



Measlesgate!

A Case Study in Leveraging Your EMR to Protect Your
Patients and Staff

Allan Grill MD, CCFP, MPH (Lead Physician)

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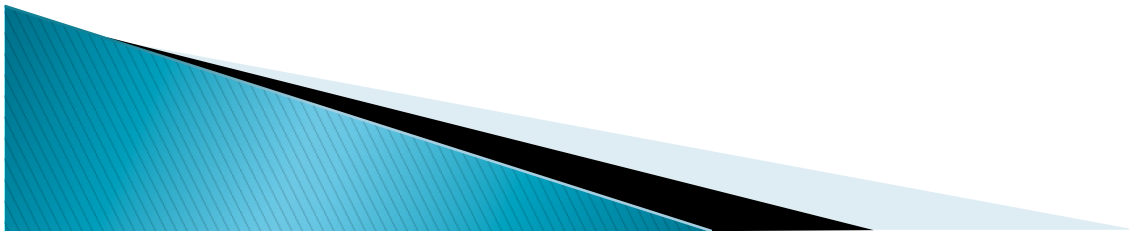
Markham FHT

Thursday, October 29, 2015; 9:30-10:15

AFHTO Annual Conference

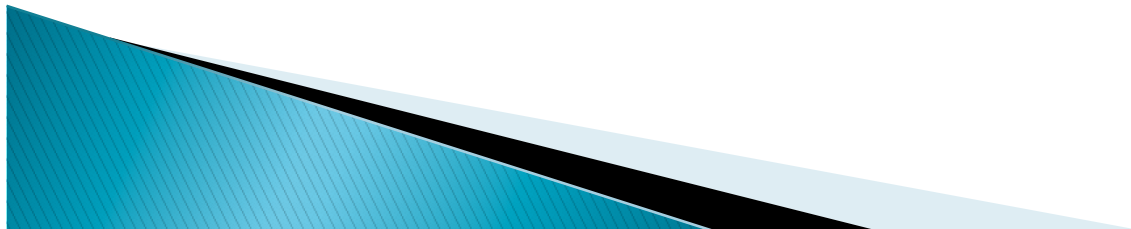
Presenter Disclosure

- **Presenters:** Lisa Ruddy RN (Markham FHT)
- **Relationships with commercial interests:**
 - **Grants/Research Support:** none
 - **Speakers Bureau/Honoraria:** none
 - **Consulting Fees:** none
 - **Other:** none



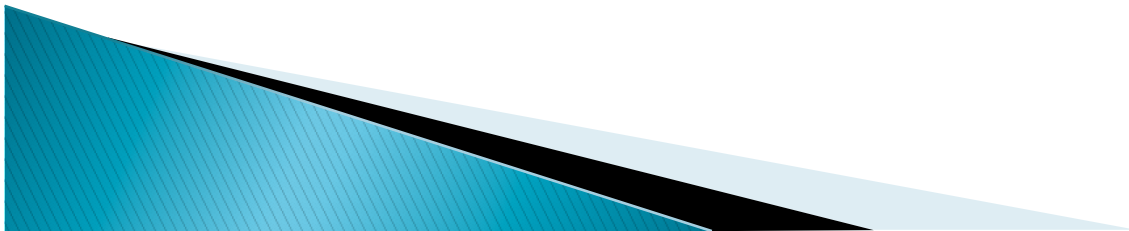
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 - Humber River Regional Hospital, Lakeridge Health
 - ***Consulting Fees***
 - Ontario Renal Network
 - Ontario MOHLTC Committee to Evaluate Drugs
 - Pan-Canadian Oncology Drug Review Expert Review Committee
 - ***Other***
 - Hospital privileges at Markham Stouffville Hospital, Markham, ON & Sunnybrook Health Sciences Centre, Toronto, ON
 - AFHTO Board member



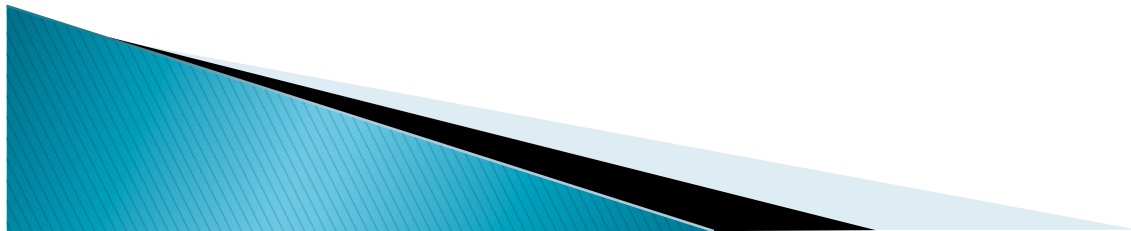
Disclosure of Commercial Support

- **This program has not received any financial support from an external organization**
- **This program has not received in-kind support from an external organization**



