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Applies to	National		
Version	**Approval authority**	**Effective from**	**'Review by' date**
2	National Medical Director, WA	2/02/2024	2/02/2027

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1. Rationale

The purpose of this Clinical Protocol is to provide a guiding framework for the in-home management of Hyperemesis gravidarum (HG).

2. Scope

The Clinical Protocol applies to Nationally for HATH clients treated for hyperemesis gravidarum. Clients will only be accepted in there is a clearly described rapid access pathway back to specialist care should the client deteriorate or not respond to the treatment plan.

There will be some flexibility in the medical management if medical governance is held by tertiary hospital medical specialists

3. Acceptance to HATH criteria and pathway

RED Unacceptable for community admission to HATH May become suitable for HATH after ED or inpatient stabilisation.	• Co-existing significant medical conditions requiring tertiary hospital admission • Evidence of hypovolaemic shock • Evidence of life-threatening electrolyte imbalance • Acute disorders of pregnancy requiring specialist care • Evidence of vitamin B deficiency/ Wernicke's encephalopathy, including confusion, ataxia, eye movement disorders • Pregnancy beyond 20 weeks gestation.
ORANGE Requires discussion with Medical Governance prior to acceptance.	• Significant chronic diseases that may be impacted by hyperemesis eg chronic kidney disease, diabetes mellitus, eating disorders or other significant mental health disorder/medications (eg lithium) • If bed bound with hyperemesis, consider and discuss the need for thromboprophylaxis with low molecular weight heparin • Use of ondansetron in first trimester needs to be signed off by Medical Governor due to conflicting evidence regarding safety: a small increase in cardiovascular malformations and clefts has been reported. It has also been associated with fatal tachyarrhythmias. It is expected that the prescribing MO has discussed the potential risks and costs of ondansetron with the client
GREEN Accepted for HATH .	• Confirmed diagnosis of hyperemesis gravidarum with clearly agreed escalation pathway back to referring medical governor to avoid the need for ED should deterioration/lack of improvement occur

4. Pathology work up

- Baseline urea and electrolytes (U & E's), full blood picture (FBP) and magnesium (Mg).
- Mid-Stream Urine (MSU) for Microscopy, Culture and Sensitivity (M C and S) if urinalysis is positive for leucocytes/nitrites, and there is no evidence of recent MSU in the previous 72 hours.
- Daily urinalysis for Specific Gravity (SG) and ketones.
- There is no evidence to support routine ECG prior to use of ondansetron
- Day 3 (and every 3rd day thereafter) blood tests for urea and electrolytes, full blood picture and magnesium or as directed by medical governor

5. General management

- Women who report NVP should be assessed using the PUQE assessment tool, along with regular measurement of weight, hydration status and other observations to determine the severity of the condition and to guide management.
- Intervention for nausea and vomiting in pregnancy is mostly supportive, using antihistamine and antiemetic medications. Ordinarily IV treatment is not indicated unless symptoms are severe or if the symptoms are not improving with oral fluids, oral antihistamines and oral antiemetics. If using medication, start with first line (see Appendix A) and work through the options if PUQE score does not improve-ensuring clients are provided education regarding the risks of the medications.
- Safety and efficacy of antiemetic medications should be discussed with women if symptoms are severe. Cochrane Review of Interventions for NVP and HG concluded that, although antiemetic medications were effective, there is insufficient high-quality evidence to support any intervention over another and there is some conflicting evidence about the safety of ondansetron.
- Ondansetron should not be considered a first line agent for the treatment of nausea and vomiting in pregnancy. An alternative medication should be used in first trimester whenever possible. Ondansetron has been associated with fatal ventricular tachyarrhythmias and should be avoided in patients with a history or risk factors for such arrhythmias
- It is important to reassure women that symptoms will subside by 20 weeks in 90% of cases
- Women admitted to hospital with hyperemesis who are bed bound for extended periods and or have additional risk factors for venous thrombosis such as a previous history of DVT, may need to be considered for thromboprophylaxis with a Low Molecular Weight Heparin (enoxaparin). This can be discontinued when the hyperemesis or immobility resolve. Discuss need for this with medical governor
- The Motherisk PUQE-24 scoring system is recommended to help determine the degree of the woman's NVP and can assist in guiding treatment recommendations although there is no clear guidance on scoring with particular approaches to therapy
  https://www.uptodate.com/contents/image?imageKey=OBGYN%2F108909&topicKey=OBGYN%2F6811&rank=1~150&source=see_link&search=embarazo%20nausea&utdPopup=true

