Background Info: Dublin, Ireland

- Capital & largest city in the Republic of Ireland
- Population: 550,000
- Originally a Viking settlement
- Ireland independent from the United Kingdom since 1922 after the Irish Civil War
- Member of the European Union with euro as national currency
Background Info: Temple St. Children’s Hospital

- Founded in 1872; only inner city children’s hospital in Dublin
- Secondary & tertiary referral center
- Neurology department started in 1986 by Professor Mary King
- Hospital employs 95 consultants, 950 nurses & support staff; cares for 148,000 children per year
- No private rooms, few TVs in patient rooms, no EMR (all paper charts)
- Large controversy in Ireland currently over 1.7 billion euro children’s hospital being built to open in 2023
Topic of Interest

• Topic: Varicella Zoster & Childhood Strokes

• Why this issue?
  • Vaccination practices in Ireland in relation to universal healthcare system
  • Outcomes of various vaccination practices
  • Strokes in the pediatric population
Irish Pediatric Vaccinations

- VZV vaccine efficacy: 70-90% against infection, 90-100% against moderate to severe disease
- CDC recommendation: 2 doses VZV vaccine (12-15 mths old and 4-6 yrs old)
- In Ireland, all the recommended childhood vaccines given in the school immunization programs are free – VZV is not included.
  - Flu vaccine is also not included and must be paid for out of pocket (€20)
- Parental choice to vaccinate and pay out of pocket ~€60 per dose
  - Therefore, many parents choose not to vaccinate
  - Difficult to find VZV vaccination statistics since not part of mandatory vaccine schedule
Varicella Zoster Virus & Pediatric Strokes

- Uncommon varicella complications: superinfection (with Group A strep), skin scarring, encephalitis, pneumonia, glomerulonephritis, myocarditis, hepatitis, & coagulopathy
  - More common in infants <1 yr old or persons >15 yrs old

- Inflammation in large cerebral arteries due to varicella infection -> scarring & potential **arterial ischemic stroke**
  - Highest risk for 6 months following chickenpox infection

- Recognition of stroke often delayed or missed in pediatric population
  - Not uncommon for Irish pediatric neurology service to see patients with VZV strokes

- Long-term sequelae: hemiplegia/hemiparesis, cognitive & sensory impairments, epilepsy, speech or communication disorder, visual disturbances, behavior problems
Topic of Interest - Conclusions

- “Non-essential” vaccine recommendations vary based on country
- Form of healthcare may influence national vaccine recommendations (expense vs. benefit)
- Parents should be warned about rare, but serious, consequences of vaccine-preventable diseases
Global Health Competencies

• Describe social, political, economic, & cultural factors in the health of individuals and populations living outside the United States

• Compare & contrast the health care system and services of the United States with other countries.

• Understand the pro & cons of universal health care systems around the world.
Most Profound Clinical Experience

• Neurology Radiology Conference: multi-specialty discussion of current or recent patient cases held each week at Temple Street

• Case: Pregnancy at 27 wga with fetal MRI showing increased nuchal width, clinched fists, rocker-bottom feet, decreased sulci, brain not filling skull, very thin brainstem
  • No abnormalities on chromosomal screen; high likelihood of stillbirth, early fetal demise, or profound neurological deficits

• Debate about prognosis and ethical & legal implications of various options
  • Cannot legally induce preterm in Ireland when there is potential for fetus to make it to term
  • Parents given option of going to London where fetal-cidal agents could be given legally; return to Ireland for preterm induction following medication

• Input from radiologists, neurologists, and surgeons at the attending and junior doctor level
Most Profound Cultural Experiences

- Understanding heavy Irish accents
  - “Are they speaking Irish or am I having a stroke?”

- Difference in transportation
  - Able to walk absolutely anywhere we needed to go in the city in 20-30 mins
  - No big deal for them to fly to other European countries for a weekend
  - 3 hour drives to other parts of Ireland was outrageous to them

- Some clinicians take breaks for tea in the middle of the morning – no matter how many patients are waiting!
Impact on Future Clinical Practice

• Increased knowledge on advantages & disadvantages of variety of healthcare systems & medical education systems

• Improved pediatric neurology history taking & exam skills

• Experienced new style of clinic system and value of prolonged time spent with patients & parents
References

- Temple Street Children’s Hospital: https://www.templestreet.ie/about/temple-street/
- Ireland Health Service Executive Vaccinations: https://www.hse.ie/eng/health/immunisation/
- CDC Vaccinations: https://www.hse.ie/eng/health/immunisation/
- Chickenpox Stroke Case: https://www.today.com/health/can-chickenpox-cause-stroke-why-vaccine-important-t135593