

COVID-19 Community of Practice for Ontario Family Physicians

May 26, 2023

**Dr. Susy Hota
Ms. Anne Dabrowski
Dr. Ian Pun**



COVID updates and ChatGPT



Family & Community Medicine
UNIVERSITY OF TORONTO

Ontario College of
Family Physicians



COVID updates and ChatGPT

Moderator:

- Dr. Ali Damji, Division Head, Primary Care, Trillium Health Partners and Family Physician, Credit Valley Family Health Team, Mississauga, ON

Panelists:

- Dr. Susy Hota, Toronto, ON
- Ms. Anne Dabrowski, Toronto, ON
- Dr. Ian Pun, Toronto, ON

Co-host:

- Dr. Mekalai Kumanan, Cambridge, ON

The COVID-19 Community of Practice for Ontario Family Physicians is a one-credit-per-hour Group Learning program that has been certified for up to a total of 32 credits.

Land Acknowledgement

We acknowledge that the lands on which we are hosting this meeting include the traditional territories of many nations.

The OCFP and DFCM recognizes that the many injustices experienced by the Indigenous Peoples of what we now call Canada continue to affect their health and well-being. The OCFP and DFCM respects that Indigenous people have rich cultural and traditional practices that have been known to improve health outcomes.

I invite all of us to reflect on the territories you are calling in from as we commit ourselves to gaining knowledge; forging a new, culturally safe relationship; and contributing to reconciliation.

‘Doesn’t get more colonial than Victoria Day’: How an Indigenous firm wants to make holidays more inclusive

CHRIS HANNAY > INDEPENDENT BUSINESS REPORTER

PUBLISHED MAY 23, 2021

This Victoria Day, Jeff Ward is going into work. Even though it’s a federal holiday, it’s what he did last year, and the year before, and the year before that. In fact, he says, he has chosen to work nearly every Victoria Day of his professional life.

The reason is because of what the day represents: the birth of the Queen. “It doesn’t get more colonial than Victoria Day,” said Mr. Ward, who is Ojibwe and Métis and runs Animikii Indigenous Technology, a firm in Victoria.

This Victoria Day is special for him, though, because unlike years past, he’s inviting his employees to work with him, too, if they want. In exchange, they can take another day off of their choosing as a holiday.



Changing the way we work

A community of practice for family physicians during COVID-19

At the conclusion of this series participants will be able to:

- Identify the current best practices for delivery of primary care within the context of COVID-19 and how to incorporate into practice.
- Describe point-of-care resources and tools available to guide decision making and plan of care.
- Connect with a community of family physicians to identify practical solutions for their primary care practice under current conditions.

Disclosure of Financial Support

This CPD program has received in-kind support from the Ontario College of Family Physicians and the Department of Family and Community Medicine, University of Toronto in the form of logistical and promotional support.

Potential for conflict(s) of interest:

N/A

Mitigating Potential Bias

- The Scientific Planning Committee has full control over the choice of topics/speakers.
- Content has been developed according to the standards and expectations of the Mainpro+ certification program.
- The program content was reviewed by a three-member national/scientific planning committee.

Planning Committee: Dr. Tara Kiran (DFCM), Dr. Mekalai Kumanan (OCFP); Dr. Ali Damji (DFCM), Dr. Liz Muggah (OH), Kimberly Moran (OCFP), Mina Viscardi-Johnson (OCFP), Julia Galbraith (OCFP), Marisa Schwartz (DFCM), Erin Plenert (DFCM)

Previous webinars & related resources:

<https://www.dfcm.utoronto.ca/covid-19-community-practice/past-sessions>



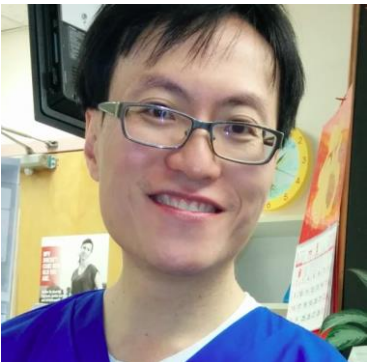
Dr. Susy Hota – Panelist

Infectious Disease Specialist, University Health Network and Associate Professor of Medicine, Division of Infectious Diseases, University of Toronto



Ms. Anne Dabrowski– Panelist

Director, Information Services, Centre for Effective Practice, Toronto



Dr. Ian Pun – Panelist

Family Physician and Rouge Valley FHO, Dept of Family Practice, Scarborough Health Network



Dr. Mekalai Kumanan– Co-Host

Twitter: @MKumananMD

President, Ontario College of Family Physicians

Family Physician, Two Rivers Family Health Team

Chief of Family Medicine, Cambridge, ON

Speaker Disclosure

- Faculty Name: **Dr. Susy Hota**
- Relationships with financial sponsors:
 - Grants/Research Support: N/A
 - Speakers Bureau/Honoraria: Ontario College of Family Physicians
 - Others: N/A

- Faculty Name: **Anne Dabrowski**
- Relationships with financial sponsors:
 - Grants/Research Support: N/A
 - Speakers Bureau/Honoraria: Ontario College of Family Physicians, Centre for Effective Practice
 - Others: N/A

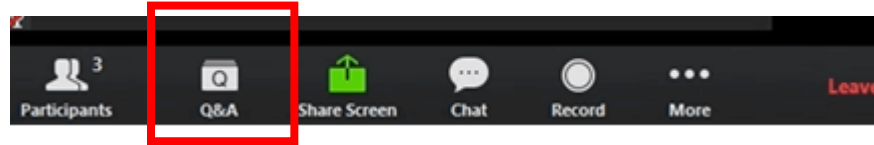
- Faculty Name: **Dr. Ian Pun**
- Relationships with financial sponsors:
 - Grants/Research Support: N/A
 - Speakers Bureau/Honoraria: Ontario College of Family Physicians, Amgen, Pfizer, Novonordisk
 - Others: N/A

Speaker Disclosure

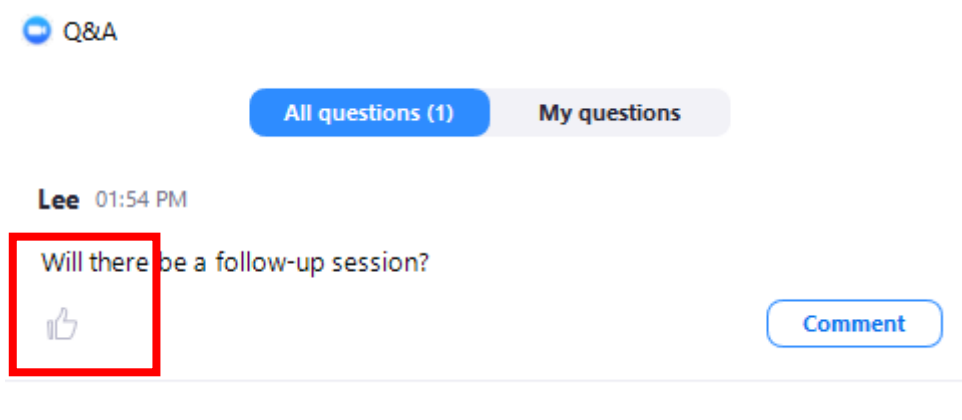
- Faculty Name: **Dr. Ali Damji**
- Relationships with financial sponsors:
 - Grants/Research Support: N/A
 - Speakers Bureau/Honoraria: Ontario College of Family Physicians
 - Others: N/A
- Faculty Name: **Dr. Mekalai Kumanan**
- Relationships with financial sponsors:
 - Grants/Research Support: N/A
 - Speakers Bureau/Honoraria: Ontario College of Family Physicians
 - Others: Chief of Family Medicine, Cambridge Memorial Hospital

How to Participate

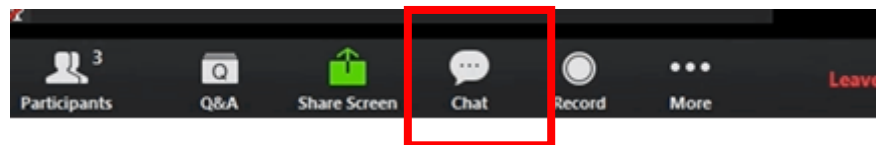
- All questions should be asked using the Q&A function at the bottom of your screen.



- Press the thumbs up button to upvote another guests questions. Upvote a question if you want to ask a similar question or want to see a guest's question go to the top and catch the panels attention.



- Please use the chat box for networking purposes only.





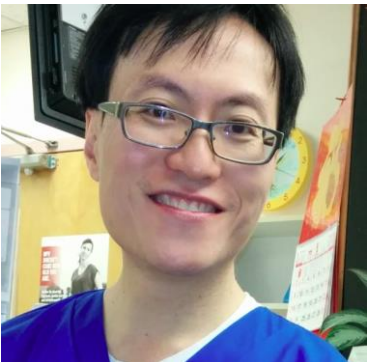
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Update on the Pandemic