6. Medical management/treatment plan

- Access blood results for baseline U & E's, FBP and Mg from the referral source. If unavailable organise domiciliary pathology or request client attend a pathology centre within 24 hours for baseline.
- Collaborate with governing doctor regarding any significantly abnormal pathology results.
- Initiate intravenous access and commence intravenous therapy if prescribed by medical governor

  Note: Sodium Chloride 0.9% is the fluid of choice. Hartmann's provides no advantage.
- Dextrose/glucose containing fluids are **CONTRAINDICATED** as they may precipitate encephalopathy and may also worsen hyponatraemia.
- Commence antiemetic therapy and vitamin therapy if prescribed. Refer Appendix A for medication guidance.
- Thiamine (100mg) should be given once daily, intravenously with the initial rehydration fluid (or IM), and then daily for 2-3 days for women who require intravenous rehydration and who have vomited for more than three weeks, to prevent Wernicke encephalopathy as oral thiamine is not well absorbed if nutritional status is poor.
- The **Pregnancy Unique Quantification of Emesis (PUQE)** assessment tool can guide management, in particular the withdrawal of IV fluids or oral medication as the symptoms improve.
- Iron supplementation may worsen symptoms. Discontinuing iron containing multivitamins and supplements (where appropriate) may improve hyperemesis symptoms.
- Consider co-existing constipation as a contributor to NVP and manage as required
- Women with diabetes should be monitored carefully as dehydration increases the risk of diabetic ketoacidosis
- Monitor and advise client re dietary management (refer to dietician information sheet).
- Do not underestimate the impact of HG on mental health. Monitor and advise client on psychological wellbeing and refer to other agencies if evidence of decompensating mental health.
- Monitor and advise/amend oral medications and antiemetic regime as needed according to clinical progress.
- Discharge from HATH after 24-48 hours of minimal symptoms not requiring intravenous therapy.
- If condition worsens, refer back to governing doctor.
- **Note**: Referral to an ED is not considered an acceptable escalation pathway back to tertiary care advice unless it is an emergency. Ensure there is a clear escalation pathway back to medical governance at the time of referral.

7. Monitoring

- Minimum of once daily visits.

- If IV therapy is given then a minimum of BD visits may be required which may be virtual, provided vital signs can be accurately assessed
- Nursing assessment as per Hyperemesis Gravidarum Assessment Tool.
- Intravenous therapy guided by the severity of the emesis, ketones value in urine, skin turgor, weight, vital signs and serum electrolytes.
- Day 3 (and every 3rd day thereafter) daily blood tests for urea and electrolytes, full blood picture and magnesium
- The PUQE-24 is scored over 24 hours and can provide an accurate indicator of the woman's well-being and improvement or deterioration
- In women who have had previous admissions or are not responding to treatment consider: TFT – hypo/hyperthyroid, calcium & phosphate, amylase to exclude pancreatitis, and regular electrolytes to exclude metabolic disturbances and to monitor severity

8. Medical governance

- Primary medical oversight can be held by referring medical specialists, credentialed referring GPs or by Silver Chain medical staff. The client must have access to medical governance support for 24 hours per day, 7 days per week
- When governance/oversight is retained by a Silver Chain medical officer, the client will have a medical review either via telephone or face to face within 48 hours of admission and the medical officer will determine when scheduled follow up and anticipated discharge will occur. It is expected there will be regular medical review
- Where the primary medical governor is unavailable the Silver Chain medical officer will provide the medical oversight
- Care delivery is planned and provided in consultation with the client, medical officer/specialist holding medical governance and nursing staff.
- In the instance when a client's condition deteriorates the Silver Chain medical officer or nursing staff will escalate back to the referrer. ED is not considered an appropriate escalation point unless it is an emergency

9. Discharge planning and handover

- Ensure the client has an appointment arranged with own General Practitioner (GP) prior to discharge to ensure continuity of care.
- Ensure discharge summary has highlighted the key clinical concerns/risks you wish to hand over
- Fax client discharge summary to GP

10. Supporting documents

Silverchain policy and related documents that directly relate to and inform this procedure are available with this document in the Policy Document Management System (PDMS).