Objectives

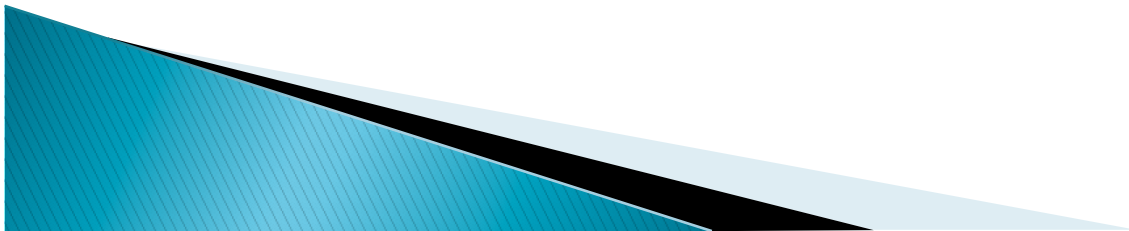
- ▶ Review the clinical signs and symptoms associated with Measles and the challenges associated with making the diagnosis.
- ▶ Emphasize the importance of collaboration with local public health for contact tracing after an office measles exposure.
- ▶ Discuss the subsequent recommendations by the Markham FHT Occupational Health & Safety Committee to collect immunity data on staff and providers with respect to vaccine preventable diseases (e.g. MMR, varicella, Hep B).



Case: Not Feeling Well

► January 26/15

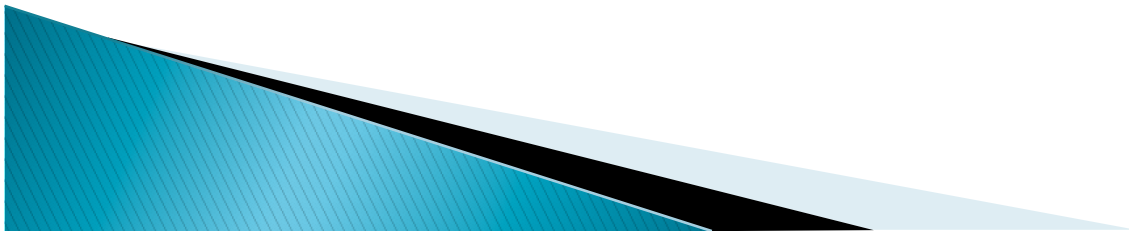
- 24 y.o. male, unremarkable PMHx.
- Assessed by Dr. Available (on-call)
- Presents with 48 hrs. of chills, fever, h/a, myalgia, fatigue
- Denied cough, sore throat
- O/E: temperature - 38.4
- Dx: viral URTI
- Tx: supportive; f/u prn



The Next Day

► January 27/15

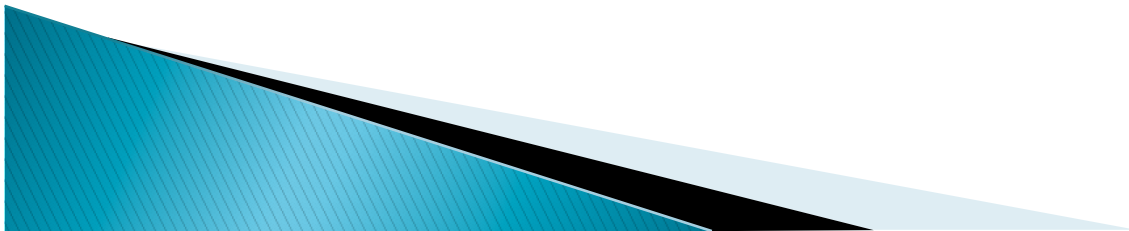
- Returns to clinic with ongoing fever
- Now reports sore throat
- Assessed by own family physician
- O/E: temperature 39.0. Throat: erythematous
- Dx: ? Strep throat/pharyngitis
- Tx: throat C&S sent; Rx for Penicillin given; f/u prn



