<u>Instructions to Candidates</u> – Aim for 8 minutes

You are a Foundation doctor working in A&E.

Your next patient is Dimitri Ivanov, an 8-year-old boy brought in by mum due to having diarrhoea.

Please take a history from mum and formulate your differential diagnoses.

At 6 minutes the examiner will ask you a few questions.

Patient name: Dimitri Ivanov **Mum's name**: Carley Ivanov

Age 8

PC: Diarrhoea

HOPC: (collateral history from mum)

You have brought Dimitri in today because he has been soiling his pants for the past 5 days. He also started having new abdominal pain for the past 3 days, particularly worse when moving; the pain improves once he has opened his bowels. He has not been vomiting, but feels nauseous. His appetite is reduced, but is currently tolerating fluids. Given he enjoys fast food such as fried chicken, you ordered this yesterday to encourage him to eat.

He is otherwise well, no fever/coryzal symptoms. No urinary symptoms. No rashes.
His weight has been the same. No issues with cold/hot temperatures/rigors. No swellings noted around neck.

Only if asked, recently started on a course of antibiotics for tonsillitis.
Only if asked about bowel habits, your son has been experiencing constipation for a long time now. His normal is to open his bowels twice a week. Bowels last opened 4 days ago. He is passing flatus. This has been an ongoing problem since you have introduced solid food into his diet when he was around 8 months old. You are particularly upset because the doctors have been passing you around to different GP, A&E and found no cure or cause.

PMH:
Had lactose intolerant when younger – grew out of it.

DH: Movicol Paediatric 2 sachets/day. Completed day 5 of 7 days of Phenoxymethylpenicillin
Allergy: NKDA

FH: Nil

<u>BINDS (Paediatrics history)</u>
Birth hx – Born spontaneously via normal vaginal delivery. No issues with pregnancy/antenatal scans. Passed meconium within first 24 hours.
Immunizations – Up to date.
Nutrition – usually drinks about 2x bottles (~500mL) of water or juice making up to 1L/day in total. Introduced solid foods when around 8 months old.
Developments – no concerns.

SH (LOST): Living situation: || Occupation n/a. || Social: Smoking, Alcohol, Recreational drugs, Exercise || Travels*:*
Lives with mum and dad. No one smokes or drinks at home. No travels.

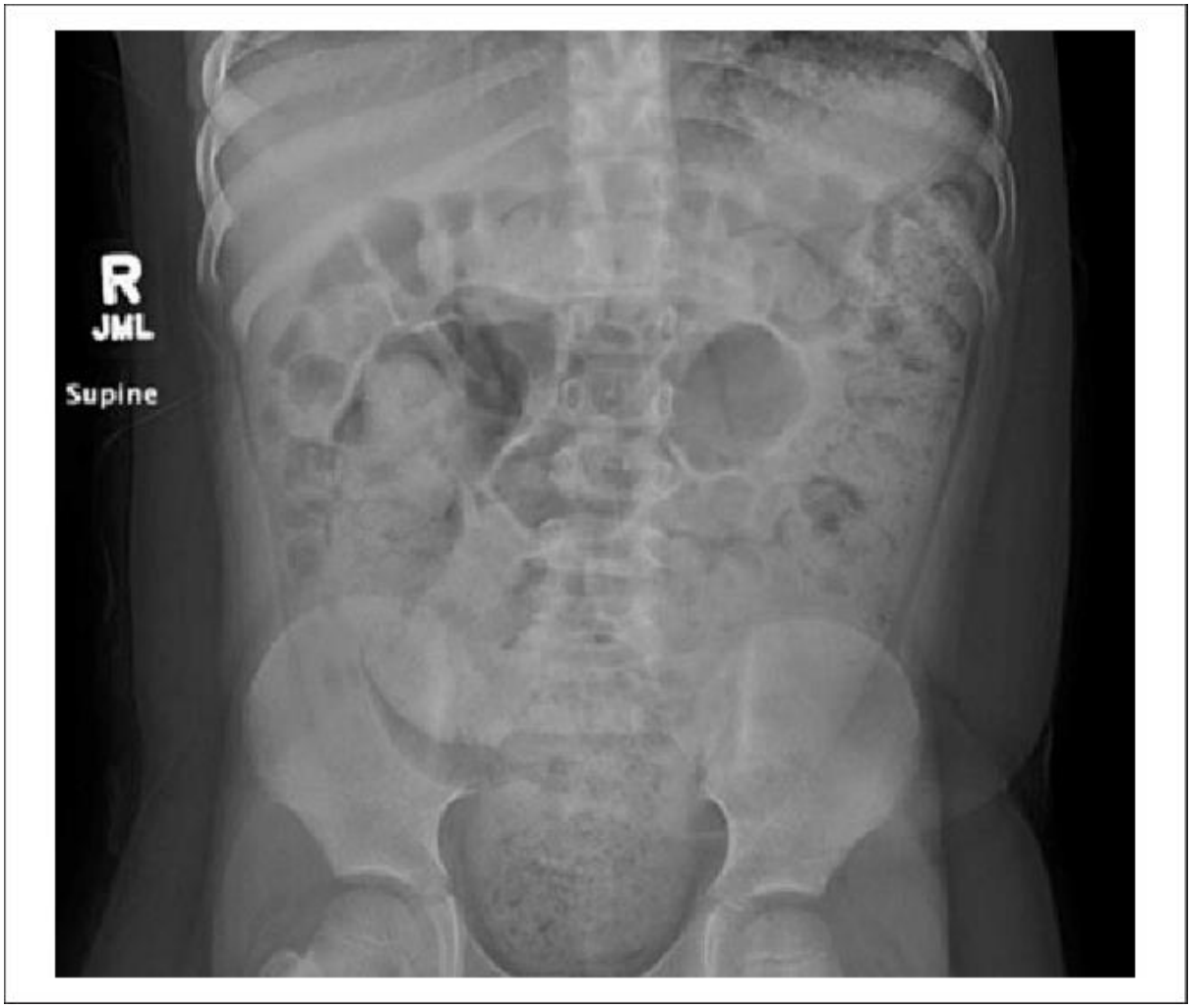
ICE
I: You think he might be having a stomach bug.
C: You are worried about him as this is also affecting his self-esteem. You are extremely frustrated with his bowel problems - you feel like you just cannot cope with this anymore.
E: You hope the doctor can find out what is going on.