Current State of Pandemic in Ontario

The New York Times

OPINION

GUEST ESSAY

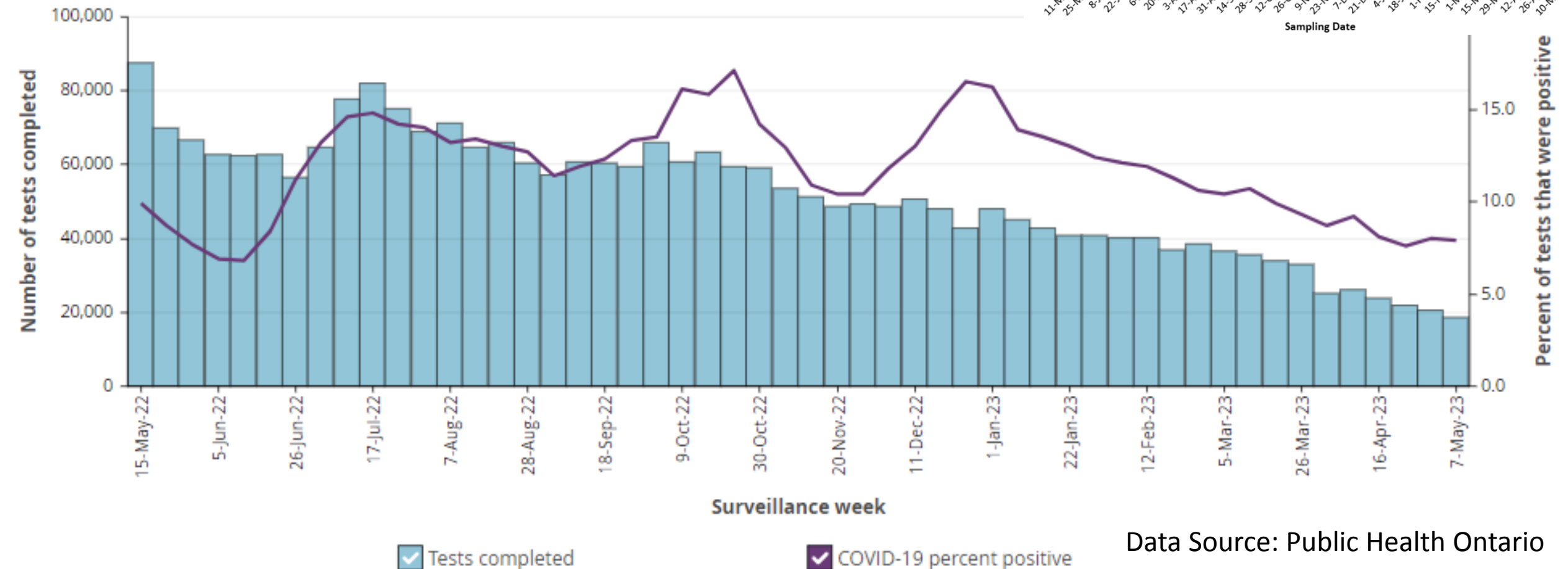
If the Pandemic Is No Longer a Public Health Emergency, Then What Is It?

May 9, 2023

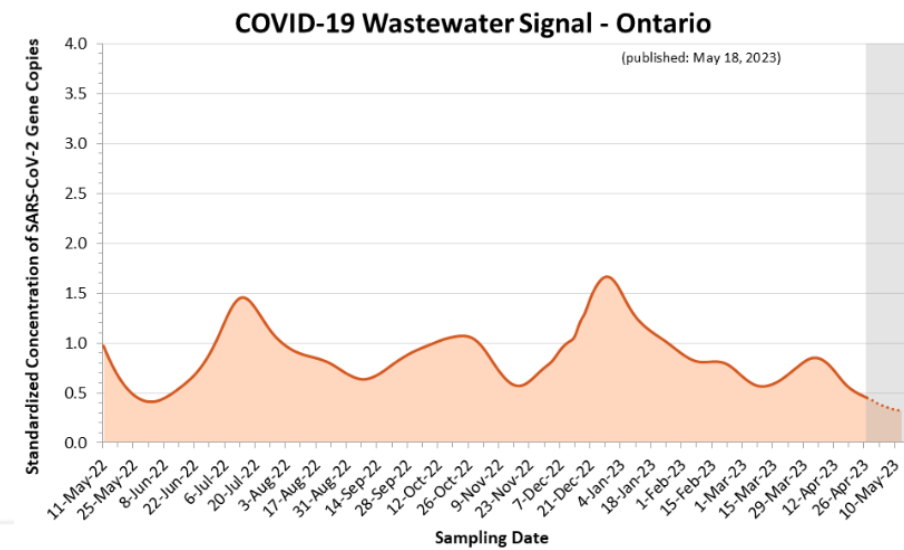
Number of COVID-19 tests completed and percent positive by surveillance week

May 15, 2022 to May 13, 2023

This graph shows provincial testing data for COVID-19 over the previous 52 weeks.



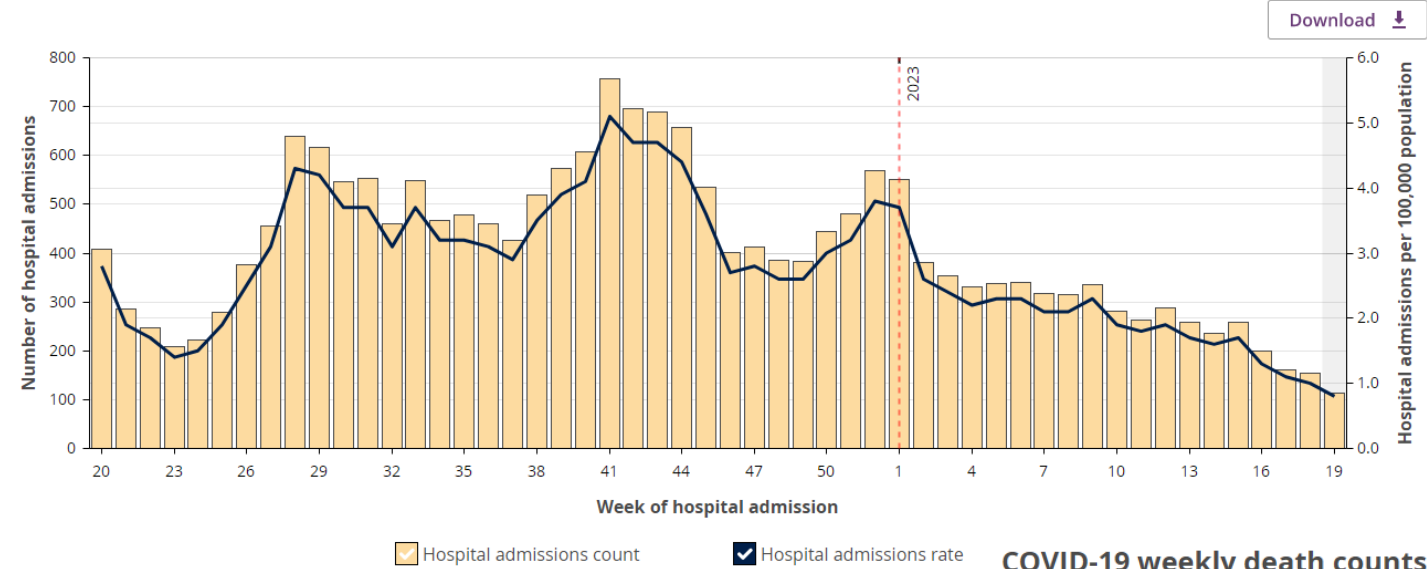
Data Source: Public Health Ontario



COVID-19 weekly hospital admission counts and rates by admission date in Ontario

May 15, 2022 to May 13, 2023

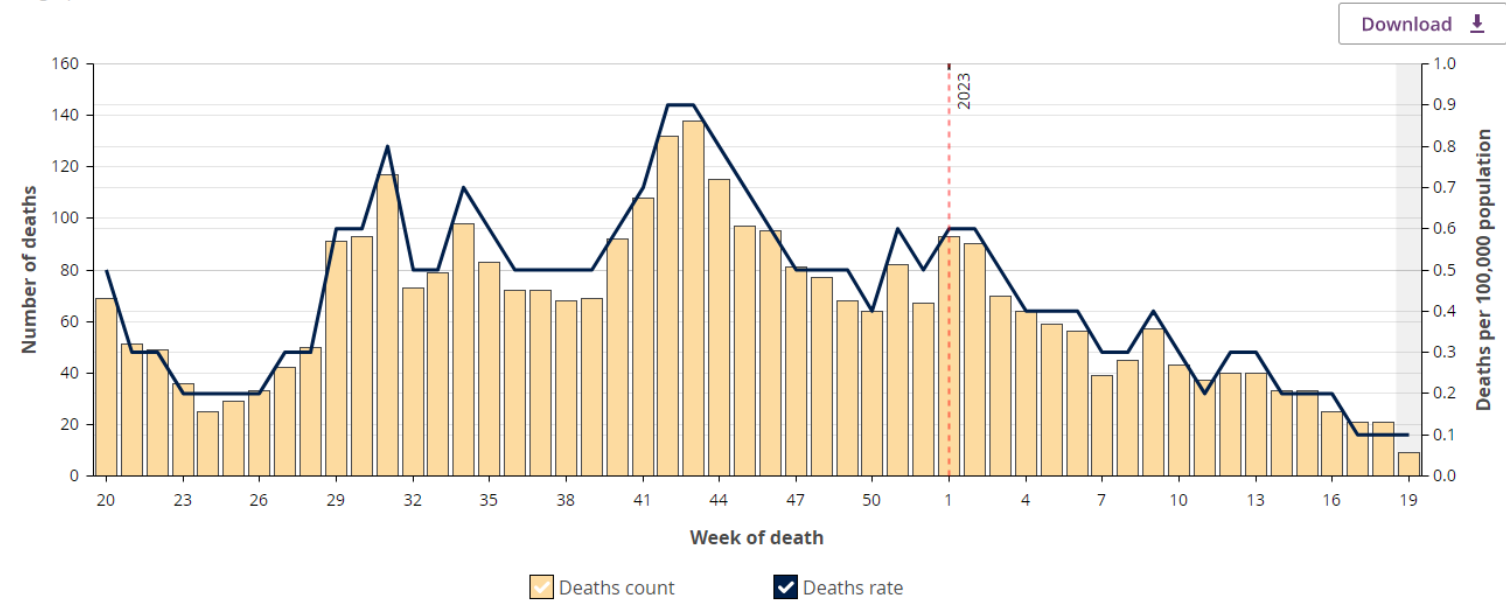
This graph shows COVID-19 hospital admissions over time.



