



ROYAL HOSPITAL FOR WOMEN

LOCAL OPERATING PROCEDURE

CLINICAL POLICIES, PROCEDURES & GUIDELINES

Approved by Quality & Patient Safety Committee
20/6/13

HYPEREMESIS GRAVIDARUM AND NAUSEA AND VOMITING IN PREGNANCY - MANAGEMENT

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Assess women with nausea and vomiting in pregnancy
- Ensure appropriate management of woman with nausea and vomiting in pregnancy

2. PATIENT

- Pregnant woman who presents with moderate or severe vomiting or hyperemesis

3. STAFF

- Medical Officers
- Registered Midwives
- Student Midwives
- Registered Nurses
- Student Nurses

4. EQUIPMENT

- 18/20G Intravenous (IV) Cannula
- IV Giving Set

5. CLINICAL PRACTICE

Initial assessment

ER or PEP clinic

- Confirm details of current of pregnancy :
 - Confirm pregnancy and gestation dates
 - History of vaginal bleeding
 - Medical history including the pattern of nausea and vomiting, fluid and dietary intake, factors exacerbating the condition, and current management.
 - Note signs of fever, headaches, abdominal pain or other symptoms that are not characteristic with uncomplicated nausea and vomiting in pregnancy
- Identify Risk factors and other medical conditions causing nausea and vomiting. [Appendix 1]
- Perform Clinical examination
 - Full examination is always needed to exclude other diagnoses
 - Maternal observations including baseline weight
 - Assess hydration status and fluid deficit
- Perform appropriate Investigations
 - Urine (Urinalysis for ketones, specific gravity + microscopy and culture to exclude infection)
 - Full Blood Count (FBC), Electrolytes Urea Creatinine (EUC), Liver Function Tests (LFT), TSH,
- NB: In patients with hyperemesis gravidarum who also have suppressed thyroid-stimulating hormone levels, treatment of hyperthyroidism should not be undertaken without evidence of intrinsic thyroid disease (including goiter and/or thyroid autoantibodies).
 - Ultrasound scan – If first presentation and if molar or multiple pregnancy not already established
 - Close blood sugar monitoring for diabetic patients



HYPEREMESIS GRAVIDARIM AND NAUSEA AND VOMITING IN PREGNANCY – MANAGEMENT cont'd

Management – Immediate Rehydrate if dehydration is present (see Figure 1)

- Give IV Normal Saline (0.9%) 1L stat then reassess
- Commence fluid balance chart

Control nausea / vomiting

- Do not rush oral intake. Fasting or sucking ice for 1st 24 hrs may help while antiemetics become therapeutic
- Suggest any oral intake, food or fluids, as tolerated. Individual patients find different foods are better tolerated. Cultural differences may influence the patient's choice of oral intake.
- Recommend hyperemesis diet (see Appendix 2)
- Provide patient information leaflet

Pharmacological measures

- Prescribe antiemetics (see Table 1)
- All women with impaired intake and weight loss should be given THIAMINE (Vit B1) 100mg daily (IV or oral as tolerated)
- Consider acid reducing therapy. Possible regimens include RANITIDINE 150-300 mg PO bd, or if severe: RABEPRAZOLE 20mg po or bd.

Electrolytes

- Treat Hypokalaemia - Oral therapy if tolerated, IV if severe (≤ 3.2 mmol/l) or unable to tolerate oral.
- Treat hyponatremia if present
- Consider enteral or parenteral feeding if:
 - Significant sustained weight loss or failure to achieve appropriate gestational weight gain
 - Inability to tolerate oral feeding despite antiemetic therapy
 - Multiple hospital admissions for Hyperemesis
 - Persistently abnormal LFTs

Ongoing Management see Figure 1

If ongoing vomiting, significant dehydration or electrolyte imbalance or unable to tolerate oral intake– ADMIT

If stable-

- Oral intake as tolerated
- Consider temporarily ceasing oral iron therapy and / or multivitamins
- Discuss (over the counter) OTC therapies including:
 - Ginger 125-250 mg PO q6hr (max 1g/24 hrs)
 - Pyridoxine (Vitamin B6) 10-25 mg PO q8hr – adjust dose if taking multivitamin already
- Rest, especially at the end of the day
- Prescribe antiemetics as per Table 1
- Weigh weekly until nausea and vomiting resolved

**HYPEREMESIS GRAVIDARUM AND NAUSEA AND VOMITING IN PREGNANCY –
MANAGEMENT cont'd**

Following acute resuscitation organise follow up:

- Pregnancy Day Stay (PDS) - for IV fluids as required
- GP
- Antenatal clinic RHW
- Medical Clinic RHW

Other care

- Arrange psychological support:
 - Reassurance of ultimate end point to symptoms
 - Formal psychologist or social work review may be of benefit
- Dietician review for patients with recurrent episodes
- Give patient information leaflet (Appendix A)

6. DOCUMENTATION

- Medication chart
- Fluid Balance chart
- Integrated clinical notes

7. EDUCATIONAL NOTES

- Approximately 50% of women experience nausea and vomiting in early pregnancy, and another 25% feel nausea alone. While in about 35% of these women the nausea and vomiting becomes clinically significant, only a small minority (0.3 - 1%) are diagnosed with hyperemesis gravidarum
- Hyperemesis is defined as excessive vomiting of both solid food and liquids combined with ≥ 1 of the following features
 - * Weight loss $>5\%$
 - * Ongoing requirement for intravenous fluids
 - * Hospital admissions
 - * No response to standard therapies
 - * No evidence of extra gestational disease e.g. peptic ulcer disease, urinary tract infection, hepatitis, raised CSF pressure, Addison's disease
- The peak severity occurs between 9-11 wks with 60% resolved by 13 weeks, 91% resolved by 20 wks. Persistent vomiting or vomiting that commences after week 14 of gestation is unusual, and needs investigation in a specialist centre to exclude underlying causes including pyelonephritis other infections and rarer metabolic causes. Nausea and vomiting symptoms correlates closely to the phasic rise and fall in levels human chorionic gonadotropin (hCG)
- Women frequently seek non-pharmacological treatments for nausea and vomiting. A 2010 Cochrane systematic review found high quality evidence is lacking about provision of good supportive treatments and advice for women experiencing nausea and vomiting. This study found that the use of ginger products may be helpful to women, but the evidence of effectiveness was limited and not consistent. There was only limited evidence from trials to support the use of pharmacological agents including vitamin B6, and anti-emetic drugs to relieve mild or moderate nausea and vomiting.

**HYPEREMESIS GRAVIDARUM AND NAUSEA AND VOMITING IN PREGNANCY –
MANAGEMENT cont'd**

- The Cochrane review found no evidence of efficacy of Acupressure: however acupressure is a safe inexpensive method that helps some women reduce symptoms of nausea and vomiting. (Pericardium 6 (P6) also known as point Neiguan, is an acupoint located about three fingers or 4.5 cm above the wrist on the inside of the forearm.)
- Hartman's is of no benefit. Do NOT give Dextrose (may precipitate Wernicke's encephalopathy or worsen hyponatraemia), or hypertonic saline (central pontine myelinolysis)
- The development of pregnancy day stays and early pregnancy units has allowed a more practical model of care for women affected by nausea and vomiting of pregnancy. This enables women to avoid multiple presentations to the emergency department when a woman needs it.

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Estimated Due Date (EDD)
- Diabetes - Management in Pregnancy
- Guidelines for the management of patients with problems in early pregnancy

9. REFERENCES

- 1 King Edward Memorial Hospital, Perth, WA, Clinical Guidelines: *9.6 Management of Hyperemesis gravidarum*, March 2009.
- 2 *Therapeutic Guidelines*, electronic version, July 2012, accessed 18/7/12.
- 3 Matthews A, Dowswell T, Haas DM, Doyle M, O'Mathúna DP. Interventions for nausea and vomiting in early pregnancy Cochrane Database of Systematic Reviews 2010, Issue 9. Art. No.: CD007575.
- 4 Ebrahimi N, Maltepe C, Einarson A. Optimal management of nausea and vomiting of pregnancy *International Journal of Women's Health* 2010; 2:241-248
- 5 Pastermak B et al. *N Engl J Med.* 2013 368(9):814-23. Ondansetron in pregnancy and risk of adverse fetal outcomes
- 6 Up-to-date Treatment and outcome of nausea and vomiting of pregnancy. Accessed March 2013
- 7 American College of Obstetricians and Gynecologists (ACOG). Nausea and vomiting of pregnancy. Washington (DC): American College of Obstetricians and Gynecologists (ACOG); 2004 Apr. 13 p. (ACOG practice bulletin; no. 52).
- 8 Lowe, S It's not just morning sickness. *O and G magazine* 2012:14(3) 1-2