ER Visit

► January 28/15

- Presents to the ER given new onset of rash
- Rash located on face/trunk/limbs; not itchy
- ? Due to Penicillin allergy
- Also developed a cough
- Lumbar puncture done to r/o meningitis – negative result
- Bloodwork, urine tests all negative (including Mono)
- Throat swab done at MFHT negative (consider rapid strep testing)
- Admitted due to dehydration x 2 days
- Discharge Dx: viral pharyngitis
- Tx: supportive



It's a small world after all....

thestar.com
WORLD

News / World

Unvaccinated urged to avoid Disneyland as measles outbreak hits 70 cases

New infections linked to the theme parks emerged Wednesday in the outbreak that has spread to five U.S. states and Mexico.

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H. LORREN AU JR. / AP FILE PHOTO

New infections linked to the Disney theme parks emerged Wednesday in the outbreak that has spread to five U.S. states and Mexico.

By: Alicia Chang Associated Press, Published on Thu Jan 22 2015

LOS ANGELES — Seventy people have been infected in a measles outbreak that led California public health officials to urge those who haven't been vaccinated against the disease, including children too young to be immunized, should avoid Disney parks where the spread originated.

January 22, 2015

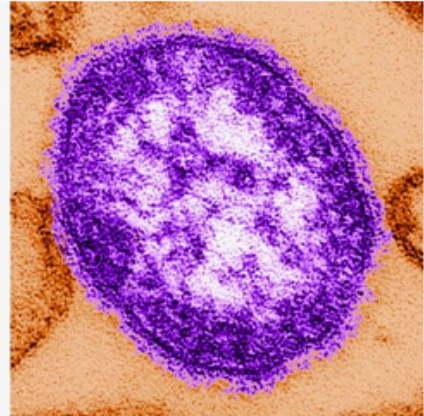
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News / GTA

Four measles cases confirmed in Toronto, no known link or source case

Two adults and two children have fallen ill in four separate cases, according to Toronto Public Health.

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CYNTHIA GOLDSMITH / THE CANADIAN PRESS

A measles virus is seen through an electron micrograph in a file photo. Toronto Public Health has reported four cases of measles in two young children and two adults.

By: Katrina Clarke Staff Reporter, Published on Mon Feb 02 2015

Public health officials are urging Torontonians to check their vaccination records after a measles outbreak with no known link between victims hit the city Monday.

Lab tests confirmed four people, including two children under the age of 2 and two adults, are infected with the potentially deadly disease, Toronto Public Health announced. One was hospitalized, but officials would not release other health or personal details, citing privacy reasons.

February 2, 2015

3rd time's a charm

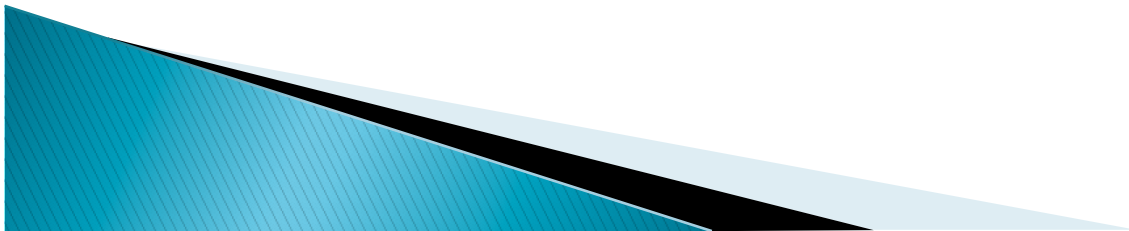
► February 2/15

- Arranges f/u with own family physician given recent hospitalization
- Still reports feeling weak; decreased energy
- O/E: afebrile; VSS. Skin: maculopapular rash seen on face/neck/limbs/trunk
- Dx: viral URTI
- Tx: supportive; but Measles IgM & IgG serology ordered.