COVID-19 weekly death counts and rates in Ontario

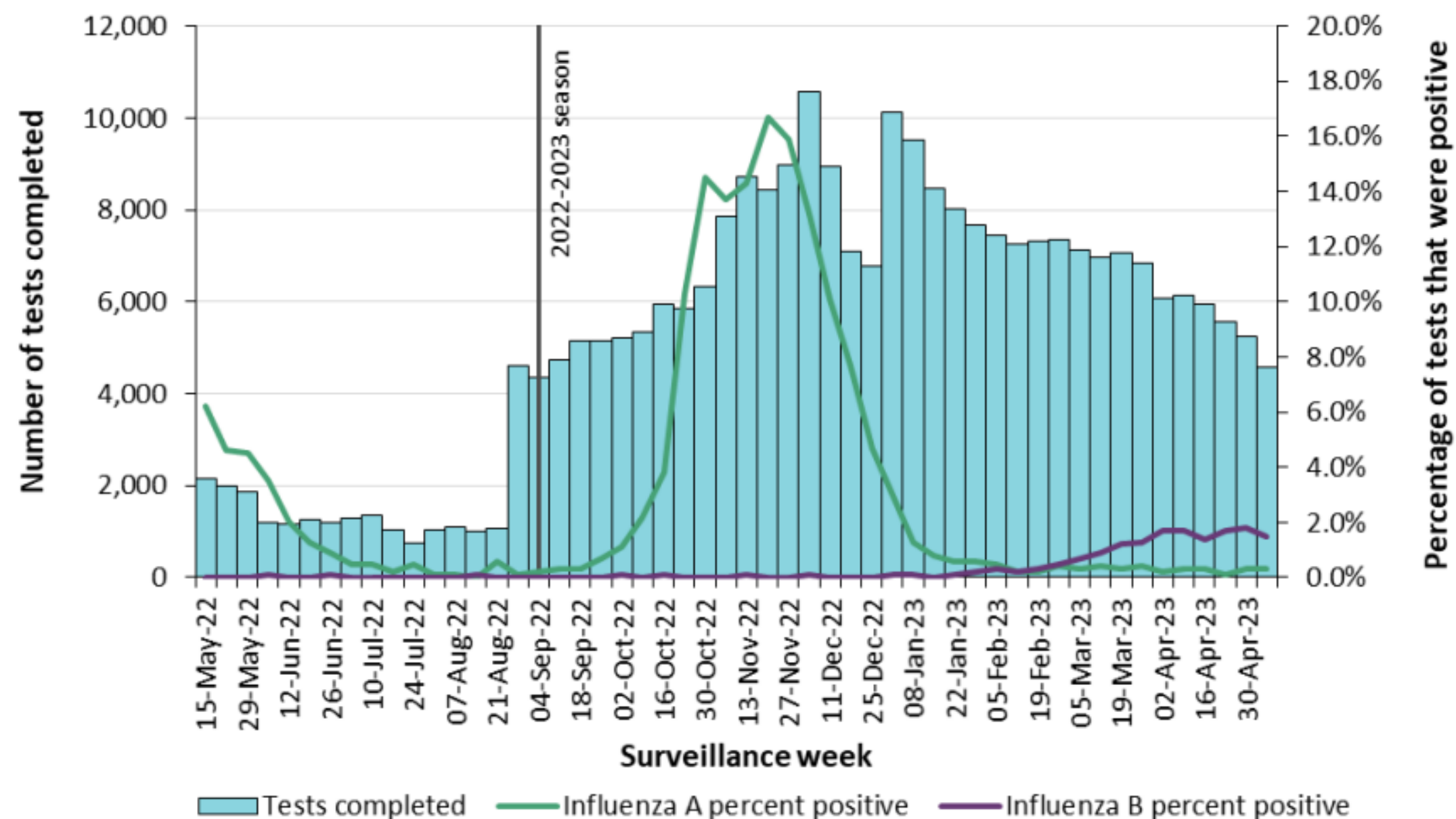
May 15, 2022 to May 13, 2023

This graph shows COVID-19 deaths over time.



Data Source: Public Health Ontario

Figure 2. Number of influenza tests performed and percent positive by surveillance week



Data Source: Public Health Ontario



TECHNICAL BRIEF

Interim Infection Prevention and Control Measures Based on Respiratory Virus Transmission Risk in Health Care Settings

This document replaces the former Interim Infection Prevention and Control Measures based on COVID-19 Transmission Risks in Health Care Settings.

Published: April 2023

<https://www.publichealthontario.ca/-/media/Documents/I/2023/ipac-measures-transmission-risks-technical-brief.pdf>

Table 2: Routine Practices for Risk Periods

| Routine Practices for Respiratory Viruses | High Risk Period | Non-High Risk Period |
|--|---|---|
| HCW Masking for direct patient care | Recommend | Situational^^ |
| HCW Masking in inpatient clinical areas | Strongly consider^ | Situational^ |
| HCW Masking in outpatient clinical areas | Consider^ | Situational** |
| HCW Masking in non-clinical areas (i.e., no patient care activities performed/delivered) | Consider* | Situational** |
| Eye protection when within 2 metres of an asymptomatic patient | As per Personal Risk Assessment (Routine Practices) | As per Personal Risk Assessment (Routine Practices) |
| Asymptomatic Patient masking† | Recommend when ambulatory. Consider when in bedspace while receiving care. | Situational††† |
| Visitor/essential caregiver masking in clinical areas | Recommend†† | Situational** |

TORONTO REGION

COVID-19 HOSPITAL OPERATIONS TABLE

GTA Hospital

IMS

MEMO

To: TR and Central Hospital CEOs, TR-HOT membership and GTA IMS Operations membership

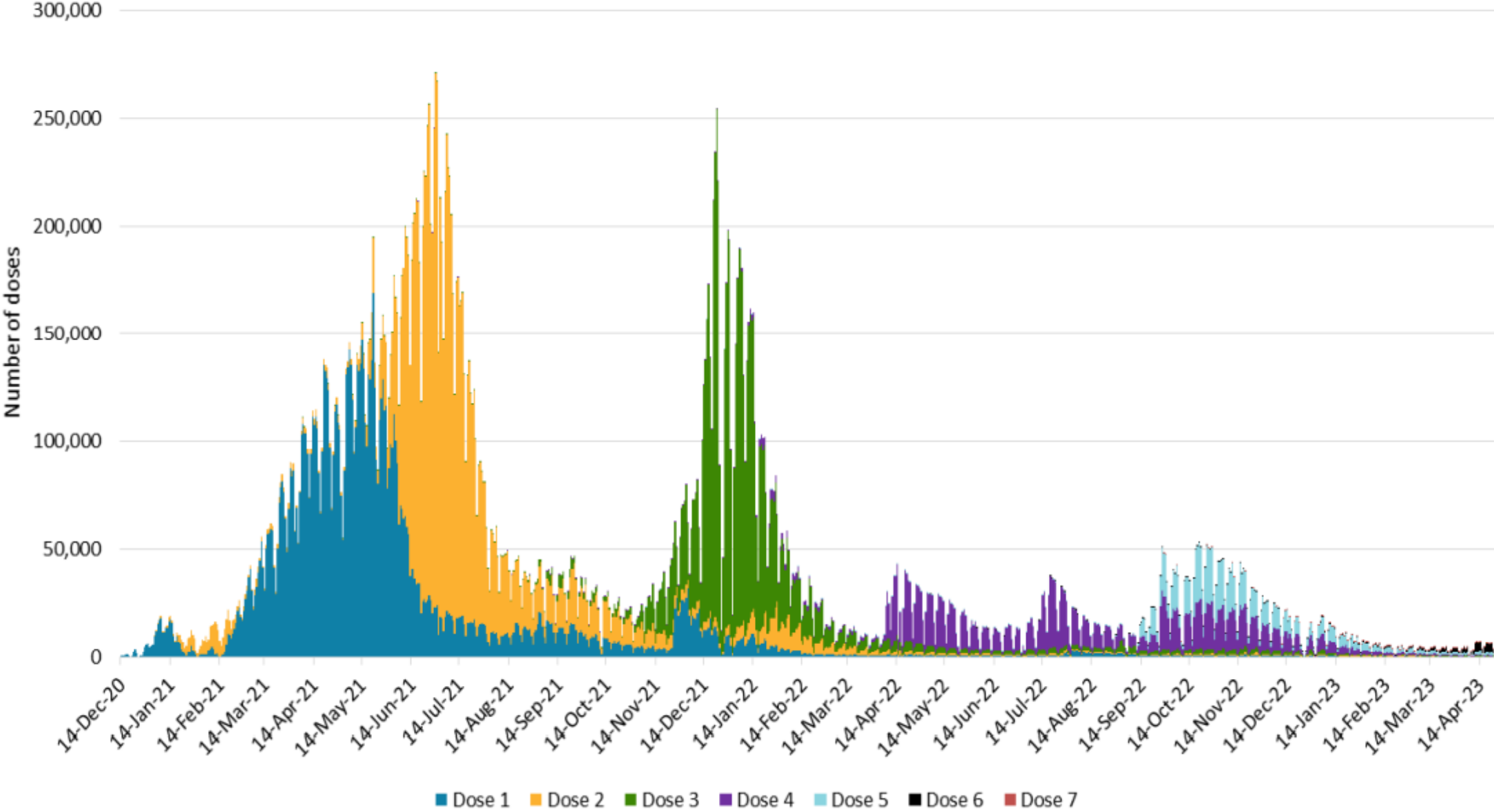
From: Jane Merkley, Dr. Dan Cass (TR-HOT Co-chairs), Dr. Susy Hota (TR-HOT & GTA IMS IPAC lead), Dr. Jennie Johnstone (IPAC Community of Practice), Dr. Andrew Baker (GTA IMS Commander), Scott Jarrett (GTA IMS) on behalf of Toronto Regional Hospital Operations Table and the COVID-19 GTA Hospital IMS

Date: April 11th, 2023

Subject: Updated COVID-19 Guidance and Pandemic Measures for Infection Prevention and Control in Hospitals, Version 3

| Version 1 Recommendations (Feb 28 th , 2023) | Version 2 Recommendations (March 22 nd , 2023) | Version 3 Recommendations (April 11 th , 2023) |
|---|--|---|
| <p><u>Recommendation # 2: Universal Masking</u></p> <p>Guidance remains status quo in hospital settings.</p> <ul style="list-style-type: none"> > Hospitals may make masking encouraged but not mandatory for off-site, non-clinical departments*. > Hospitals should continue to require universal masking for off-site ambulatory clinics. <p>*Off-site, non-clinical areas are defined as departments, services and research centres that do not provide patient care and are not part of the hospital building.</p> | <p><u>Recommendation # 2: Universal Masking</u></p> <p>No changes from Version 1</p> | <p><u>Recommendation #2: Universal Masking</u></p> <p>In the hospital setting, <u>continue with mandatory masking</u> in the following areas:</p> <ul style="list-style-type: none"> > All patient-facing clinical areas will continue to mask. > All common areas (elevators, hallways, stairwells, lobbies) where patients are present <p>In the hospital setting, masking is <u>no longer mandatory</u> in:</p> <ul style="list-style-type: none"> > Non-clinical and non-patient-facing areas (e.g., Finance and HR Departments) > Non-patient-facing clinical areas (e.g., Pharmacy Department, Labs, MDRD) <i>NB: Masking may be required as per pre-pandemic practices in alignment with Department policies and standards</i> > Office and meeting spaces in non-clinical areas, including auditoriums. <p>NB: We recommend that meeting spaces that are physically located within clinical inpatient units maintain masking.</p> |

Figure 1. Number of COVID-19 vaccine doses administered by dose number and date of dose administration: Ontario



An Advisory Committee Statement (ACS) National Advisory Committee on Immunization (NACI)

Guidance on an additional COVID-19 booster dose in
the spring of 2023 for individuals at high risk of severe
illness due to COVID-19

1. Individuals 5 years of age and older should be immunized with a primary series of an authorized mRNA vaccine. (Strong NACI recommendation)
2. Children 6 months to under 5 years of age may be immunized with a primary series of an authorized mRNA vaccine. (Discretionary NACI recommendation)
3. For individuals who have not received previously recommended doses (primary series or booster doses, including the fall 2022 booster dose)
4. Starting in the spring of 2023, NACI recommends that an additional booster dose may be offered as per the recommended interval to the following individuals who are at increased risk of severe illness from COVID-19:
 - Adults 80 years of age and older
 - Adult residents of long-term care homes and other congregate living settings for seniors or those with complex medical care needs
 - Adults 18 years of age and older who are moderately to severely immunocompromised (due to an underlying condition or treatment)
 - Adults 65 to 79 years of age, particularly if they do not have a known prior history of SARS-CoV-2 infection (Discretionary NACI recommendation)

New: RSV Vaccines

- May 3: FDA approved Pfizer RSV vaccine (Arexvy) for prevention of LRTI in adults ≥ 60 years
 - Ongoing study involving 25 000 participants (will continue through 3 seasons)
 - 83% reduction in LRTI; 94% reduction in severe LRTI
 - Additional smaller studies also supportive
 - AEs: minor symptoms; in a study with concomitant influenza vaccine: ADEM, GBS reported
- May 18: FDA meeting to review maternal RSV vaccine to protect newborns from severe RSV
 - Studies: 82% effective in preventing severe LRTI in newborns in first 3 months; 69% effective at 6 months (then wanes)
 - Generally safe, with slight increase in preterm labour (5.7% vs 4.7% in placebo)

Update on access to Remdesivir

- The Ministry of Health has established community-based Remdesivir pathways for treatment of COVID-19 by leveraging Home and Community Care Support Services (HCCSS). There are 14 HCCSS branches across Ontario and the majority of HCCSS regions are participating.
- Prescribers in hospital or the community can refer a patient to their local HCCSS branch to have Remdesivir infusions administered by a nurse. The prescribers submit a prescription form and the HCCSS care coordinators will follow up with the patient.
- In most cases, patients will receive infusions at a community nursing clinic; at-home service may be provided if required.

Update on access to Remdesivir Con't

For local HCCSS contact information and referral forms, see <https://www.healthcareathome.ca/find-my-hccss/>

Please note:

- In Northern Ontario, hospitals and assessment centres continue to operate and provide COVID-19 assessments in most communities; local community variations may exist.
- In Toronto, administration of all three doses of Remdesivir by Toronto HCCSS will commence by July 1 at the latest; providers can continue to refer patients to the UHN Connected Care (Virtual) Clinic (<https://uhnconnectedcare.ca/covid-19/>).

Providers can reach out to their local HCCSS branch or Ontario Health (OH) regional contacts for more information:

- **OH Central:** Mira.Backo-Shannon@ontariohealth.ca, David.Pearson@ontariohealth.ca)
- **OH East:** Farrah.Hirji@ontariohealth.ca, Lesley.Ng@ontariohealth.ca
- **OH Toronto:** TOTherapeutics@ontariohealth.ca
- **OH West:** Jennifer.MillsBeaton@ontariohealth.ca, Karen.M.Bell@ontariohealth.ca, Heather.Byrnell@ontariohealth.ca, Tammy.Meads@ontariohealth.ca
- **OH North East and North West:** Jennifer.MacKinnon@ontariohealth.ca, Robert.Barnett@ontariohealth.ca

Reminder about Paxlovid drug interactions

- Canadian cases of serious adverse events following a drug-drug interaction between Paxlovid™ and tacrolimus have been reported to Health Canada. Tacrolimus is an immunosuppressant drug used for the treatment or prevention of organ transplant rejection and the treatment of rheumatoid arthritis.
- Ontario Health is advising that **transplant recipients should not take Paxlovid™ without first speaking to their transplant care team**. Solid organ transplant recipients who test positive for COVID-19 should be directed to contact their transplant care team to receive the appropriate COVID-19 therapeutics and follow-up care.
- Health care providers should refer to the [Paxlovid Prescribing & Drug Interaction Guide](#) from the University of Waterloo School of Pharmacy and University of Toronto Leslie Dan Faculty of Pharmacy. Additional information can be found in Health Canada's [March 2023 Health Product InfoWatch](#) regarding Paxlovid™ drug-drug interactions with immunosuppressants including cyclosporine, everolimus, sirolimus and tacrolimus.

ChatGPT



Examples

"Explain quantum computing in simple terms" →

"Got any creative ideas for a 10 year old's birthday?" →

"How do I make an HTTP request in Javascript?" →



Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests



Limitations

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

**Anne Dabrowski,
MI**

Medical librarian & knowledge translation specialist

Director, Information Services
Centre for Effective Practice

CoP May 26, 2023

Send a message.



Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. [ChatGPT May 12 Version](#)

ChatGPT: What *is* it?

GPT: Generative Pre-trained Transformer

A **Large Language Model (LLM)** is a type of **generative AI** that uses **Natural Language Processing**



Uses content it has been “trained” on



to generate *original* content

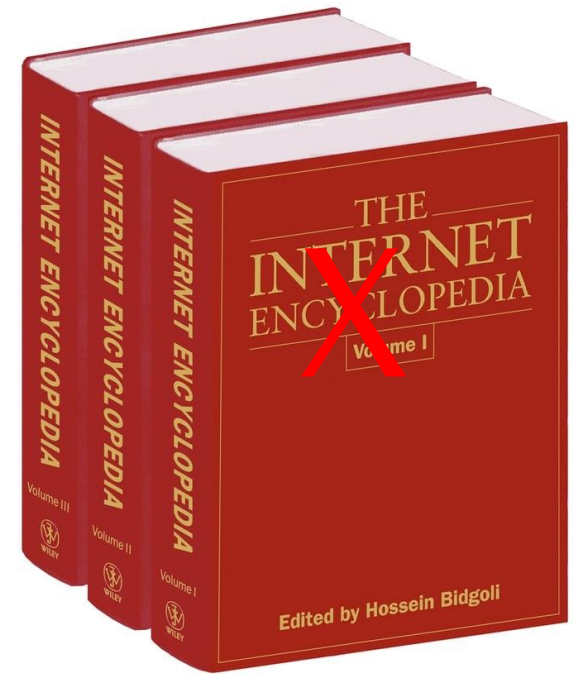


that resembles human writing.

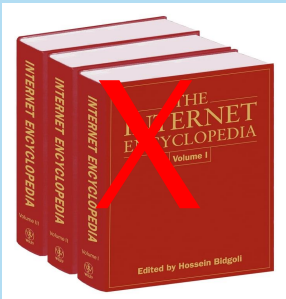
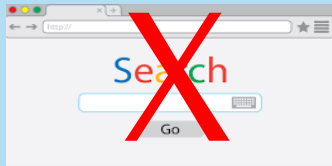
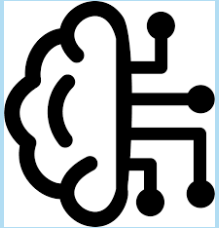
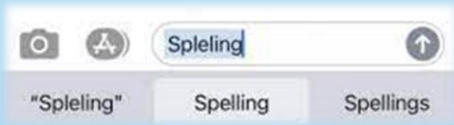
LLMs are mimics. They predict word sequences based on patterns in their training data.



ChatGPT: What *isn't* it?