Other documents that directly relate to and inform this procedure are as follows:

- Australian Commission on Safety and Quality in Health Care 2017, National Safety and Quality Health Service Standards (2nd ed), Sydney. Australia.
- SOMANZ Guideline for the management of nausea and vomiting in pregnancy: https://www.somanz.org/Index.asp
- SA Perinatal Guidelines 2020 https://www.sahealth.sa.gov.au/wps/wcm/connect/a814a7004ee49c07836f8fd150ce4f37/Nausea++%26+Vomiting+in+Pregnancy+%26+Hyperemesis+Gravidarum_PPG_V3_0.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-a814a7004ee49c07836f8fd150ce4f37-nxz6FAS
- Women and Newborn Health Service King Edward Memorial Hospital Clinical Practice Guidelines, March 2020
- Gideon Koren, Radinka Boskovic et al Motherisk -P.U.Q.E. (pregnancy – unique quantification of emesis and nausea) scoring system for nausea and vomiting of pregnancy. American Journal a228-31
- eTG complete. Therapeutic Guidelines limited. [Online]. Published 2022, accessed 2023
- Castillo R, Ray R, YachmanF, 1989 Central Pontine myelinolysis & pregnancy Obstet Gynecology 73: 459-461

11. Document details

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Silverchain's policies align with relevant legislation and standards and are based on providing a fair, inclusive, and safe working environment free from bullying and discrimination and one that enables equal opportunity for all Silverchain staff.

Our policies embody our values of integrity, respect, trust, and compassion.

Appendix A Medications for Hyperemesis

1st Line Treatment Medications	Additional Information
Prescribe anti–emetics. • Metoclopramide (Maxalon) oral 10 mg tds. • Doxylamine 25mg Tabs. 6.25mg to 25mg up to three times daily, maximum of 50mg per day	Anti–emetics appear to reduce the severity and frequency of nausea in the first trimester but there is little high-quality and consistent evidence supporting any one intervention over another, which should be taken into account when making management decisions. These drugs may have side effects such as oculogyric crises and other extrapyramidal symptoms. This is particularly true if prescribing metoclopramide to a teenager where symptoms may be exacerbated. May cause sedation. Can be used in combination with pyridoxine.
Prescribe pyridoxine (vitamin B6) 10-25mg tds.	In accordance with standard therapeutic practice, start treatment with the lower dose. Pyridoxine alone appears to be effective in reducing the severity of nausea and is less likely to produce side effects. Administration will also reduce the risk of Vitamin B6 deficiency. In combination with metoclopramide, it appears to be superior to other monotherapy in the treatment of nausea and vomiting in pregnancy.
Consider prescribing folic acid .	Folic Acid at the time of conception and in the first trimester is associated with a reduction in neural tube defects. 0.5mg is the daily recommended dose.

If first line treatment fails, the following alternatives may be considered after medical consultation:

Second Line Drug Therapy	
Metoclopramide 10 mg IM or slow push IV (2 min).	
Consider prescribing antihistamines such as Promethazine (Phenergan) oral, 5 -25 mg tds or 12.5 mg deep IM up to tds - in the interval between administration of metoclopramide. **or** Prochlorperazine 5-10mg orally three to four times daily (	While not contraindicated, IV promethazine may cause a transient drop in blood pressure. *Do not prescribe metoclopramide and prochlorperazine together

3rd Line Drug Therapy	
Consider other anti-emetics such as ondansetron only following medical consultation: Ondansetron 4-8 mg tds administered either oral (tablet or wafer) or using a slow IV push (2-5 mins) • Refractory vomiting. • Recurrent hospital admissions.	Note: Anti reflux measures may also be useful. • Ranitidine or proton pump inhibitor. • Elevate bed head. • Small frequent feeds. • Remain upright >2 hours after eating. **Note**: Ondansetron has been associated with fatal ventricular tachyarrhythmias and should be avoided in patients with a history or risk factors for such arrhythmias

Last Line Drug Therapy	
Used rarely – and only after consultation. 20mg prednisolone twice daily orally or 100mg hydrocortisone IV twice daily.	While promethazine reduces the symptoms of hyperemesis gravidarum faster than prednisolone during prolonged treatment prednisolone has at least the same effects on the symptoms and less drug side effects. Corticosteroid therapy has been shown to lead to an improved sense of well-being, improved appetite and increased weight gain compared with placebo without significantly reducing vomiting or dependence on intravenous fluids. Steroids are however best avoided if there is pre-existing diabetes and glucose monitoring will need to occur if steroids are used to avoid hyperglycemic impacts on the fetus.