REVISION & APPROVAL HISTORY

Maternity Services LOPs group 18/6/13



**HYPEREMESIS GRAVIDARIM AND NAUSEA AND VOMITING IN PREGNANCY –
MANAGEMENT cont'd**

APPENDIX 1

Risk factors and other medical conditions that may cause nausea and vomiting

<ul style="list-style-type: none"> o Multiple pregnancy o Molar pregnancy o Previous hyperemesis o Severe pre-eclampsia o Migraine o Benign paroxysmal positional vertigo o Meniere's disease o Vestibular neuritis 	<ul style="list-style-type: none"> o Gastro-oesophageal reflux o Peptic ulcer disease o Gastro-intestinal atony o Hepatitis o Cholelithiasis o Appendicitis o Inflammatory bowel disease o Pancreatitis o Severe Hypercalcemia o Hyperthyroidism o Urinary tract infection o Pyelonephritis 	<ul style="list-style-type: none"> o Pre-existing eating disorders o Financial and other situational stresses o Cultural isolation, removal from country of origin, separation from spouse/family o Depression o Unplanned pregnancy
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APPENDIX 2

Hyperemesis diet

- Small, frequent meals and snacks of bland, low fat, low carbohydrate, high protein diet
- Take more liquids than solids in the diet
- Encourage fluids to prevent dehydration – at least 2 L/day
- Avoid an empty stomach
- Prevent a full stomach – mix solids with liquids
- Avoid rich, spicy or fatty foods (including smelling and cooking)
- Eating dry crackers before rising in the morning
- Ice chips or icy poles may be beneficial
- High protein snack prior to going to bed



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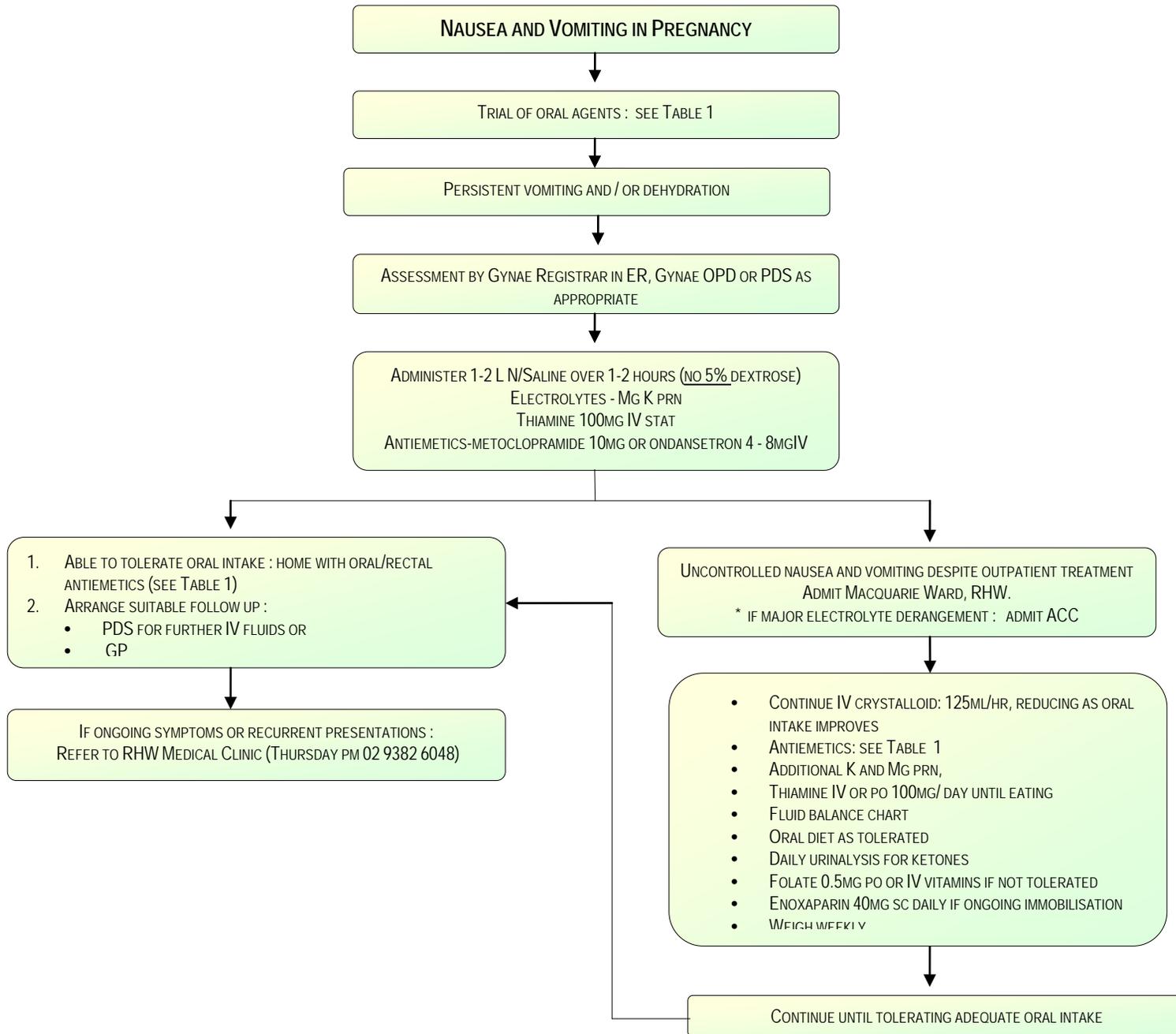
TABLE 1

Anti-emetics in pregnancy

	DRUG	DOSE	DAILY MAX	SIDE-EFFECTS	TGA CATEGORY IN PREGNANCY
OTC medications	DOXYLAMINE	25mg tab: ½-1 bd	50 mg	Significant sedation	A
	OR				
	PHENIRAMINE	45.3mg tab: 1 tds	135mg	Significant sedation	A
	OR				
	PROMETHAZINE	25mg tab: 1 tds	75mg	Significant sedation	C
If unresponsive or intolerant of OTC drugs: DOPAMINERGIC AGENTS	METOCLOPRAMIDE	10 mg tab: 1 tds or 10mg IM/IV/SC tds	30 mg	Dystonia, depression, extrapyramidal effects, mild sedation	A
	OR			Extrapyramidal reactions rare	
	DOMPERIDONE	10mg tab: 1-2 tds	60 mg	Dystonia, extrapyramidal effects, sedation	B2
	OR				
	PROCHLORPERAZINE	5 mg tab: 1 tds or 25mg supp: ½-1 bd or 12.5 mg IM/IV tds	37.5 mg		C
If unresponsive: Cease all or some dopaminergic agents and substitute 5HT3 antagonist	ONDANSETRON	2-8 mg tab/wafer po tds or 4-8mg IV tds	24 mg	Constipation*	B1
If unresponsive: Only after specialist consultation	HYDROCORTISONE	50-100mg IV 8th hourly	300mg	Risk of cleft palate before 10 wks	A
	followed by OR PREDNISOLONE	25-50mg po mane reducing over 10 days	50mg		A

Notes : *Always prescribe laxatives with ondansetron

1. Prescribe to optimise dose at time of maximal symptoms
2. Prescribe minimum dose to control symptoms
3. Use less sedating drugs during the day- may use a combination of sedating and non-sedating agents if necessary eg. Domperidone or Metoclopramide 10mg po or Ondansetron 2-4 mg mane and lunchtime with Doxylamine 12.5 - 25mg po or prochlorperazine 12.5-25mg PR nocte
4. Add acid reducing agents if persistent vomiting eg ranitidine 150mg tab po bd or rabeprazole 20mg tab nocte of or bd



APPENDIX A

NAUSEA AND VOMITING IN PREGNANCY Information in this leaflet is general in nature and should not take the place of advice from your health care provider. With every pregnancy there is a 3 to 5% risk of having a baby with a birth defect.

What is Nausea and Vomiting in Pregnancy? Nausea and vomiting in pregnancy (NVP) affects over half of all pregnant women and can have a significant impact on the lifestyle of the pregnant woman^{1, 2, 3}. Although NVP is commonly known as 'morning sickness', it can happen at any time of the day or night. Symptoms usually occur from week 6 to week 14, though may continue through the entire pregnancy. Symptoms are variable and include intermittent nausea, aversion to odours and particular foods, dry retching, vomiting and in severe cases, persistent vomiting, dehydration and electrolyte disturbances⁴. Other conditions can also cause nausea and vomiting in pregnancy and should be excluded by your doctor. The term hyperemesis gravidarum is used when symptoms are severe enough to require hospital admission and rehydration. Hyperemesis gravidarum is very rare and occurs in about one in 1000 pregnancies.

What causes Nausea and Vomiting in Pregnancy? The cause of NVP is unclear. The nausea may be a result of the changing hormones in a woman's body to support the pregnancy¹, low blood sugar, low levels of vitamin B6 (pyridoxine) or an imbalance in potassium and magnesium. A well balanced diet should provide adequate amounts of all these vitamins and minerals. There is no way of predicting if NVP will happen in a pregnancy however many women who have had NVP during their first pregnancy will also have it in subsequent pregnancies.

Is it Nausea and Vomiting in Pregnancy harmful to the pregnancy? Moderate levels of nausea and vomiting will not harm a developing baby⁵. Ensure you drink plenty of fluids and avoid dehydration. Try and eat a variety of foods so that you continue to get your daily requirements of vitamins, minerals and nutrients.

Settling Nausea and Vomiting in Pregnancy (Morning Sickness)¹. The following are some suggestions which may assist in settling morning sickness

- Try to avoid any triggers, like certain smells, that make you feel sick
- Drink plenty of fluids. It's best to drink small amounts often, but not at the same time as you are eating. Cold or frozen drinks and foods are often better tolerated.
- Don't overeat. Eat small meals rather than a lot of food all at once.
- Avoid an empty stomach- have frequent small snacks like dry toast, crackers or fruit.
- Avoid fatty, spicy, fried and battered foods.
- Try to eat at times when you feel least sick.
- Get out of bed slowly and take your time in the morning rather than rushing.
- Eat before you get out of bed in the morning (keep crackers and water beside the bed).
- Rest when you can - fatigue can make nausea worse.
- Do not brush your teeth right after eating as this can cause nausea.
- Some herbal teas may be helpful- try peppermint tea or ginger tea.

Complementary Therapies for Treatment of NVP^{1, 2,6}.

Acupressure wristbands for travel sickness (available from pharmacies) may help. Acupuncture and hypnosis have been used as alternative approaches, although there is limited evidence that they work. Consult an acupuncturist who is experienced in treating pregnant women. Ginger (*Zinger officinale*) is used to treat nausea and may be beneficial in NVP³. There are over the counter brands of ginger preparations available for use in pregnancy. The dose of Ginger is 125-250mg by mouth every 6 hours (maximum dose 1g every 24Hrs) –

Suggested medicines to treat Nausea and Vomiting of Pregnancy⁷ If the strategies listed above do not help, try doxylamine tablets and pyridoxine (vitamin B6) tablets. Doxylamine is classified as Category A for use in pregnancy in Australia⁶ and is considered safe in pregnancy. It is suggested that women commence taking doxylamine and pyridoxine tablets together as follows.

	Morning	Afternoon	Night
Doxylamine 25mg tablet	Take $\frac{1}{2}$ a tablet	Take $\frac{1}{2}$ a tablet	Take one tablet
Pyridoxine 25 mg tablet	Take $\frac{1}{2}$ a tablet	Take $\frac{1}{2}$ a tablet	Take one tablet

Doxylamine tablets are known by the brand names, Dozile® and Restavit® and are available from your local pharmacy. They are marketed in Australia as a sleeping aid but can also be used for NVP. Speak to the pharmacist and ensure you get tablets which you will be able to break in half.

Doxylamine may cause drowsiness. If this is a problem, try taking only at night.

Ensure the pyridoxine tablets (Vitamin B6) are a 25mg strength tablet.

Ensure you only take the recommended doses and see your doctor if symptoms persist. If these options do not give relief there are a range of prescription medications which are safe to use in pregnancy and have been shown to be useful in treating persistent nausea and vomiting of pregnancy. Consult your doctor for further advice.

References: 1. NSW Department of Health. Having a Baby. NSW Department of Health, 2006.

http://www.health.nsw.gov.au/pubs/2006/pdf/having_a_baby.pdf

2. OTIS. Nausea and Vomiting of Pregnancy (NVP). Organisation of Teratology Information Specialists. January 2007. <http://otispregnancy.org/pdf/nvp.pdf>

3. Einarson A et al. Treatment of Nausea and Vomiting in Pregnancy. Motherisk. December 2007. http://www.motherisk.org/women/updatesDetail.jsp?content_id=875

4. Australian Drug Evaluation Committee. Prescribing Medicines in Pregnancy. An Australian Categorisation of risk of drug use in pregnancy. 4th edition. Commonwealth of Australia. 1999. 5. *Therapeutic Guidelines*, electronic version, July 2012, accessed 18/7/12.

6. Matthews A, Dowswell T, Haas DM, Doyle M, O'Mathúna DP. Interventions for nausea and vomiting in early pregnancy. Cochrane Database of Systematic Reviews 2010, Issue 9. Art. No.: CD007575

7. Ebrahimi N, Maltepe C, Einarson A. Optimal management of nausea and vomiting of pregnancy. International Journal of Women's Health 2010; 2:241-248

Additional Information: <http://otispregnancy.org/pdf/nvp.pdf>

For more information call MotherSafe: NSW Medications in Pregnancy and Breastfeeding Service on 9382 6539 (Sydney Metropolitan Area) or 1800 647 848 (Non-Metropolitan Area) Monday –Friday 9am-5pm (excluding public holidays)

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