**Question 3. Monash Health Written exam 24.1 (question written and marked by Dr Michael Coman)**

An infant male is brought to your ED by ambulance following a Brief Resolved Unexplained Event (BRUE).

This question was reasonably well done overall. Candidates fell into three categories:

1. Clearly had studied the topic and answered most questions correctly
2. Didn’t know the topic well and relied on generic statements and pathological processes to various levels of success
3. Clear knowledge gap. Incorrect or incomplete answers

Total marks: 12

Range: 0-12

Median: 8

Pass mark: 8 (8= borderline, 9 = clear pass)

70% of candidates scored 8 or above

**Part a. List four (4) criteria that must be met to diagnose this event as a BRUE**

* Duration: < 1 minute
* Age: less than 12 months
* Sudden onset
* Single episode
* Complete return to baseline state
* Not explained by identifiable medical conditions/ diagnosis of exclusion
* Features: at least one of
	+ Colour change: cyanosis/pallor
	+ Breathing change: absent, decreased, irregular
	+ Tone change: hyper or hypotonia
	+ altered level of responsiveness

normal vital signs on arrival accepted.

No past history of BRUE; no intercurrent illness accepted

Some candidates mentioned return to normal anywhere between 5 – 15 minutes. I could find no evidence to support this as part of the definition – not accepted.

**Part b. list six (6) specific and contrasting differential diagnoses that should be considered when assessing this infant**

* **Gastrointestinal:** GORD
* **Infection:** sepsis, pneumonia, bronchiolitis, pertussis, meningitis, UTI
* **Neurological:** seizure, infection head injury
* **Airway:** obstruction, inhaled foreign body, laryngospasm, congenital abnormalities, infection
* **Cardiac:** arrhythmias, prolonged QT, congenital heart disease, vascular ring,
* **Surgical/Abdominal:** intussusception, strangulated hernia, testicular torsion
* **Metabolic:** hypoglycaemia, hypocalcaemia, hypokalaemia, other inborn errors of metabolism
* **Toxins/Drugs/Ingestions:** accidental or non-accidental
* **Inflicted** injury
* **Apnoea:** central or obstructive

These are the RCH differentials – I have issue with a few, for example hypokalaemia, other inborn errors of metabolism. Not given a mark as it’s hard to think of a circumstance where these conditions resolve spontaneously without treatment in 60 seconds. Definitely did not pay CAH. Hyponatremia not paid.

Febrile convulsion was problematic – can’t be diagnosed within the first 6 months by definition, which is when most patients with BRUE present. I was uncomfortable allowing this answer.

There are no concerning features found on history and examination. You believe that this is a low risk event and plan to discharge the infant home.

**Part c. List two (2) additional criteria which must be met to consider this presentation a low-risk BRUE**

* age >60 days (accept up to three months)
* born ≥32 weeks gestation and corrected gestational age ≥45 weeks
* no CPR by trained healthcare professional
* first (and single) event
* event lasted <1 minute (only if not mentioned in part a)
* no cause found; full recovery; no recurrence while in the ED; no chronic health or cardiac conditions: accepted
* no concerns for NAI accepted if not mentioned elsewhere.
* Normal vitals not accepted – implied in the stem (no concerning features on Hx and Exam)