

Cabrini Practice OSCE 2

Candidate Instructions:

You are a consultant in charge of a major rural hospital Emergency Department. You are meeting with your junior registrar who has questions about a case from a previous shift. They have asked for your help with interpretation of the Venous Blood Gas.

The VBG was taken on arrival from a 2 year old boy who accidentally swallowed his grandmother's Ferrogradumet tablets.

He was found to have Fe toxicity and had urgent treatment prior to transfer via the Retrieval Service to the Tertiary Centre Hospital 2 hours helicopter flight away.

Your tasks are to:

- **Interpret the VBG with the junior doctor (role player)**
- **Answer the junior doctor's questions**

This OSCE will assess the following domains:

- **Teaching and Scholarship – 40%**
- **Medical Expertise – investigation interpretation 20%**
- **Medical Expertise – management 40%**

OSCE 2 VBG (PROP)

VBG

		Reference range
pH	7.15	(7.35 – 7.45)
pO₂	52	(80 – 100)
pCO₂	20	(35 – 45)
Bicarb	8	(22 – 27)
Lactate	4.1	(< 2.0)
BSL	13.6	(5.5 – 8.0)
Na⁺	132	135 – 145)
K⁺	6.5	(3.5 – 4.5)
Cl⁻	97	(90-110)

Examiner Instructions:

Case Information:

The candidate is a consultant in charge of a major rural hospital Emergency Department. They have met with a junior registrar who has questions about a case from a previous shift. They have asked for help with the VBG interpretation and how it related to the case management.

The VBG was taken on arrival from a 2 year old boy who accidentally swallowed his grandmother's Ferrogradumet tablets.

He was found to have Fe toxicity and had urgent treatment prior to transfer via the Retrieval Service to the Tertiary Centre Hospital 2 hours helicopter flight away.

Their tasks are to:

- Interpret the VBG with the junior doctor (role player)
- Answer the junior doctor's questions.

This OSCE will assess the following domains:

- Teaching and Scholarship – 40%
- Medical Expertise – investigation 20%
- Medical Expertise – management 40%

Role Player Instructions

Your name is Alex and you are a Junior Registrar – you have just passed your primary examinations.

You have no experience in interpreting a VBG.

You can respond with 'yes' when asked if you understand any explanations.

OPENING STATEMENT:

“Could you please help me to interpret this VBG”

AT 3 MINUTES:

“How should this patient be managed?”

(prompt if silent) *“How does iron toxicity affect the body?”*

AT 5 MINUTES:

“What needs to be done to get the patient ready for transfer with the retrieval service?”

Examiner Marking Sheet

COMPONENT ASSESSMENT

For each Domain below, select the ONE best option that best represents the candidate's level of performance. The option "**minimum level of competency displayed**" represents the level of safe independent practice as a junior FACEM in Australasia



Please rate ALL of the following domains:

Medical Expertise – Ix interpretation	☐	☐	☐	☐	☐	☐	☐
Medical Expertise – Management	☐	☐	☐	☐	☐	☐	☐
Scholarship and Teaching	☐	☐	☐	☐	☐	☐	☐

[Detailed assessment criteria](#)

Medical Expertise: Investigation Interpretation – VBG (20%)

- **Acidemia with low bicarbonate = metabolic acidosis**
- **RAGMA (132 -8 -97 = 27) with delta ratio $[27-12]/[24-8] = 15/16 \approx 1$ (isolated RAGMA)**
- **Appropriate respiratory compensation: $8 + [1.5 \times \text{bicarb of } 8] = 20$**
- Hyperkalaemia: adjust for pH – expect K will normalise as pH responds to treatment
- Hyperlactataemia secondary to shock (hypovolaemia, GI haemorrhage)
- Mildly deranged glucose – secondary to Fe toxicity without being a marker for severity of toxicity/illness
- **VBG in context indicates/confirms life threatening Fe toxicity**

Medical Expertise: Management (40%)

- **Resuscitation with N/S bolus 20mls/kg, resusc room, cardioresp monitoring, management of airway/breathing/circ**
- Xray to confirm ingestion and assist with how many tablets ingested
- **Early referral to Toxicologist** and discuss tx options including desferrioxamine 15mg/kg (side effect: hypotension)
- Referral for urgent endoscopy + discuss timing of WBI with Toxicologist + retrieval and receiving teams
- Measure 4 hour peak serum Fe level ($>90\mu\text{mol/L}$ is a toxic range), ongoing mx acidosis and shock
- Testing for concurrent toxicities eg paracetamol level, ECG
- Disposition to PICU: involving Retrieval Services, receiving Paediatric Team, ongoing Toxicologist input
- Other: Social Work contact and support for family, reporting to DOH poison injury of a child

Medical Expertise: Retrieval

- **Liaison with retrieval services & tertiary centre specialist team**
- Liaise with family and involve SW for support
- **Complete all documentation clearly and ensure it is up-to-date**
- Definitive airway secured for travel if any airway risk
 - ETT check of position (CXR)

- Tube secured
- Airway equipment in case of accidental extubation
- **All lines secured**
- **Monitoring appropriate**
- Optimizing temperature control important, especially for a paediatric patient
- Analgesia and Anti-emetic care

Scholarship and Teaching (40%)

- Checks for level of prior knowledge/understanding
- Demonstrates a structured approach to the topic
- Demonstrates well-paced communication and covers the topic in appropriate detail
- Checks understanding in the learner regularly and at conclusion.

Station Summary: Teaching resident VBG interpretation and management of Fe Toxicity

EXAMINER NOTES (For examiner reference only)

OSCE 'incident reporting' notes: Please provide details if an issue occurs which may influence the candidate's exam outcome e.g. protocol breach, candidate illness, etc.

GLOBAL RATING FOR STANDARD SETTING:

This scale is used in the standard setting process for the OSCE. Please rate the candidate's OVERALL performance in this OSCE. The rating should take into account the entirety of the OSCE, rather than just a sum average of the individual domain scores. This element MUST be completed for the standard of the examination to be set.

	Well Below Standard	Below Standard	Just at Standard	Above Standard	Well Above Standard
In terms of a safely practicing junior emergency physician , select the ONE option that best reflects the candidate's performance in this station:	☐	☐	☐	☐	☐

EXAMINER SIGNATURE:

