Agency for Healthcare Research and Quality
Advancing Excellewnce in Health Care

University of Utah and Intermountain Healthcare

Using Health Information Technology to Support Population-Based Clinical Practice

Emerging Research from Career Award Grantees

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June 3rd, 2010

Welcome to your shift doctor…

TIME	DEMOG	COMPLAINT
17:00	2 yr F	FEVER, COUGH
17:10	21 mo M	COUGH, FEVER
17:15	2 wk F	CONGESTION
17:25	17 mo M	COUGHING, VOMITING
17:35	2 yr F	BARKING COUGH
17:50	3 mo F	FEVER, RESP DIST
…	…	…

So what about 2 yr F with fever & cough?

"What does Bridget have?"

"Is anything going around?"

"What can we do about it?"

"Can I get some antibiotics?"

"What about some cough medicine, the strong stuff?"

"What is going to happen to Bridget, will it get worse?"

"Are my other kids going to get sick? Am I?"

"When can she go back to day care?"

NEW in 2009 → "Is it the Swine flu?"

Value: Acute Resp. Infection (ARI) Care

- Improved awareness of community outbreaks
  - Provision of timely information about regional respiratory viral activity to front line clinicians
- Improved tools for provider-patient communication.
  - Showing parents a graph of local viral activity and providing pathogen-specific patient education
- Improved quality of care for ARI
  - More judicious antibiotic use
  - Safer and more effective symptom reliever use
- Improved provider and patient satisfaction

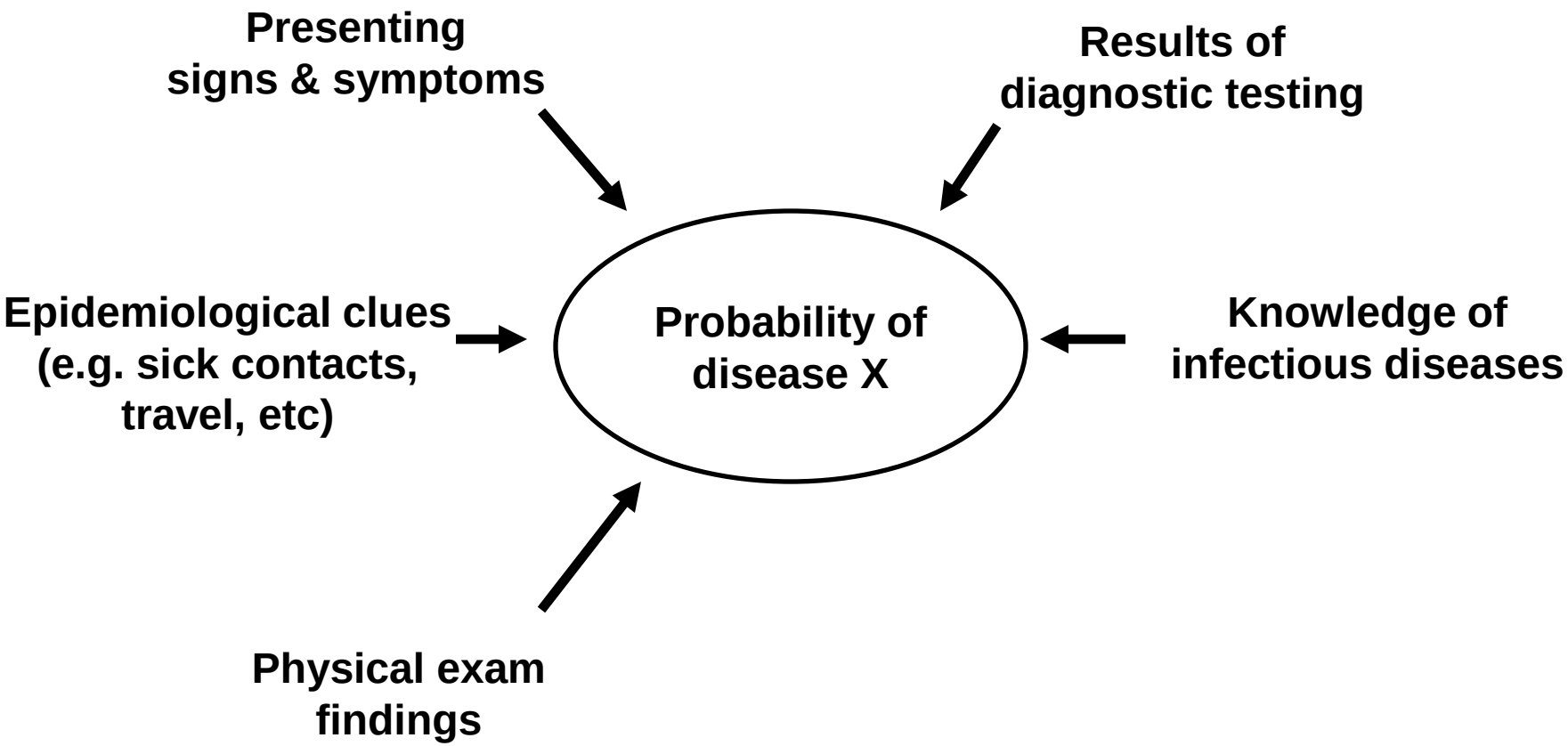
Population-Based Clinical Practice & ARI

- Community perspective
  - Knowing what is going around and who is at risk
- Clinical epidemiology perspective
  - Understanding how different pathogens behave
- Emphasis on outcomes
  - Knowing likely, and how to optimize outcomes
- Emphasis on evidence-based practice
  - Knowing which tests and treatments work
- Emphasis on prevention
  - Vaccine advocacy and education about transmission

Why focus on ARI?

- Most common reason for seeking acute care
- Expensive → ~$40 billion (2003)
- Excessive antibiotic use
  - Resistance and ADEs
- Hazardous / ineffective use of symptom relievers
- Highly dynamic information needs
  - Endemics vs. epidemics vs. emerging infections
  - Evolving medical technologies- testing, drugs

Clinician Information Needs for ARI



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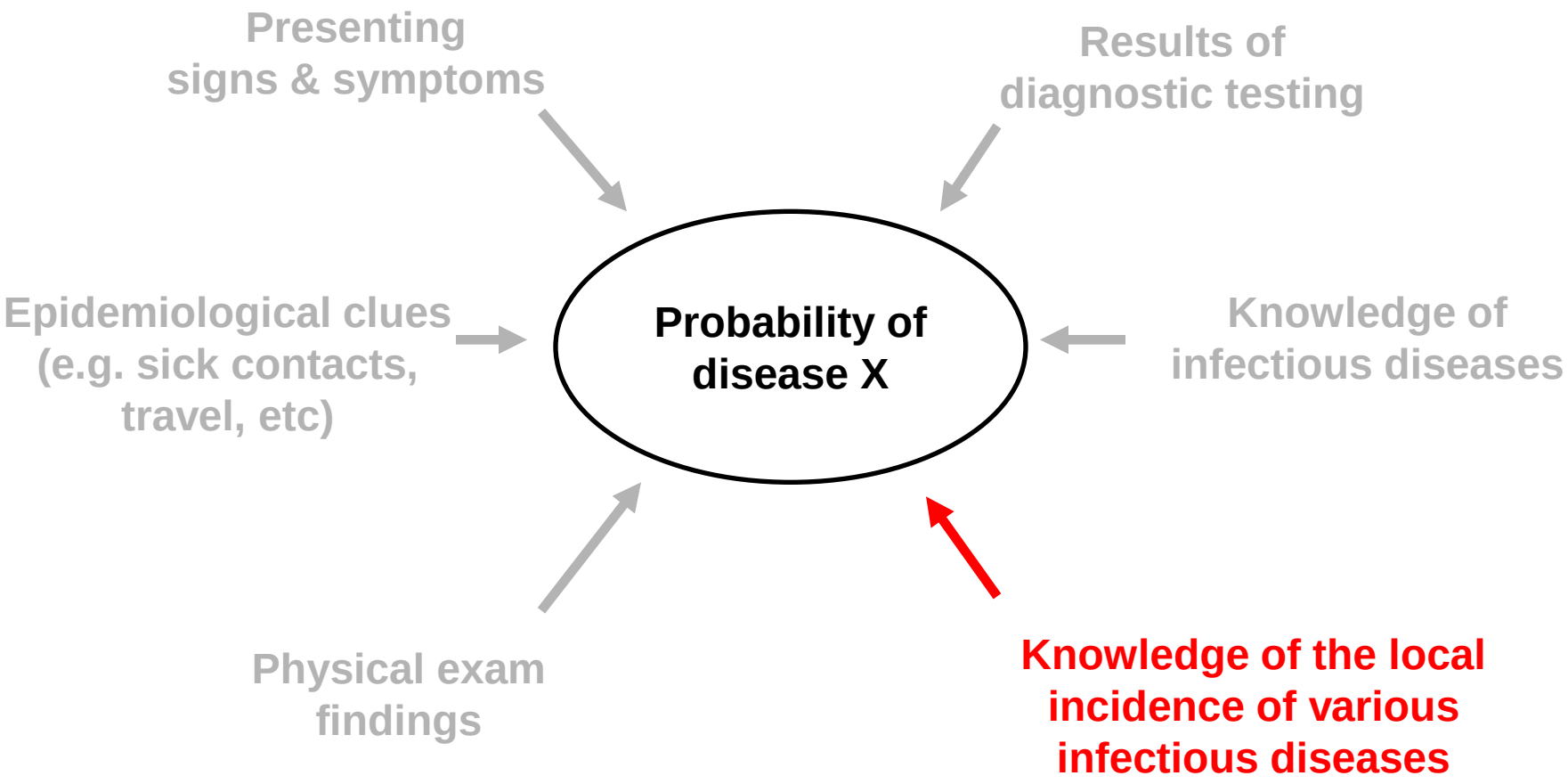
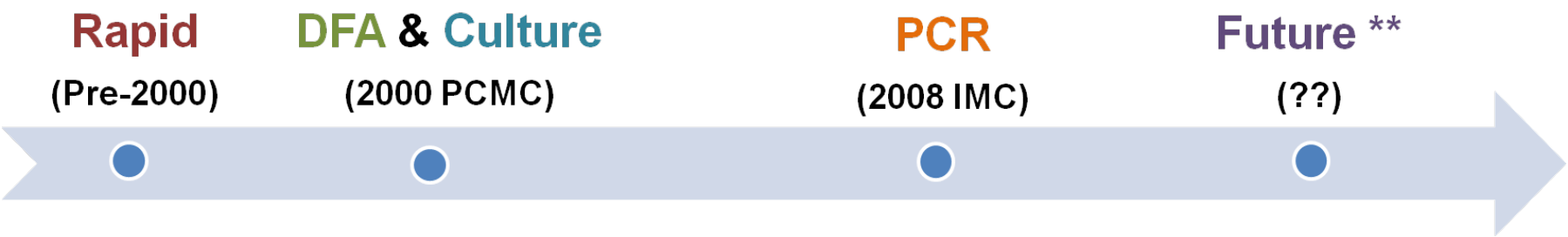


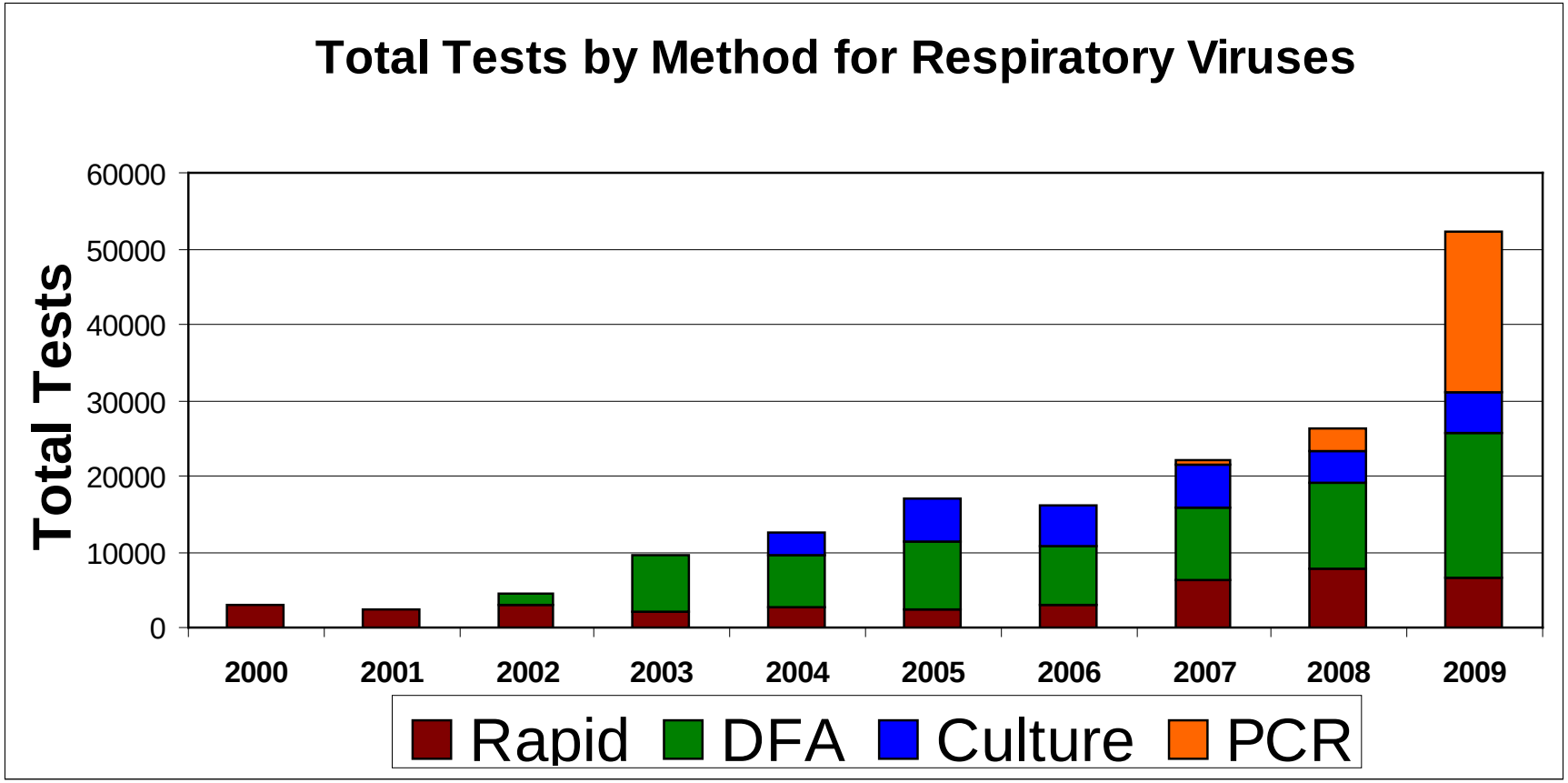
Molecular Diagnostics for Infectious Diseases

Needs driving advances in molecular diagnostics

- More pathogens detected → panels
- Lower cost
- Higher sensitivity
- Faster turn around
- Closer to point of care

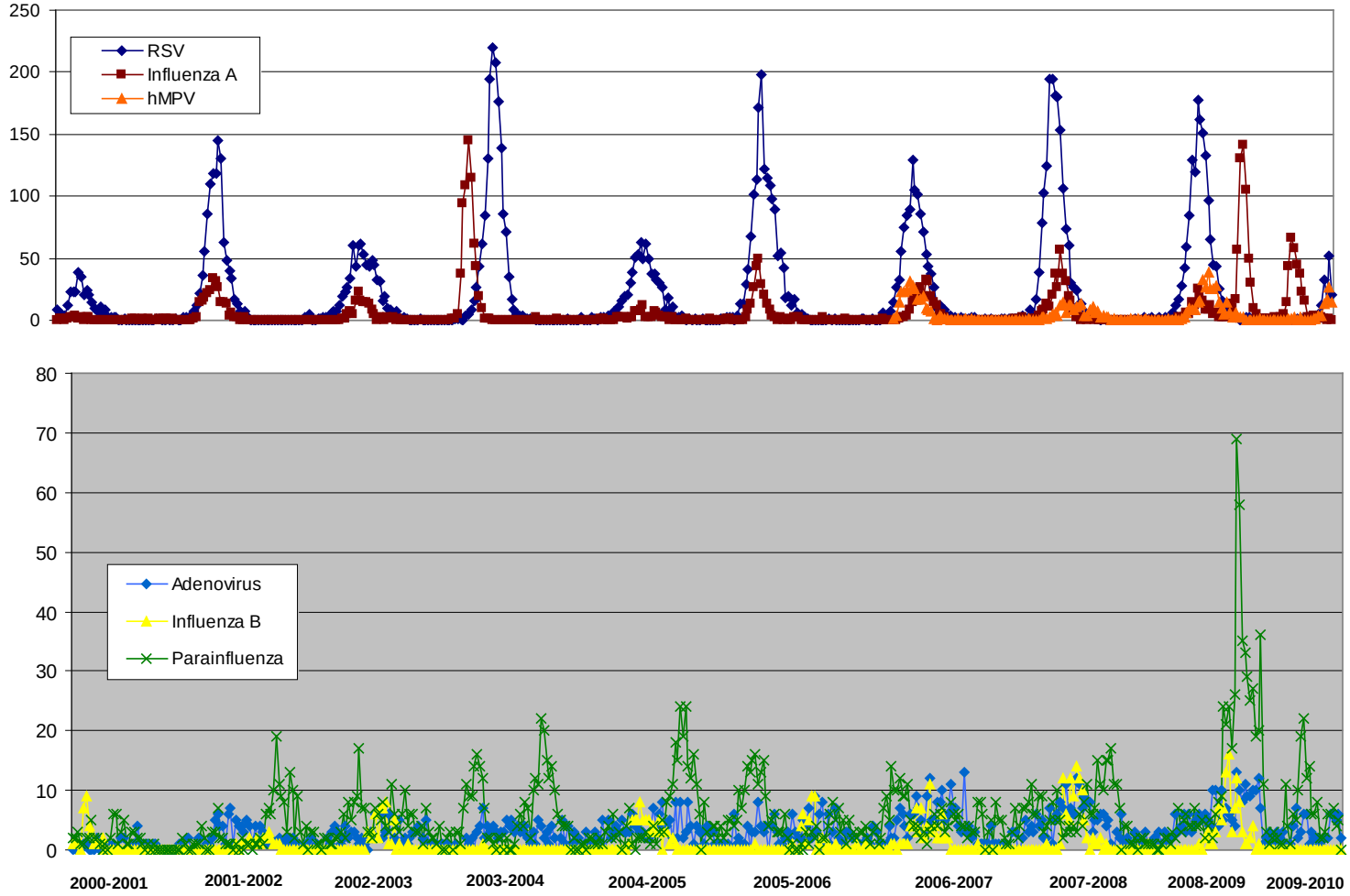


Respiratory Viral Testing at Intermountain

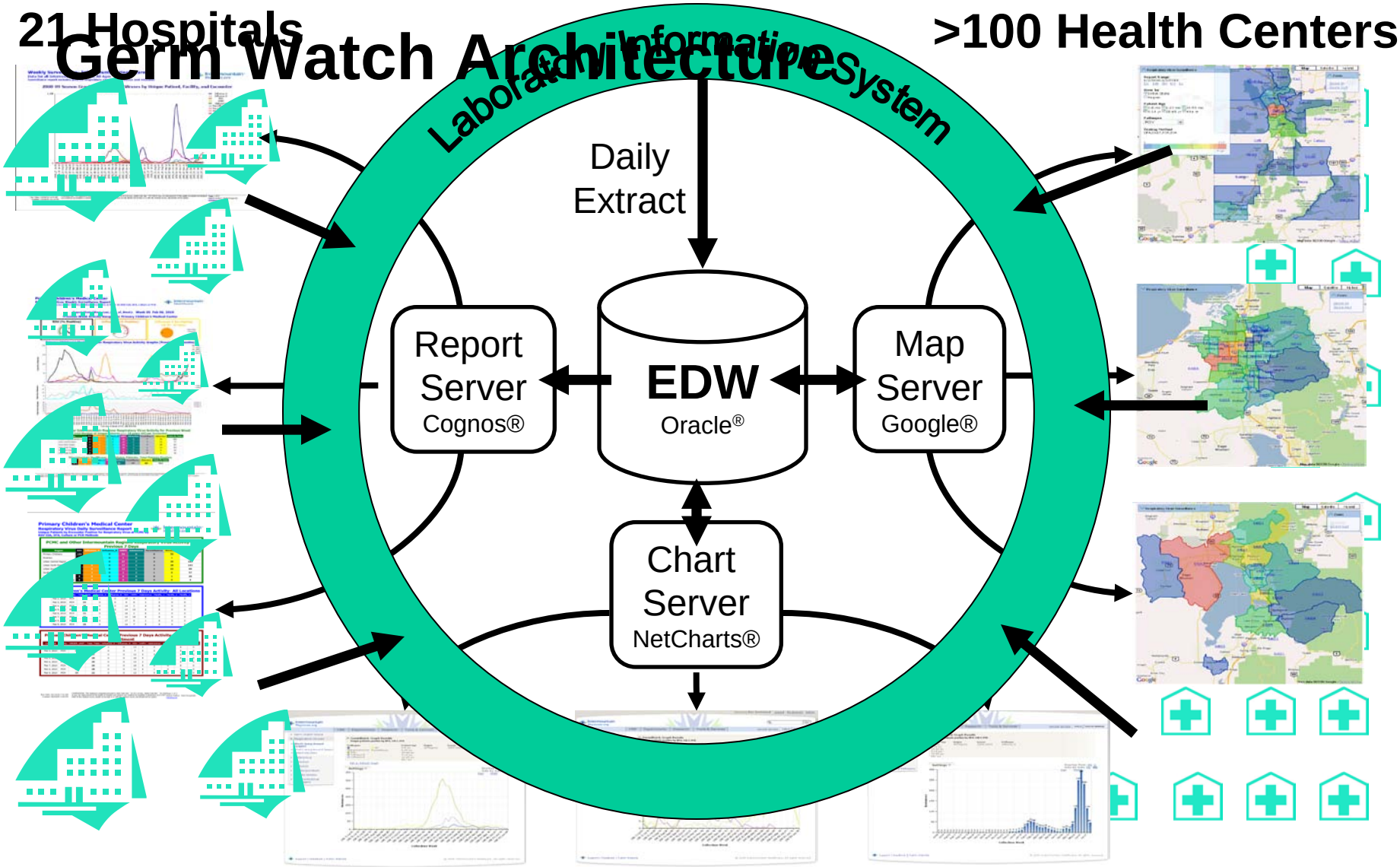


Primary Children's Medical Center

Respiratory Virus (DFA) Surveillance Dec 21, 2000 thru Jan 24, 2010



Germ Watch Architecture



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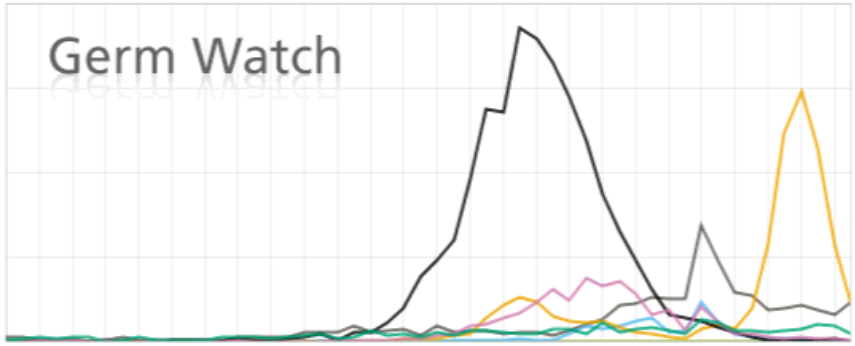
CME | Departments | Research | Tools & Services | secure access | HELP2 clinical desktop

- Germ Watch Home
- Respiratory Viruses
- Enterovirus
- Rotavirus
- Pertussis
- Cryptosporidium
- Giardia lamblia
- Gastrointestinal Pathogens



Graph Results: Adenovirus, Metapneumovirus, Influenza A, Influenza B, All Parainfluenza and RSV, 0-65+ years, All Regions, 2007-2008 Season.

Welcome to Germ Watch

This site is intended to provide up-to-date information about communicable diseases that routinely affect our communities. Here you will find current surveillance information about the following infectious diseases:

Respiratory Viruses (Influenza A & B, RSV, Parainfluenza, Adenovirus, human Metapneumovirus)

Enterovirus

Rotavirus

Bordetella pertussis

Various gastrointestinal pathogens

Disease Update - Monday, January 25th, 2010

- Influenza activity remains much lower than earlier in the fall with only 8 isolates last week, all of which were 2009 H1N1.
- RSV activity continues to increase.
- HMPV is also increasing.
- The activity of adenovirus, rhinovirus and parainfluenza 1 is still ongoing and steady.

Acknowledgements

Infectious Disease Links

- UDOH Epidemiology
- Influenza - Utah
- West Nile Virus - Utah
- Utah Immunization Program
- U.S. Immunization Program
- NREVSS
- CDC Travelers' Health
- CDC Influenza

Respiratory Virus Reports

- Current Influenza A Report
- Current PCMC Respiratory Virus Report
- Weekly PCMC Respiratory Virus Report

Avian Influenza Update

UDOH Avian Influenza Update - 3/25/09

View previous updates...

Suggestion?

Let us know what you think! Click on the button below to make a suggestion.

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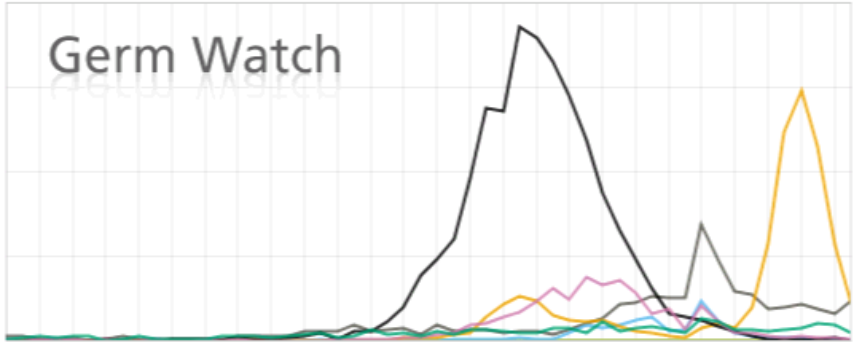

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Dashboard Style Reports

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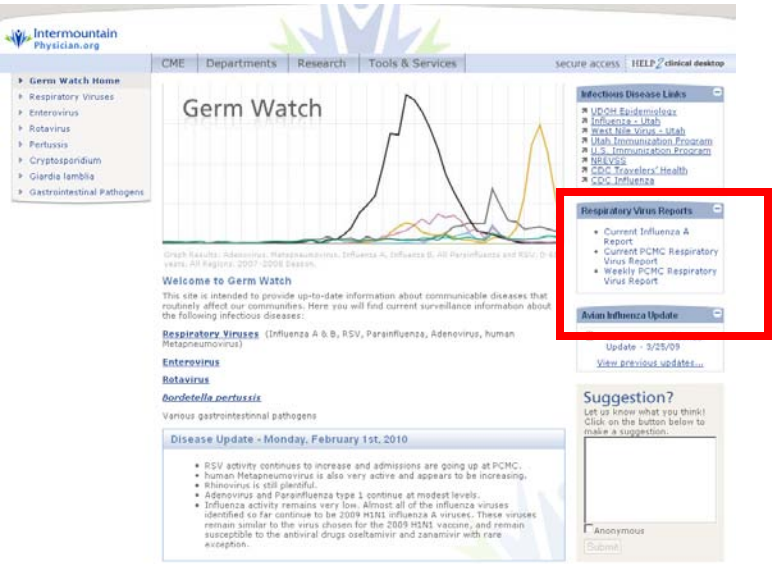
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

Weekly report



Primary Children's Medical Center

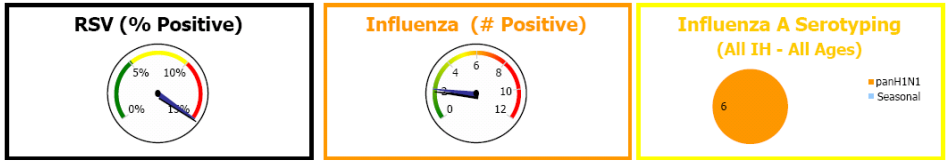
Respiratory Virus Weekly Surveillance Report

Unique Patients by Encounter Positive for Respiratory Virus at PCMC by RSV-EIA, DFA, Culture or PCR Methods