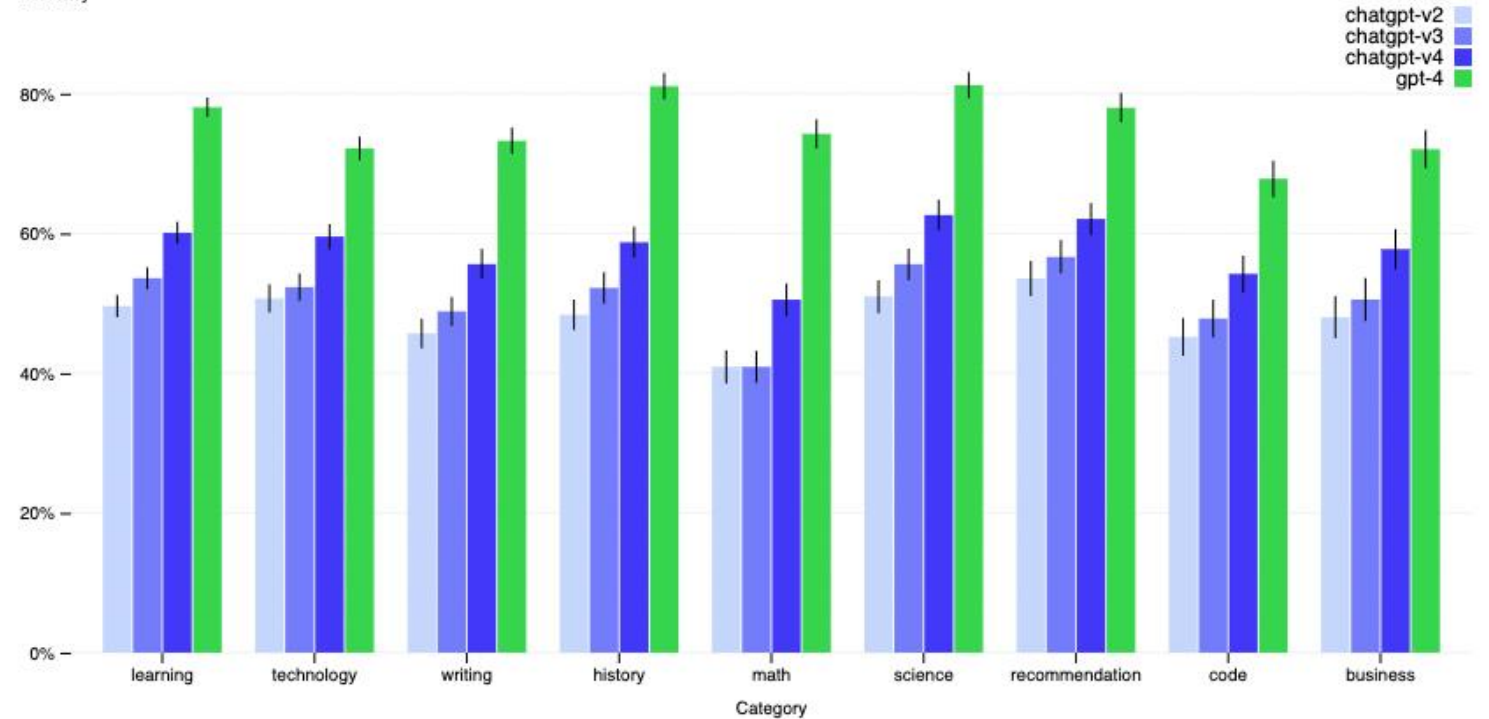


What does this mean?



Internal factual eval by category

Accuracy



On nine categories of internal adversarially-designed factual evals, we compare GPT-4 (green) to the first three ChatGPT versions. There are significant gains across all topics. An accuracy of 1.0 means the model's answers are judged to be in agreement with human ideal responses for all questions in the eval.

Human in the loop (HITL)

Wherever possible, we recommend having a human review outputs before they are used in practice. This is especially critical in high-stakes domains, and for code generation. Humans should be aware of the limitations of the system, and have access to any information needed to verify the outputs (for example, if the application summarizes notes, a human should have easy access to the original notes to refer back).

[Safety best practices, OpenAI](#)



Explain value of Evusheld for COVID-19 prophylaxis



I'm sorry, but I couldn't find any information on a product called "Evusheld" in relation to COVID-19 prophylaxis. It's possible that this product is either very new or specific to a certain region or market. As of my knowledge cutoff in September 2021, there were no specific medications or treatments approved for COVID-19 prophylaxis, apart from certain vaccines that were authorized for emergency use.



It's important to rely on updated and verified information from reputable health organizations such as the World Health Organization (WHO) or the Centers for Disease Control and Prevention (CDC) regarding COVID-19 prevention and treatment. They provide guidance on vaccination, wearing masks, practicing good hygiene, and maintaining physical distancing to reduce the risk of contracting or spreading the virus.

If "Evusheld" is a new product or treatment that has emerged after my knowledge cutoff date, I recommend consulting credible sources or consulting with healthcare professionals for the latest information and evaluation of its effectiveness.

May 25, 2023



Explain value of Evusheld for COVID-19 prophylaxis



Evusheld (sufentanil sublingual tablet) is a potent opioid pain medication that has not been approved or authorized for COVID-19 prophylaxis. It is primarily used to manage acute pain during surgical and diagnostic procedures.



Explain value of Tixagevimab-cilgavimab for COVID-19 prophylaxis



Tixagevimab-cilgavimab is a combination of two monoclonal antibodies that has been authorized by several regulatory authorities, including the US Food and Drug Administration (FDA), for emergency use as a post-exposure prophylaxis (PEP) option for certain individuals who are at high risk of developing severe COVID-19.



I'm an ER doctor: Here's what I found when I asked ChatGPT to diagnose my patients

“ChatGPT’s worst performance happened with a 21-year-old female patient who came into the ER with right lower quadrant abdominal pain. I fed her HPI into ChatGPT, which instantly came back with a differential diagnosis of appendicitis or an ovarian cyst, among other possibilities. But ChatGPT missed a somewhat important diagnosis with this woman. She had an ectopic pregnancy...”

My fear is that countless people are already using ChatGPT to diagnose themselves rather than see a physician.”

Me: Create a SOAP note for my patient who is complaining of stomach ache early in the morning. He's a smoker and he eats fast food regularly. He suffers from heartburn and over-the-counter anti-acid medications do not help. He experiences a significant amount of stress at work. I ordered a PCR test for H. Pyroli and have been prescribed pantoprazole 20mg taken daily one hour before breakfast.

ChatGPT Response:

Subjective: The patient is a smoker and regularly eats fast food. Complaints of stomach ache early in the morning, heartburn and over-the-counter anti-acid medications have not provided relief. Reports significant stress at work.

Objective: Physical examination reveals mild abdominal tenderness. PCR test for H. Pyroli ordered.

Assessment: Gastroesophageal reflux disease (GERD) is likely exacerbated by lifestyle factors and stress.

Plan: Prescribe pantoprazole 20mg to be taken daily one hour before breakfast. Re-evaluate in 1 week and adjust treatment as needed. Advise the patient to make lifestyle changes such as quitting smoking, eating a healthier diet, and finding ways to manage stress.

ChatGPT 4:

| Can be useful for.... (with verification by a human) | Proceed with caution for... (with verification by a human) | Avoid for... |
|--|---|--|
| <ul style="list-style-type: none">✓ SOAP notes✓ Writing EMR queries✓ Crafting patient-friendly language✓ Professional bio | <p>⚠ A diagnostic tool or clinical decision support aid</p> | <ul style="list-style-type: none">✗ Patient information-seeking✗ Authoritative guidance |

Rules of thumb:

Humans in the loop

Don't ask ChatGPT anything you don't know or can't verify

Healthcare AI landscape: beyond ChatGPT

Features of existing and in-development tools that will make them particularly robust for the healthcare context include....

- Tools developed specifically for medical practice, by medical practitioners and experts
- Tools that work within LLM limitations to assist specific tasks, such as AI Scribe
- Filters – Mechanisms for users to specify the types of information they want see
- Semantic search – More sophisticated means of identifying relevant information
- Augmented retrieval – Looking only to specific sources to draw content from

1

*When that this pestilence, ycleped COVID,
Hath forced us all to alter our travail,
To keepeth pace with guidance new and clear,
And in this changing realm, uncertainty assail.*

2

*The COVID-19 Community of Practice,
A haven for family physicians true,
In Ontario's realm, they gather and unite,
To learn and connect, in times of rue.*

3

*Every fortnight or thrice, they do convene,
To hear from experts, wisdom to attain,
On COVID's latest evidence and policy keen,
And seeketh solace, their fellow physicians
fain.*

4

*Innovation and addressing challenges raw,
Practical ways they seek to find,
Through interactive sessions, one and all,
By attendee queries, sessions are designed.*

5

*Each gathering recorded for posterity's sake,
Shared after the event, for all to see,
Slides, resources, and FAQs they make,
To aid in learning, for the curious and free.*

6

*This COVID-19 Community of Practice rare,
A joint initiative, where hearts combine,
From University of Toronto's Department fair,
And Ontario College of Family Physicians fine.*

7

*A Group Learning program, of merit and worth,
Certified for credits, thirty-two in store,
For Ontario's family physicians henceforth,
A testament to learning, forevermore.*

Key resources & further reading

OpenAI

- [What is ChatGPT? FAQ](#)
- [GPT-4 System Card \(Mar 23, 2023\)](#) – Generated by the creators of ChatGPT, this report analyzes GPT-4, including specific focus on limitations and safety challenges

University of Waterloo Libguides

- [ChatGPT and Generative Artificial Intelligence \(AI\): False and outdated information](#), including further information on prompt-based bias

Revolutionizing Medical Care: Empowering Physicians with Artificial Intelligence Large Language Models

DR. IAN PUN, FAMILY PHYSICIAN

Rouge Valley FHO, Scarborough Health Network
admin OSCAR ONTARIO FACEBOOK GROUP



DRPUN.COM

GOALS:

To enhance our MD's with AI

I will demonstrate:

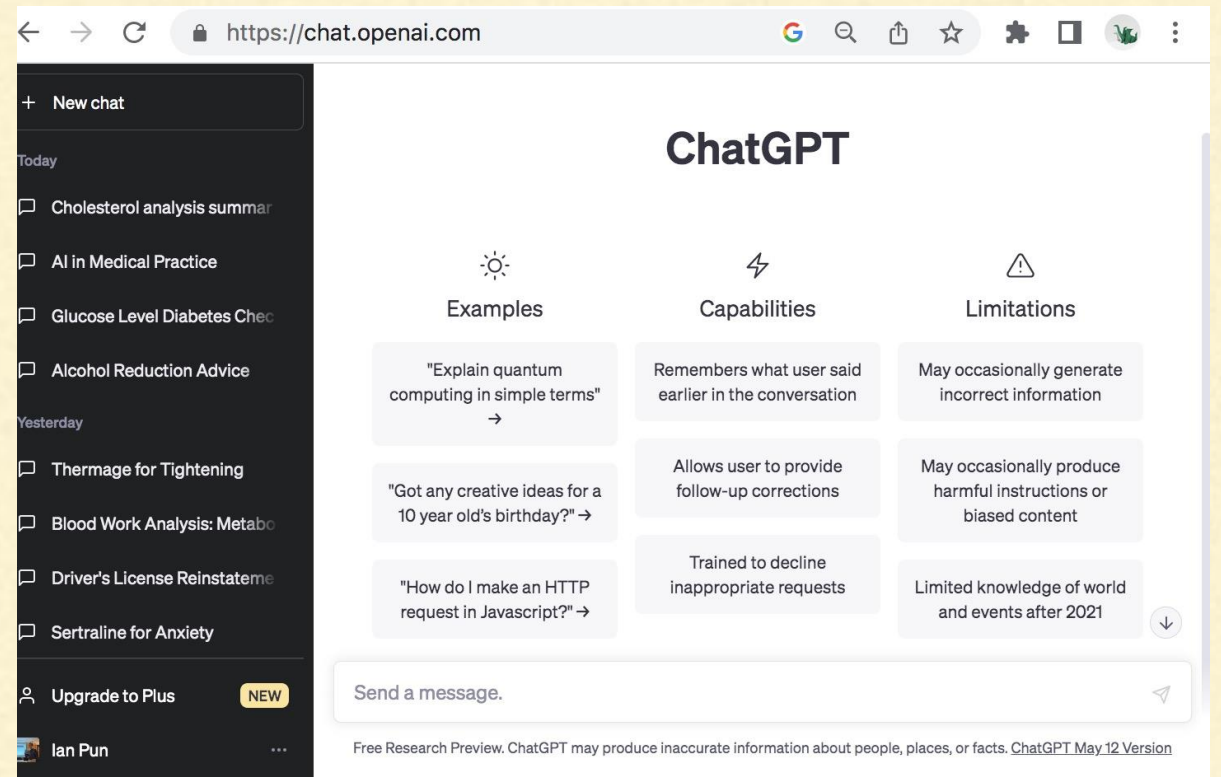
1. chatGPT Prompting
2. Sample Medical Workflow
Use case Prompts
3. Limitations of ChatGPT