Questions:

1. What are your differential diagnosis?
Overflow diarrhoea secondary to constipation, diarrhoea secondary to drug side effect (abx), gastroenteritis, hyperthyroidism, Inflammatory bowel disease, bowel obstruction, coeliac disease

2. What investigations would you like to request for this patient? And why?
Bedside urine dip (to rule out UTI), stool sample (if suspecting C.diff infection)
Bloods – FBC, CRP (infection markers), Biochem U&E, LFT (check baseline)
Imaging – AXR (look for faecal impaction)

3. Please interpret this AXR:



Although not included in this XR, ensure that candidate attempts to confirm the patient information and time of XR taken.
This is a PA, supine abdominal XR showing large amounts of faecal matter. No obstruction*, perforation (air under diaphragm) can be seen.
*small bowel obstruction: dilated small bowel loops >3cm, visible valvulae conniventes
*large bowel obstruction: dilated large bowel loops >6cm (>9cm if caecum obstructed), visible haustra
Disclaimer: photo taken from the article: Chronic Constipation and Its Complications: An Interesting Finding to an Otherwise Commonplace Problem - PubMed (nih.gov).

4. In view of the available investigations, how will you manage this patient?
Admit for oral Klean-Prep and monitor overnight. Consider laxative escalating dose regime.
May require surgical involvement for manual evacuation if oral Klean-Prep and PR enemas have failed.

Answer sheet:

Area	Clear Fail	Fail	Satisfactory	Good	Excellent
C/O & HOPC					
PMH					
DH					
BINDS + (LOST)					
FH					
ICE					
Differential dx					
Investigations					
Rapport/ Comm skill					
Overall					

Feedback

Constipation is a common complaint in Paediatrics. This is defined as having less than 3 stools per week; hard, large, 'rabbit droppings' and overflow soiling. Children can also experience pain and bleeding when defecating which worsens constipation as they are worried about feeling pain when opening their bowels hence 'holding it in'.

Other differentials and investigations to consider includes:

- **Cow's milk protein allergy** – bottle fed or breast fed with cow's milk in mum's diet, reduced feed, reduced growth, rash, reflux, abdominal pain, diarrhoea/constipation.
- **Coeliac disease** – reflux, abdominal pain, constipation, weight loss, bloating.
- **Hypothyroidism** – cold intolerance, dry skin/hair, weight gain, constipation, menstrual irregularities.
- **Hirschsprung's disease** – delayed passing meconium >48 hours, bowel issues since birth, abdominal distension, vomiting.
- **Anal anatomical abnormality** – position of anus, anal stenosis (ribbon stool pattern).
- **Neurological abnormality** – weakness in legs, motor delay.

Management for constipation are:

Conservative

- Diet (encourage fluid intake, high fibre diet)
- Scheduled toileting
- Bowel habit diary
- Reward system

Medical

- maintenance laxative treatment +/- escalating regime, Klean-Prep (Polyethylene glycol), enema/suppository PR (avoid rectal route where possible)

Laxatives types:

a) **Osmotic** – Lactulose, Macrogol (Movicol Paediatric Plain / Polyethylene glycol 3350 plus electrolytes).

b) **Stimulant** – Senna, Docusate (stimulant and softener), Bisacodyl, Sodium Picosulfate, Klean-Prep.

Surgical

- Manual evacuation under general anaesthesia.

If laxatives are prescribed to treat, differentiating overflowing and actual diarrhoea is important. This can be differentiated by history and clinical examination for palpable faecal mass.

References:

https://cks.nice.org.uk/topics/constipation-in-children/diagnosis/diagnosis/