Lab results

- ▶ February 3/15
 - IgG result reactive; IgM result “low” reactive
 - Public health report: recommend PCR testing to confirm
 - NP swab if within 7 days of rash onset
 - Urine sample if within 14 days of rash onset
- ▶ February 8/15
 - Urine test + for Measles



Measles: The 411

- ▶ Also known as Rubeola or Red Measles
- ▶ Highly infectious virus – respiratory droplets
- ▶ Febrile illness: “3 Cs” – cough/coryza/conjunctivitis
- ▶ Maculopapular rash – starts on face and spreads
- ▶ Incubation period 7-18 days; infectious up to 4 days after rash appears
- ▶ Complications: encephalitis, pneumonia
- ▶ Treatment is supportive
- ▶ Prevention is key – get immunized (MMR, MMRV)



Bad News (& Measles) Travels Fast

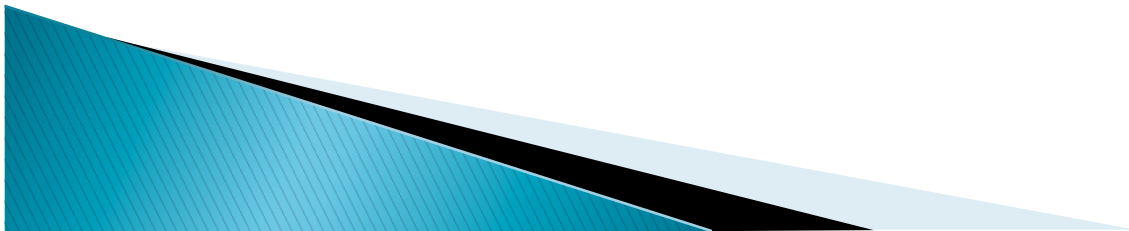
Ontario measles outbreak reaches 11 cases; cluster in Quebec linked to Disneyland

Niagara Medical Officer of Health Valerie Jaeger says the measles vaccine is safe and effective, and recommends bringing the whole family's shots up to date

Adam Miller, The Canadian Press

February 14, 2015

TORONTO – Three new cases of measles have been confirmed in Ontario, health officials said Saturday.



Facebook post: 186,000 shares



If you have chosen to not vaccinate yourself or your child, I blame you.

What we've learned so far...

- ▶ Measles is a challenging diagnosis to make
 - Rare
 - Mimics other more common infections
- ▶ Managing an office exposure associated with Measles is a whole different story

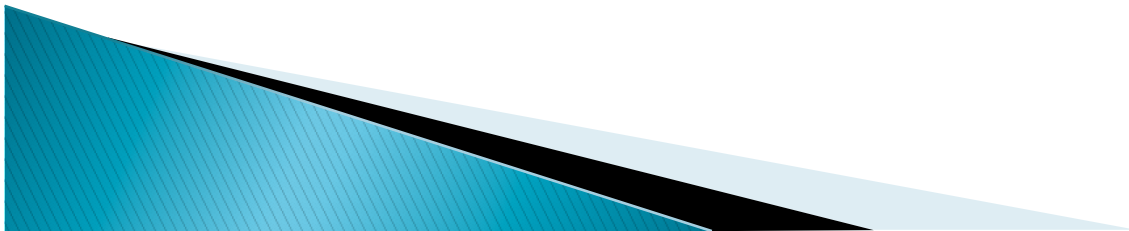


Measlesgate

Why “Measlesgate”?

Rather than implying “political scandal”, MFHT refers to this time in February as “Measlesgate” to recall our rapid response to a profoundly public crisis

“Measlesgate” also signifies a time of intense collaboration, constant communication, and adherence to best practice



Monday Feb 9 2015

Public Health (PH) calls to confirm a positive measles result on a patient assessed in our office (Jan 26 and 27)

Asks for a list of patients who were in our Church St location Jan 26 0930-1300, and Jan 27 1300-1630

Lead Physician, ED, attending physician advised of + measles exposure and immediate pt data request by PH

IT Manager and Clinical Program Manager (CPM) liaise to build EMR query

Markham FHT faxes list to PH; names, date of birth, phone number

All staff and providers notified via EMR message and email of positive measles case

IT Manager and CPM determine which staff and providers were at the Church St location during exposure times

PH begins calling parents of patients under age 1y seen in the Church St office during exposure times

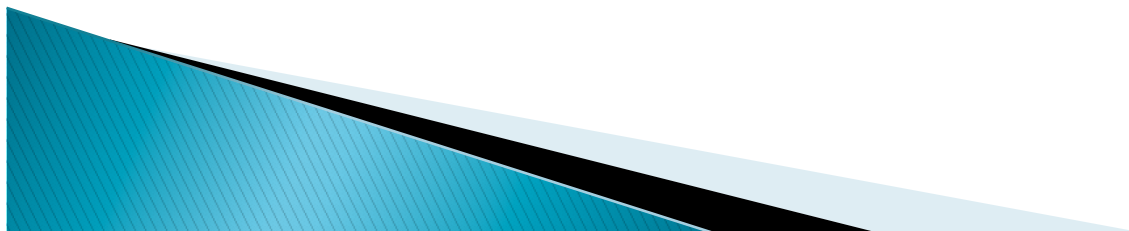
Markham FHT gets first phone call from parent receiving a call from PH

0900

1200

1300

1600



What worked? What could have gone better?

- ▶ EMR feature of “Arriving “ a patient indicated the patient was actually in the office that day
- ▶ EMR feature of “No-Showing” a patient indicated who did not come to the office for their appointment

High five

- ▶ IT Manager was not advised of the location the provider saw pts on Jan 27, and the report had to be re-run
- ▶ PH and Markham FHT should have been clear on what message the patients would be getting by phone

....close....

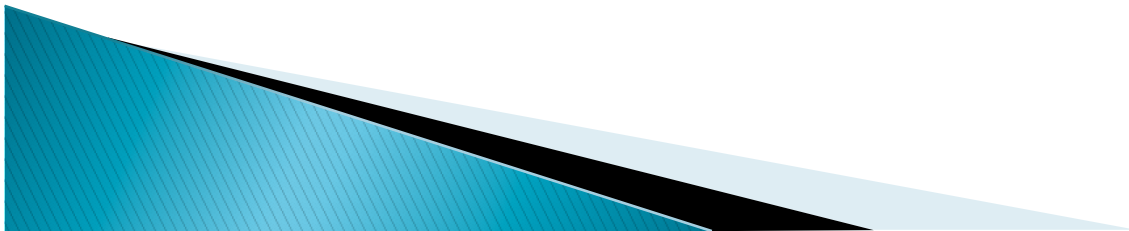
Tuesday Feb 10

0930

- PH arrives at Markham FHT; downloads patient contact list from CPM's computer onto an encrypted stick (141 pts)
- PH advises CPM all exposed staff need to confirm dates of 2 MMR vaccines (admin staff, IHP's, physicians) 33 staff
- PH begins calling parents of pts age 1-5y, advising them of exposure and recommendation to come in to office and get 2nd MMR asap

1300

- Markham FHT posts own letter to pts on website



What worked? What could have gone better?

- ▶ Contact list given to PH contained pt names, addresses, phone numbers, date of birth, date and time of appointment, name of provider seen
- ▶ EMR search of vaccine dates optimized due to diligent data entry

High five

- ▶ Direct line between PH and CPM
- ▶ Rapid response by physician executive to assist with pt communication and management
- ▶ Constant communication with Lead MD
- ▶ Alliance with PH messaging

And another

“Black Wednesday” Feb 11 2015



February 10 · 🌐

This is my son Griffin, and he may have measles.

On February 9th, I received a phone call from York Region Public Health, informing me that Griffin, alongside my mother and I, was potentially exposed to the measles virus while attending a newborn weigh-in appointment at my doctor's office in Markham on January 27th.

Griffin was 15 days old at the time.... [See More](#)

Share

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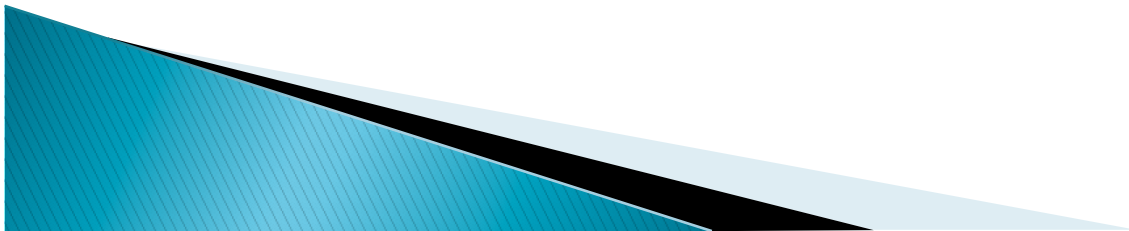
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Wednesday Feb 11 2015

1030

- PH calls to arrange STAT serology on any exposed staff members; unique lab processing code and courier arranged by PH
- All exposed staff were required to go immediately for blood work, then sent home and off work until the lab confirmed immunity to measles, or the incubation period passes
- Courier to arrive at LifeLabs at *1300 the same day*



How we made it work

Why a Family Health Team and an EMR work:

1. 2 MD's and an NP created 20 lab requisitions within a matter of minutes
2. "Bullpen" set up allowed for meeting space and immediate collaboration
3. Admin staff created "patients" in the EMR for staff so that they could get stat serology done
4. Admin staff at other site began calling patients and booking off exposed providers
5. Remaining physicians took on patient load of those who could not be cancelled/rebooked
6. IT Manager "bundled" the lab requisition with the PH requisition and populated the stat outbreak code in the comments field



— STAT MEASLES —

OUTBREAK # 2270 2015 OSI

STAT MEASLES IMMUNITY

— DISCUSSED WITH ERIK —

1 staff

staff used

24h time

Public Health

(STAT)

Outbreak

CAPs

73545

for

after

for







....some miscommunication....

Thursday Feb 12 2015

22 staff off work – 6 physicians, 8 IHP's, 8 admin

...because they could not prove immunity to measles; missed between 2-6 days of work

7 staff were able to prove immunity (serology or 2 MMR)
and remained able to work

All FHT staff encouraged to have serology done

Results begin returning:

- 3 non-reactive measles
- 3 non-reactive mumps
- 2 non-reactive rubella



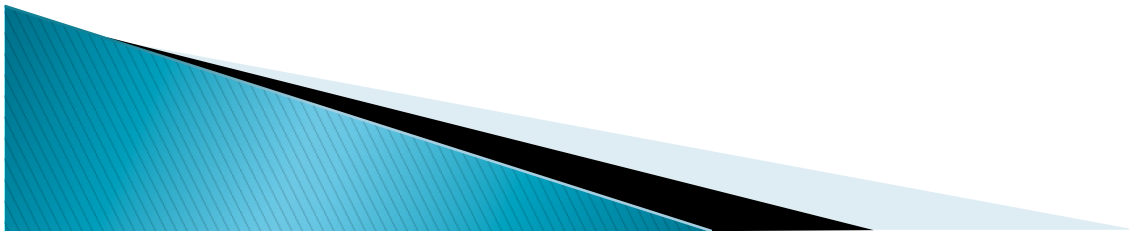
Lessons learned

1. Excellent work relationship between providers, staff and leadership quite simply “Made. This. Work.”
2. Markham FHT culture of “EMR excellence” major contributor to success of quick response
3. FHT’s Health and Safety Committee already had infection prevention and control measures in place (Fever = Mask; Cough = Mask)
4. Staff knowing immune status is necessary in order to keep the practice safe and operating
5. Close partnership with PH essential



How did the EMR get us through Measlesgate?

- ▶ Correct data entry in the appropriate fields (Name, DOB, phone number, address)
- ▶ Features that signal the patient “arrived” for appointment, or was a “no show”
- ▶ Accurate recording of patients’ vaccines
- ▶ Ability to “bundle” 2 lab requisitions made it easier to order serology; specific fields auto-populated



Lab requisition bundle

Lab Req - MMR Immunity Bundle

+

39

Notes

No Matches

Forms

Cytology & HPV Testing - LifeLabs (Routine)