AI Generated Image “The Matrix Doctor”

WHAT IS CHATGPT?

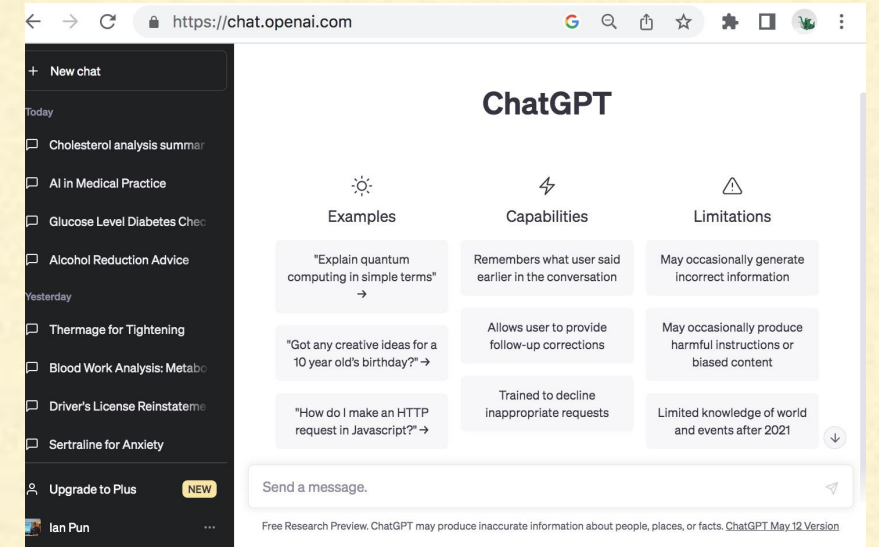
- ChatGPT is a Generative AI chatbot powered by a LARGE LANGUAGE MODEL trained on text of the entire public internet.
- Ask it anything
- Answers in a text response
- Comment, correct, ask it more



PROMPT RECIPE

chat.openai.com

1. Give some medical context (I am a doctor)
2. Command or Ask Question
3. Give some data
4. Go to 2.



EXAMPLE:

I am a doctor. please explain the lab results: Hb 90, Hct 27%, MCV 80 fL

USE CASE: Lab Analysis



I am a doctor. please explain the following lab results: Hb 90, Hct 27%, MCV 80 fL



Your patient's lab results indicate anemia, which is a condition characterized by a decreased number of red blood cells or a decreased amount of hemoglobin, the oxygen-carrying protein in red blood cells.



The hemoglobin level (Hb) is 90 g/L (the reference range for adults is approximately 120-160 g/L for women and 140-180 g/L for men). This indicates that the concentration of hemoglobin in the blood is low.

Hematocrit (Hct) is the volume percentage of red blood cells in blood. A normal range is around 38-46% for women and 40-54% for men. The value of 27% given here is below the normal range.

CONTINUE.....

hematocrit (Hct) is the volume percentage of red blood cells in blood. A normal range is around 38-46% for women and 40-54% for men. The value of 27% given here is below the normal range. CONTINUED ANSWER.....

The mean corpuscular volume (MCV) measures the average size of the red blood cells. A normal range is about 80-96 femtoliters (fL). The MCV of 80 fL is at the lower end of the normal range.

ChatGPT 4.0 knows subtleties

This constellation of results (low Hb, low Hct, and low-normal MCV) suggests a condition known as microcytic anemia, although the MCV is still within normal limits, it's towards the lower end. In microcytic anemia, the red blood cells are smaller than normal, and common causes include iron deficiency, thalassemia, and some other conditions. However, a full diagnosis would require more detailed examination and history, and possibly further tests.

 Regenerate response

Tip: go to your EMR to copy/paste you lab results into ChatGPT but don't copy PHI

| CHEMISTRY | | | | | |
|--|--------|-----|-----------------|----------------|---------------------|
| Test Name(s) | Result | Abn | Reference Range | Units | Date/Time Completed |
| CREATININE | | | | | |
| <u>CREATININE</u> | 57 | L | 60 - 110.00 | umol/L | 2023-02-18 21:56:00 |
| <u>eGFR</u> | 109 | N | 60 - 99999.99 | mL/min/1.73m*2 | 2023-02-18 21:56:00 |
| eGFR is calculated using the CKD-EPI 2009 equation. | | | | | |
| Normal eGFR. For patients of African descent, the reported eGFR must be multiplied by 1.15. | | | | | |
| URATE | | | | | |
| <u>URATE</u> | 296 | N | 220 - 512.00 | umol/L | 2023-02-18 21:56:00 |
| The target for treatment of gout is a serum urate level < 360 umol/L (minimum). Lower serum concentrations may be required for alleviation of symptoms. [Arthritis Care Research 64 (2012) 1431-1446] | | | | | |
| <u>HOURS FASTING</u> | 12 | N | | hrs | 2023-02-18 21:56:00 |
| <u>CHOLESTEROL</u> | 6.09 | H | <= 5.19 | mmol/L | 2023-02-18 21:56:00 |
| <u>TRIGLYCERIDES</u> | 0.92 | N | <= 1.69 | mmol/L | 2023-02-18 21:56:00 |
| <u>HDL CHOLESTEROL</u> | 1.88 | N | 1 - 99999.00 | mmol/L | 2023-02-18 21:56:00 |
| <u>LDL CHOLESTEROL CALC.</u> | 3.79 | N | | mmol/L | 2023-02-18 21:56:00 |
| NON-HDL-CHOLESTEROL(CALC) | | | | | |
| <u>NON-HDL-CHOLESTEROL(CALC)</u> | 4.21 | N | - 4.29 | mmol/L | 2023-02-18 21:56:00 |
| Non HDL-cholesterol is calculated from total cholesterol and HDL-cholesterol and is not affected by the fasting status of the patient. | | | | | |
| Treatment thresholds and targets based on 2016 CCS guidelines: | | | | | |
| :Categoryv :Consider initiating therapy if :Treatment target : | | | | | |

← → ↺ https://chat.openai.com

New chat

Today

Cholesterol analysis summar

AI in Medical Practice

Glucose Level Diabetes Chec

Alcohol Reduction Advice

Yesterday

Thermage for Tightening

Blood Work Analysis: Metabo

Driver's License Reinstateme

Sertraline for Anxiety

Upgrade to Plus

NEW

Ian Pun

ChatGPT

Examples

"Explain quantum computing in simple terms" →

"Got any creative ideas for a 10 year old's birthday?" →

"How do I make an HTTP request in Javascript?" →

Capabilities

Remembers what user said earlier in the conversation

Allows user to provide follow-up corrections

Trained to decline inappropriate requests

May occasionally generate incorrect information

May occasionally produce harmful instructions or biased content

Limited knowledge of world and events after 2021

Send a message.

↗

Free Research Preview. ChatGPT may produce inaccurate information about people, places, or facts. ChatGPT May 12 Version



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USE CASE: Take History



I am a doctor: Questions to ask patient presenting with stomach pain



Here are some potential questions to help you further investigate your patient's stomach pain:



1. Could you describe the pain? Is it sharp, dull, cramping, burning, or something else?
2. Where exactly do you feel the pain? Can you point it out?
3. When did the pain start?
4. Does the pain come and go or is it constant?
5. Have you noticed any patterns? Does it get worse or better with meals, certain types of food, movement, or certain times of the day?
6. On a scale of 1 to 10, how severe would you rate the pain?
7. Are you experiencing any other symptoms like nausea, vomiting, fever, diarrhea, or weight loss?

USE CASE: Summarize History



Can you summarize the patient history?

I answer the previous questions
and feed it back to ChatGPT




Certainly! Here's a summary of the patient's history:




- The patient has been experiencing stomach pain for the past 4 months, which has been intermittent in nature.
- The pain is described as crampy and localized to the epigastrium (upper central abdomen).
- The pain is relieved with meals.
- There are no significant changes in bowel movements, no vomiting or nausea, and no unintended weight loss.
- The patient has a normal appetite and no dietary preferences or restrictions.
- There are no previous gastrointestinal diagnoses or abdominal surgeries.
- The patient is not currently taking any medications or supplements.
- There is a family history of stomach cancer in the patient's mother (70 years old) and

USE CASE: Clinical Diagnosis Help



I am a doctor . I have a 21 year old woman who presents with right lower quadrant abdominal pain . What differential diagnosis? 