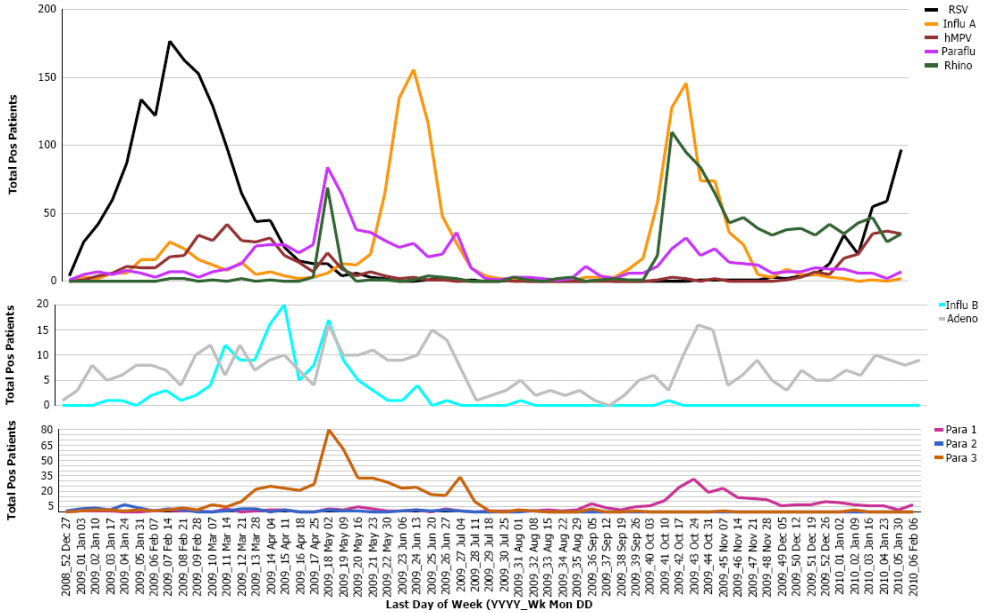
Intermountain Healthcare

Report Week (Week Last_Day_of_Week): **Week 05 Feb 06, 2010**

Previous Week Activity Gauges for Primary Children's Medical Center



Primary Children's Medical Center Respiratory Virus Activity Graphs (Previous 13 Months)



PCMC and Other Intermountain Regions Respiratory Virus Activity for Previous Week

Total Number of Unique Patients (<= 18 years old) per Encounter

Region	RSV	Influenza_A	Influenza_B	hMPV	Adenovirus	Parainfluenza	Rhinovirus	Total_Pt_Tests
Primary Childrens Medical Center	97	2	0	35	9	7	35	227
Urban Central Region	26	0	0	13	5	3	15	77
Urban North Region	23	0	0	10	3	3	18	82
Urban South Region	28	0	0	10	3	1	13	83
Southwest Region	13	0	0	4	1	0	0	42
Urban South Rural	25	0	0	0	0	0	1	51

Intermountain Healthcare- All Pediatric Patients- Total Patients Positive

RSV	Influenza_A	Influenza_B	hMPV	Adenovirus	Parainfluenza	Rhinovirus	Total_Pt_Tests
212	2	0	72	21	14	82	562

Run Date: 02/08/10 8:21 AM
Created: 01/21/09 8:30 AM

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Report Author: Kent Korgenski
MetaReport

What have we learned so far?

- We can disseminate timely and meaningful information
  - >300 physicians getting weekly updates
  - Web site being utilization
- Clinicians attitudes and beliefs
  - Generally understand applicability
  - Believe it improves their performance
    - Diagnostic accuracy and treatment decisions
  - Peers and patients expect them to be knowledgeable
- Clinicians want it quick, easy and at their finger tips

What we need to learn more about?

- Role and optimization of data visualization
  - Epidemic curves, activity gauges, GIS
  - Patient facing visualizations
- Integration with clinical work flow
  - Clinical information system
    - Info buttons, e-resources, alerts
  - Acute care episode work flow
- Optimizing tools to support communication
  - System → provider; provider → patient

K08 – Mentored Clinician Scientist Award

Aim 1 - Assess use of current tools & information needs

- Semi structured interviews with clinicians
- Focus groups with parents

Aim 2 – Tool refinement

- Clinical information system integration
- Clinical work flow integration

Aim 3 – Implementation of refined tool set

Aim 4 – Measure effects via nested randomized controlled trail

Clinical encounter in the future

- Waiting room phenomenon – teach patients
- Time limited with providers – well spent
- Which virus is it and how long will they have symptoms
- Intervention
  - Pathogen-specific, more testing
- Advice
  - “Your child will have symptom X for Y duration…”
  - “Complication A shows up X% in these risk groups”

Questions?
Suggestions?

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