paediatrics for physical examination, family audiograms, orthoptics, CMV and genetics testing

Aetiology investigation outcomes:

Family audiograms completed 2 weeks after aetiology visit:

- Father and 2 sisters - normal hearing
- Brother age 10, behind in school, poor speech - found to have bilateral mild/ moderate SNHL which was unknown – hearing aids issued within 3 weeks and now making good progress.
- Mother - Bilateral moderate SNHL which was unknown – hearing aids issued.
- CMV negative
- Genomics – awaiting results
- Orthoptics – no concerns being monitored
- Physical exam - **August 2022** paediatrics have still not seen the family due to long waiting lists.

The new pathway facilitated timely identification and positive intervention for two additional members of this family who would otherwise have been delayed.

PDSA CYCLE 1

ACT
Routine CMV swabbing embedded into the audiology diagnostic ABR pathway. Direct access to the lab results obtained to speed up access to results.

PLAN
Temporary cover for CMV swabbing during a short term planned absence for paediatrician.

DO
Audiologists trained to consent for testing for cCMV, take saliva swab and share results as part of the diagnostic ABR assessment when PCHI is suspected.

STUDY
All babies with PCHI underwent CMV testing during the pilot. There was a slight delay between results being issued by the lab and received in audiology which was adding to the identification timeline.

PDSA CYCLE 2

ACT
Unsuccessful recruitment of a Paediatrician with a special interest in audiology led the audiology team to consider this model in the longer term.

PLAN
Short term cover for new aetiology patients during recruitment of paediatrician with special interest in audiology following a retirement.

DO
Audiologists trained by paediatrician prior to retirement and attended BAPA aetiology course to offer level 1 aetiology investigations excluding physical examination.

STUDY
Tests ordered methodically & results collated by audiology in the audiology notes. Majority of cases no abnormalities found. Clinical systems accepted referrals from audiologists.

PDSA CYCLE 3

ACT
Aetiology pathway embedded into the service. Links strengthened between audiology, paediatrics and other services. Clinical supervision routinely available.

PLAN
Service redesign to introduce skill mix into the pathway with remote support from community paediatrics as a permanent staffing solution.

DO
Development of the pathway to include review patients. Links made with paediatrics to offer physical examination and anycases where level 2+ investigations are required. Recruitment of enhanced paediatric audiologist.

STUDY
Support given from paediatrics who were happy with the pathway Support also given from other audio vestibular physicians in the region.

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