Right lower quadrant (RLQ) pain in a young woman can be caused by a variety of conditions. Here are some possibilities that you might consider, depending on the clinical presentation: 

1. **Appendicitis:** This is one of the most common causes of severe RLQ pain. Associated symptoms may include nausea, vomiting, loss of appetite, and fever.
2. **Ovarian cyst:** These can sometimes cause RLQ pain, particularly if a cyst ruptures or causes the ovary to twist (known as ovarian torsion). Other symptoms might include bloating, irregular periods, and painful intercourse.
3. **Ectopic pregnancy:** This is a medical emergency and must be ruled out in sexually active women presenting with RLQ pain. It's often associated with a missed period and can cause light vaginal bleeding.

USE CASE: Clinical Decision Making



Question: is an incomplete treatment of H. pylori is 11 days enough?



Patient is experiencing vomiting and fatigue due to Pepto Bismol and has a rash on the face and feels tired and d/c 'ed at 11 days



The standard treatment duration for H. pylori eradication therapy is 14 days, although shorter durations of 10 to 11 days have been used with some success in some studies. However, the effectiveness of a shorter treatment course may depend on several factors, including the severity of the infection, the patient's compliance with the treatment regimen, and the antibiotic resistance patterns of the H. pylori strain.





FACT CHECK! SPECIALIST E-CONSULT AGREES

eConsult

Schedule



Dr D [redacted] provided consult

May 08, 2023 12:13 PM

Dear Dr. Pun,

Regenerate response

Thank you for the referral. The rash seems subtle, but given the other symptoms, I think we need to assume that it is a medication reaction. Shorter courses of treatment for H pylori have been used, but are associated with higher relapse rates. I think it's reasonable to consider this a completed treatment course, but I would suggest repeating a UBT in 4-6 weeks to confirm eradication. If she is still positive, there are other regimens that can be trialed, but I'm not convinced they have less side effects. For instance, you could try rifabutin triple therapy with rifabutin, amoxicillin and PPI BID.

USE CASE: Patient Counselling



I am a doctor: List the contraceptive options for woman age 30



As a doctor, there are several contraceptive options available for women aged 30. The choice of contraceptive method depends on various factors such as the woman's overall health, medical history, lifestyle, and personal preferences. Here are some commonly used contraceptive options:



1. Combination Oral Contraceptives (COCs): These are commonly known as birth control pills and contain a combination of estrogen and progestin hormones. They are highly effective when taken correctly.
2. Progestin-Only Pills (Mini-pills): These pills contain only progestin and are suitable for

Chrome File Edit

Facebook

sdiffusion off dict

+ New chat

Previous 7 Days

- Vowel's Next Letter
- Attapulgit: Undefined Substan
- Triphasic Abdomen CT
- Barotrauma Prevention Tips
- New chat
- MI Medications for Recurrence
- Repatha for high cholesterol.
- Aspirin not recommended.
- Osteoporosis treatment option
- ANA+ and Numbness

Help & FAQ

Clear conversations

Settings

Log out

Ian Pun

Case_432491262.pdf

Settings

TIP! SAVE YOUR CHATS! x



General



Data controls

Chat History & Training



Save new chats to your history and allow them to be used to improve ChatGPT via model training. Unsaved chats will be deleted from our systems within 30 days.

[Learn more](#)

Export data

Export

Delete account

Delete

SAVING YOUR CHATS to your COMPUTER



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USE CASE: Extract list of meds for renew

pharmacy renewal fax
OCR'ed and copypasted into chatGPT

| | | | | | | | |
|-----------------------------------|--------------|---|-------------|------------|------------|--------------|---|
| Last Filled Apr 11, 2023 | Rx # 93 | Drug / Strength SDZ-METFORMIN FG 500MG | Form TAB | Mfr SDZ | Days 30 | Qty 60.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 TABLET TWICE DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 91 | Drug / Strength ZYLOPRIM 200MG | Form TAB | Mfr APP | Days 30 | Qty 30.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 TABLET DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 934 | Drug / Strength APO-EZETIMIBE 10MG | Form TAB | Mfr APX | Days 30 | Qty 30.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 TABLET DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 91 | Drug / Strength TEVA-PANTOPRAZ. MAGNESIUM 40MG | Form TAB | Mfr TEV | Days 30 | Qty 30.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 TABLET DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 91 7 | Drug / Strength PMS-TELMISARTAN 40MG | Form TAB | Mfr PMS | Days 30 | Qty 30.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 TABLET DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 91 | Drug / Strength APO-DUTASTERIDE 0.5MG | Form CAP | Mfr APX | Days 30 | Qty 30.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 1 CAPSULE ONCE DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 93 | Drug / Strength APO-TERAZOSIN 2MG | Form TAB | Mfr APX | Days 30 | Qty 60.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| TAKE 2 TABLETS DAILY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 91 | Drug / Strength QZEMPIC PREF PEN INJ 1.34MG/ML | Form SOL | Mfr NOO | Days 30 | Qty 1.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| GIVE 1 MG WEEKLY | | | | | | | |
| Last Filled Apr 11, 2023 | Rx # 93 | Drug / Strength REPATHA SC AUTO INJ 140MG/ML | Form SOL | Mfr AMG | Days 30 | Qty 2.00 | Authorize-RX YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| AS DIRECTED | | | | | | | |
| NOTES From The Pharmacist: | | | | | | | |

⚡ Model: Default (GPT-3.5)



extract drugs and dosages, with each one on separate line followed by line return: Last Filled RX # Apr 11, 2023 9

'TAKE 1 TABLET TWICE DAILY

Drug / Strength SDZ-METFORMIN FG 500MG

Form Mfr TAB SDZ

Form Mfr TAB APP

Form Mfr TAB APX



Here are the extracted drugs and dosages, each on a separate line followed by a line

DZ-METFORMIN FG 500MG

ZYLOPRIM 200MG

APO-EZETIMIBE 10MG

TEVA-PANTOPRAZ. MAGNESIUM 40MG

AMS-TELMISARTAN 40MG


APO-DUTASTERIDE 0.5MG

APO-TERAZOSIN 2MG

QZEMPIC PREF PEN INJ 1.34MG/ML

USE CASE: Medicolegal Report Writing

⚡ Model: Default (GPT-3.5)

< 2/2 >  Write an email to lawyer that this medical chart requested is enclosed . thank you for payment



Subject: Medical Chart Enclosed - Thank You for Payment



Dear [Lawyer's Name],

I hope this email finds you well. I am writing to inform you that the requested medical chart is enclosed with this message. Additionally, I would like to express my gratitude for the prompt payment regarding our services.

Enclosed with this email, you will find the complete medical chart for [Patient's Name]. The chart includes all relevant medical records, test results, and treatment documentation, which

USE CASE: Medical Report Letter to Ministry



WRITE a letter to ministry of transportation about my patient 35 year old male, who has attended alcohol counselling and psychotherapy . He is sober and abstinent from alcohol for more than six months.



Subject: Request for Consideration - Driver's License Restoration for [Patient's Name]



Dear Sir/Madam,

I am writing to bring to your attention the case of my patient, [Patient's Name], a 35-year-old male who has made significant progress in his journey towards sobriety and alcohol rehabilitation. As a healthcare professional, I believe it is crucial to advocate for his right to regain his driver's license, as his commitment to recovery and abstinence from alcohol has been unwavering for over six months.

ADVANCED USE CASE: Write queries to datamine EMR



with the above query , the most recent entry of each type = "LDL" must also have dataField > 5.

CHATGPT 4.0 is incredible at writing basic apps and queries!



To modify the previous query to only return the most recent entry of each type = "LDL" that also has dataField > 5, you can add an additional condition in the subquery:

sql

 Copy code

```
SELECT *
FROM measurements m1
WHERE type = 'LDL' AND dataField > 5 AND dateEntered = (
    SELECT MAX(dateEntered)
    FROM measurements m2
    WHERE m1.demographicNo = m2.demographicNo AND m2.type = 'LDL' AND m2.dataField > 5)
```

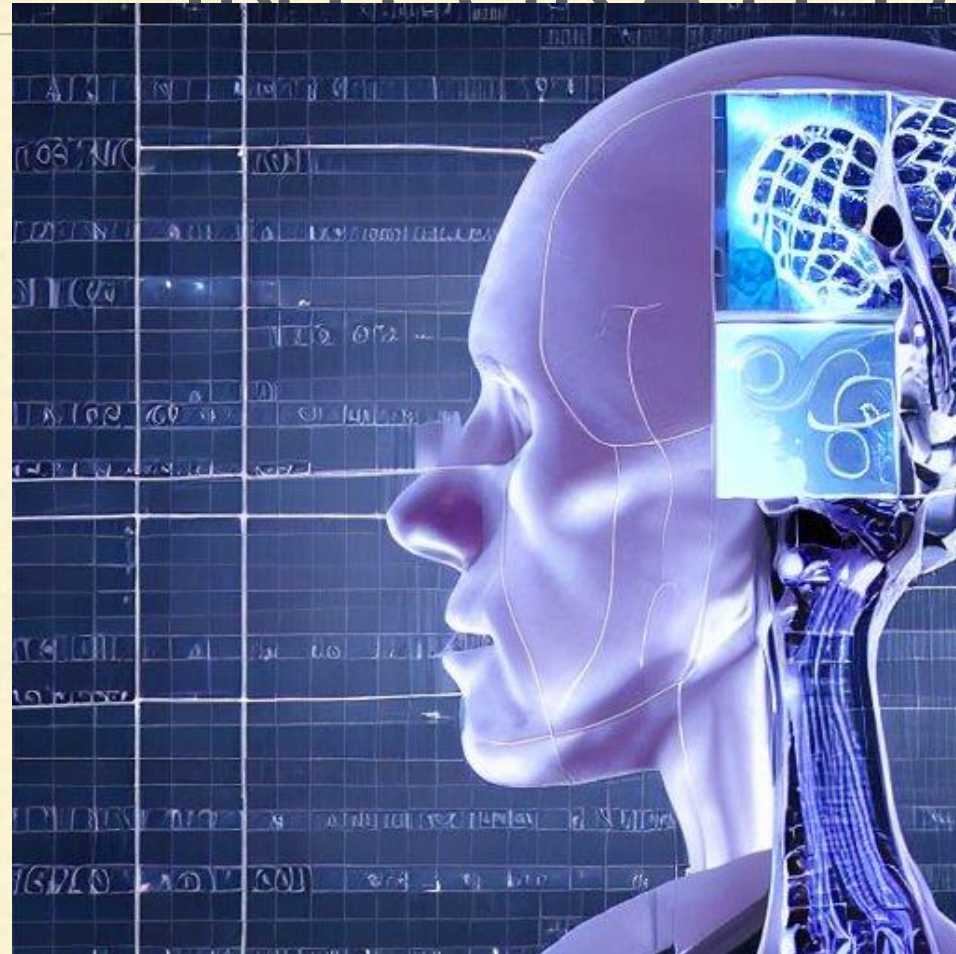
LIMITATIONS OF CHATGPT

- Lack of advanced Medical Judgment, Physical Exam and Clinical Experience (human expert will be more insightful)
- Trained until 2021, not up to date (e.g. Omicron COVID)
- can misinterpret context (provide correct prompt)
- privacy concerns (don't copy PHI into it)
- bias, hallucinations, misinformation, bad at advanced math (but I notice chatGPT 4 corrects issues in chatGPT 3.5)

AUGMENT NOT REPLACE THE MD!