General_test_fillable_requisition

Lab Req - All Blank

Lab Req - Anemia

Lab Req - Celiac

Lab Req - CHF

Lab Req - Dementia

Lab Req - DM q3m

Lab Req - FOBT CCC

Lab Req - INR

Lab Req - MMR Immunity Bundle

Lab Req - MSU

Lab Req - Osteoporosis

Lab Req - Prenatal

Lab Req - MMR Immunity Bundle

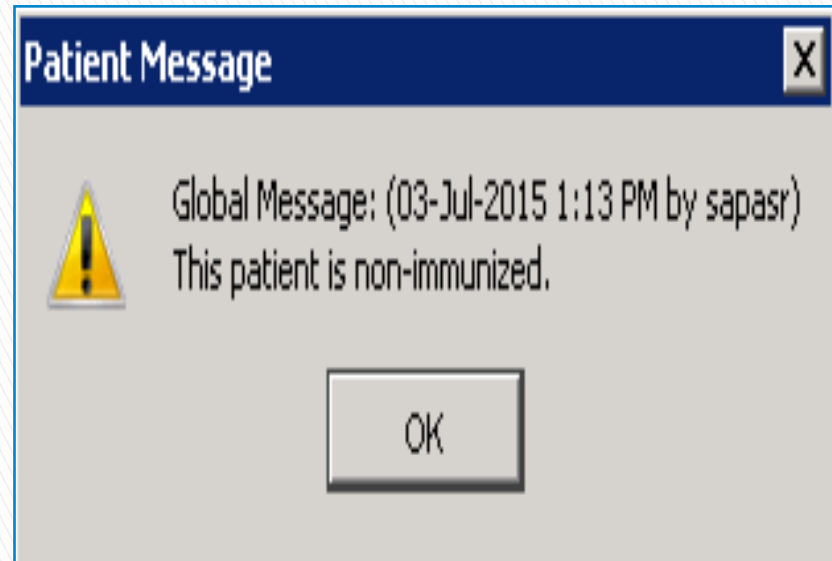
Pre-populated fields on lab req

Laboratory Requisition Requisitioning Clinician / Practitioner					
Name					
Address #101 - 377 Church St Markham ON L6B 1A1 T: (905) 471-9999 F: (905) 471-3627					
Clinician/Practitioner Number		CPSO / Registration No.		Health Number	
				Version Sex	
				F	
Check <input checked="" type="checkbox"/> One:		Province		Other Provincial Registration Number	
<input checked="" type="checkbox"/> OHIP/Insured <input type="checkbox"/> Third Party / Uninsured <input type="checkbox"/> WSIB				Patient's Telephone Contact Number	
Additional Clinical Information (e.g. diagnosis) STAT MEASLES IMMUNITY. DISCUSSED WITH ERIK. OUTBREAK #: 2270 2015 051		Patient's Last Name (as per OHIP Card)			
		Patient's First & Middle Names (as per OHIP Card)			
<input type="checkbox"/> Copy to: Clinician/Practitioner		Patient's Address (including Postal Code)			
Last Name First Name					
Address					
Note: Separate requisitions are required for cytology, histology / pathology and tests performed by Public Health Laboratory					
x Biochemistry		x Hematology		x Viral Hepatitis (check one only)	

How the EMR helps protect patients...

Markham FHT's "Guidelines and Protocols Advisory Committee" (GPAC) worked with the FHT's Health and Safety Committee to enable the easy identification of patients who are *not immunized*

New protocol on how to triage these patients presenting with febrile illness



Global "Pop Up" in Accuro

Use your EMR Communication features!!!

Patient: --None--

Priority: Urgent


Subject: UPDATE FROM PUBLIC HEALTH

An update from Public Health on MFHT pts with possible measles exposure Jan 26-27

Pts age < 5 years have been called by PH, and notified of possible exposure to measles. The instructions to those parents were:

- 1) Less than 12m old, observe for signs and symptoms of measles until Feb 16.
- 2) Children age 12m - 5y WHO ARE IN DAYCARE or SCHOOL, must have an MMR before they can return to daycare or school.

I am hopeful that with an "all hands on deck" approach, we won't have any problems accommodating a vaccine visit over the next few days for what is a very small cohort of patients. (13 children age 1-5y)

To MD's: I have a list of all the patients who were seen on the exposure days. Some MD's have opted to call their patients directly to let them know what has happened and what to expect, rather than waiting for PH to mail/call them. These lists will be put in your mailboxes today. If you do not get a list, that means your patients were not seen on those days (let's end the mystery now. 

For all staff, regardless of exposure.....

PH requires (for exposed staff, 25 of us) EITHER your 2 MMR vaccine dates OR proof of immunity via serology.

A recommendation was made to the MFP executive to facilitate FHT-wide serology testing for staff. This means, if you are unable to produce record of vaccines, we will arrange to get the required blood work requisition made for you. In the event any of us are found to be non-immune, an MMR can be given here at the office. I highly recommend this option, as there may be exposures to other communicable diseases in the future, and this may better prepare us for that.

Do any physicians want to volunteer to be on these lab reqs? Sharing the load among a few of you may be easier than having one MD sign off many results? Please let me know.

In Conclusion

- ▶ If you don't consider the diagnosis, you can't make the diagnosis
 - Although Measles is rare in Canada, cases still exist.
- ▶ As challenging as it is to identify a patient with Measles, it is even more challenging managing the secondary office exposures
 - Essential to develop a close relationship with local public health
 - Essential to have an office “champion”
- ▶ Setting up a JOHS committee within a FHT can help protect both patients and co-workers
 - PPE guidelines; vaccine preventable diseases; TB skin testing



Bright Lights Award 2015