LLM IS REVOLUTIONARY EVOLVING AND IMPROVING AND WILL BE INTEGRATED

Summarize
Analyze
Create
Continue
Regenerate



Many companies have LLM

Open source models
are quickly catching up

e.g. Facebook LLaMA

<https://chat.lmsys.org/>

<https://www.assemblyai.com/blog/introduction-large-language-models-generative-ai/>

DR. JEFF HINTON, TURING AWARD WINNER AND GODFATHER OF AI



photo: copyright University of Toronto

“In medicine, it’s even more obvious of the what goods [in AI] gonna to be. We’re gonna get much better family doctors who know much more.”

<https://www.youtube.com/watch?v=rLG68k2bIOc>

@20:19

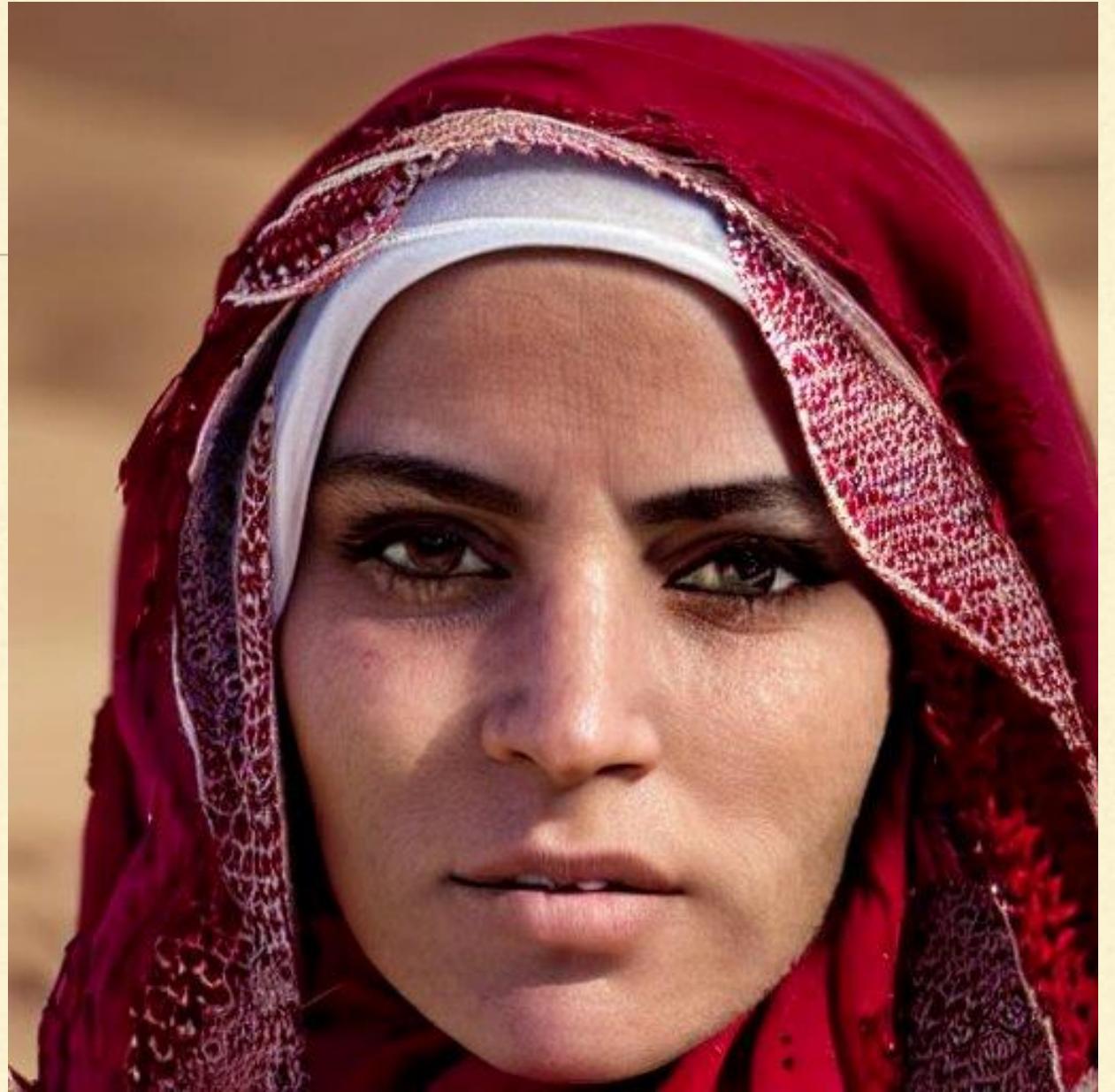


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FINAL PROMPT:

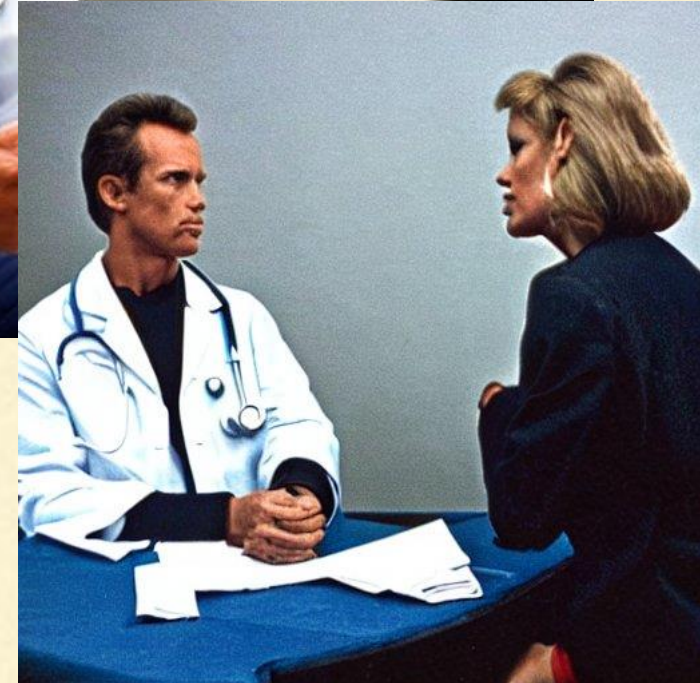
I am a primary care physician. Generate ways a family physician would ask ChatGPT to increase efficiency , improve patient care and reduce own burnt out..

Thank you!



Stable Diffusion generated image

CONTROL THE AI !
THANK YOU!



Stable Diffusion AI generated prompt “The Terminator using EMR to treat patients”

DOESN'T KNOW ABOUT OMICRON COVID



What about omicron COVID variant?



I apologize for the confusion in my previous response. As of my knowledge cutoff in September 2021, the Omicron variant had not yet emerged, as it was first identified in late November 2021. Therefore, I can provide you with information about the Omicron variant based on the available knowledge up until September 2021.



The Omicron variant is a variant of the SARS-CoV-2 virus, which causes COVID-19. It was first identified in South Africa and has since been detected in several other countries. However, it is important to note that my information is not up to date, and the situation may have evolved significantly since then.

Omicron is of concern because it carries a large number of mutations, particularly in the

OCFP Advocacy Update

(as of May 26, 2023)

- You told the OCFP that you want our support in advocating to the Ontario Medical Association (OMA) and Section of General & Family Practice (SGFP) on compensation issues in the next Physician Services Agreement, OMA Negotiations Task Force.
- We heard you and acted by convening a working group and submitting recommendations including:
 - Increase compensation for all family doctors, including increased compensation relative to other physicians.
 - Introduce compensation for unpaid administrative work.
 - Introduce improved compensation to reflect the additional work of caring for patients with social and medical complexities.
- Our next opportunity to engage in the process is in June when we meet with the OMA to present our submission.
- **Deadline today:** OCFP encourages family doctors to take the SGFP Payment Reform Working Group survey to share ideas and priorities. https://insights.oma.org/c/r/2023_SGFP_Negotiations_Priorities_Survey

Expressions of Interest for Interprofessional Primary Care Teams – Update

(as of May 26, 2023)

- All information regarding the Expression of Interest can be found on the Ontario Health website [Funding Opportunities for Primary Care | Ontario Health](#).
- Ontario Health is offering support through designated regional contacts. Contact information is available on their website [Funding Opportunities for Primary Care | Ontario Health](#).
- The OCFP shared [important information](#) from the Ministry of Health and Ontario Health on May 11, 2023. We also have created an [Expression of Interest page](#) to support you.
- The ministry and Ontario Health Hosted a technical webinar on May 18, 2023. We will share the link to the recording when it is available.

Questions?

Webinar recording and curated Q&A will be posted soon

<https://www.dfcm.utoronto.ca/covid-19-community-practice/past-sessions>

Our next Community of Practice: June 16, 2023

Contact us: ocfpcme@ocfp.on.ca

Visit: <https://www.ontariofamilyphysicians.ca/tools-resources/covid-19-resources>

The COVID-19 Community of Practice for Ontario Family Physicians is a one-credit-per-hour Group Learning program that has been certified for up to a total of 32 credits..

Post session survey will be emailed to you. Mainpro+ credits will be entered for you with the information you provided during registration.