Meaningful health data amid noise
Digital signal detection

Traditional public health surveillance
Digital disease detection picks up early signals.

Traditional public health monitoring.
DATA FLOW

Social Data → Filtering → Curation → Dashboard
Wednesday, Sep. 09, 2009

Is a Swine Flu Outbreak Coming? Ask Your iPhone

By Bryan Walsh
150+ peer-reviewed scientific publications
HEALTHMAP IS NOW A GOLD STANDARD FOR DIGITAL DISEASE DETECTION
INTERNATIONAL HEALTH REGULATIONS (IHR)
from policy to people’s health security

5 reasons why the IHR matter

1. HEALTH THREATS HAVE NO BORDERS
   The IHR strengthen countries’ abilities to control diseases that cross borders at ports, airports and ground crossings.

2. TRAVEL AND TRADE ARE MADE SAFER
   The IHR promote trade and tourism in countries and prevent economic damage.

3. GLOBAL HEALTH SECURITY IS ENHANCED
   The IHR establish an early warning system not only for diseases but for anything that threatens human health and livelihoods.

4. DAILY THREATS ARE KEPT UNDER CONTROL
   The IHR guide countries to detect, assess and respond to threats and inform other countries quickly.

5. ALL SECTORS BENEFIT
   The IHR prepare all sectors for potential emergencies through coordination and information sharing.

Until all sectors are on board with the IHR, no country is ready

www.euro.who.int/ihr
Veracruz: reporta agente municipal extraño brote epidémico que ha cobrado dos vidas

La funcionaria de La Gloria informó que el raro padecimiento ha afectado a 60 por ciento de sus tres mil habitantes con infecciones respiratorias.
## Monitoring Polio Vaccine Sentiment

<table>
<thead>
<tr>
<th>Date</th>
<th>Summary</th>
<th>Vaccine</th>
<th>Category</th>
<th>Sentiment</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-01-21</td>
<td>Swine Flu Vaccination Linked to Increased Risk of Narcolepsy in Young Adults - Infection Control Today</td>
<td>H1N1</td>
<td>Research, AEFI - Narcolepsy</td>
<td>Negative</td>
<td>Sweden</td>
</tr>
<tr>
<td>2014-01-22</td>
<td>Suspected measles case reported from Kolar area - Times of India</td>
<td>Measles/NOS</td>
<td>Disease Burden</td>
<td>Positive</td>
<td>Bhopal, Madhya Pradesh, India</td>
</tr>
<tr>
<td>2014-01-22</td>
<td>Study: Vaccine adjuvant aluminum hydroxide causes neurological ...</td>
<td>Anthrax</td>
<td>Research, Additives, AEFI - Neurological damage</td>
<td>Negative</td>
<td>Canada</td>
</tr>
<tr>
<td>2014-01-21</td>
<td>Study: Tightening vaccine exemption laws would cut cases of whooping cough - FierceVaccines</td>
<td>TDaP, Vaccines in general/All vaccines</td>
<td>Beliefs - Philosophical, Reliefs - Relics, Vaccines</td>
<td>Positive</td>
<td>United States</td>
</tr>
</tbody>
</table>

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**The Lancet Infectious Diseases**

Measuring vaccine confidence: analysis of data obtained by a media surveillance system used to analyse public concerns about vaccines

Dr Heidi J Larson PhD a 1,2, David MO Smith 3,4, Pauline Paterson PhD a,b, Neillia Cumming MS a, Elisabeth Eikenberg MPA a, Clark C Freifeld MS f, Isaac Ghinai b,c, Caitlin Jarrett MPH a, Louise Paavonen MPH a, John S Brownstein PhD f, Prof Lawrence L Madoff MD a 1,2

This can be found in the following collections: Public Health; Infectious Diseases (immunisation & vaccination)

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**CONFIDENTIAL**

CONFIDENTIAL EPIDEMICO, INC.
EBOLA 2014

August 27

Guinea 607 cases 406 deaths Sierra Leone 910 cases 392 deaths
Liberia 1082 cases 624 deaths Nigeria 16 cases 5 deaths

* suspected case and death counts from WHO

Death toll in Congo Ebola outbreak reaches 13 - ITV News

"A total of 13 people, including five health workers, have now died from Ebola in the Democratic Republic of Congo, according to a report by the UN. The government has said it will be quarantining the area around the town of Mbandaka in the northwestern province of Equateur, where a high number of suspected cases has been reported."
SupplyChainMap

1158 alerts, 3796 products, in all locations, between 01 Apr 2015 - 14 Jan 2016 (288 days)

Province Analysis

- Shandong Province, China: 638 INCIDENTS
- Beijing, China: 362 INCIDENTS
- Guangdong Province, China: 326 INCIDENTS
PIN MAP AND PROVINCE ANALYSIS

Provincial Analysis

Shandong Province, China

Population: 89,855,501
Provincial FDA:

Number of Alerts (% of all fetched): 1158

Number of Incidents (% of all fetched): 3796

Category Distribution:

- Safety: 425
- Fraud: 209
- Defense: 4
- Quality: 0

Main Contaminants:

- Bacteria, unspecified: 66
- Benzoic acid: 58
- Nutrient deficiencies/excesses: 52
- Potassium alum: 52
- Excessive approved food additive: 48
- E.coli: 42
- Pesticides: 35
- Sodium cyclamate: 34
- Nitrite: 22
WHO: TRIPLE BILLION STRATEGIC PRIORITIES, 2019-2023

- 1 billion more people enjoying better health and well-being
- 1 billion more people better protected from health emergencies
- 1 billion more people benefitting from universal health coverage
COMMUNITY OF PRACTICE

Expert Focus Group - Space & Global Health

One Health & Space

Based on the AT6 & AT6FUI background the initiative has >>One Health Risk Mitigation as objective with application of the Open Community Approach.

Explore EFG-SGH
Universities: Academics, students

Engaged Citizens:
- Space Generation Advisory Council
- Citizen scientists
- Healthcare practitioners
- Social entrepreneurs

Member States, Ministries of Health

UN Agencies:
- WHO, UNICEF, UNHRC, UNISDR

NGOs:
- ICRC, MSF, Red Cross, Red Crescent
COMMUNITY OF PRACTICE

Objectives:

• Learning and iteration
• Capacity building
• Evidence generation
• Knowledge sharing
• Partnership building
• Multi-sectoral collaboration
COMMUNITY OF PRACTICE

Outputs:

**Data Innovation Project and Tool Briefs**
Learn about the projects and tools completed or ongoing with partners.

**Reports**
UN Global Pulse produces a number of reports on big data and innovation projects every year.

**Scientific and Technical Publications**
A compendium of scientific publications authored and co-authored.

Case studies, Open Educational Resources (OERs), Open Source Software

Official UN and government Reports & Policies

Open-Access peer-reviewed & technical publications
UNTIL Lab Locations

The global UNTIL network is currently planning to start multiple collaborative projects to help the member UN mandate areas in development, human rights, and peace and security. The first UNTIL lab is located in Finland.

UNTIL Finland | Espoo

UNLEASH - A global innovation lab for the SDGs

UNLEASH is a global innovation lab, which gathers 1,000 talent annually to collaborate on solutions to meet the United Nations Sustainable Development Goals. UNLEASH has taken place in both Denmark and in Singapore and will travel to a new destination every year.

Learn more about UNLEASH 2018
COMMUNITY OF PRACTICE

Technology Stack:

• Blends web-based and crowd-sourced open data
• Integrates geospatial, environmental, epidemiological, financial, health, and nutrition data
• Low-cost, easily adaptable to local and regional requirements
• Country-specific, privacy-protected data under full technology control of Member States
SITUATIONAL DATA:
Space technology data

TRANSPORTATION
SOCIO-DEMO
CLIMATE
CENSUS
STRUCTURES
GEO

INDIVIDUAL DATA:
Anonymized, aggregated health data

IoT
EMR
GENOME
EPGENOMIC
MICROBIOME
INSURANCE
OPEN SOURCE INFRASTRUCTURE

• Open Source Disaster Management Software

Open Source Disaster Management Software

Making high quality information management systems for emergency preparedness, response, recovery and resilience-building accessible to all.
• Open Geo Data
• Humanitarian Crowd-Sourcing Tools

CrisisMappers
THE HUMANITARIAN TECHNOLOGY NETWORK

We are grateful to the ICT for peace foundation for hosting crisis mapping, over many years, also with the United Nations. It can be accessed here.

Contributed hours to a Crisis of the Week.

Putting the World’s Vulnerable People on the Map

Each year, disasters around the world kill nearly 100,000 and affect or displace 200 million people. Many of the places where these disasters occur are literally ‘missing’ from any map and first responders lack the information to make valuable decisions regarding relief efforts. Missing Maps is an open, collaborative project in which you can help to map areas where humanitarian organisations are trying to meet the needs of vulnerable people.
Flexible information systems

District Health Information System 2 (DHIS2)

DHIS2 is an open source software platform developed by the Health Information Systems Program (HISP) and supported by the University of Oslo’s Department of Informatics. Although HISP initially focused on grassroots health committees and Community Information Systems in South African health districts, DHIS was quickly adopted for national implementation by South Africa and other African countries as was the web-based version, DHIS2, after its development in 2005-2006.

DHIS2 is used to aggregate statistical data collection, validation, analysis, management, and presentation. This data analytics and management platform is completely web-based and boasts great visualization features and the ability to create analysis from live data metrics.
Explore the Knowledge Portal

How can space technology be applied in disaster and risk management?

Where can I access satellite data, products and other resources?

Who are the users of space technology in disaster and risk management?

Which services can UN-SPIDER offer to Member States?
2017 ANNUAL REPORT - UN GLOBAL PULSE

The 2017 Annual Report details exciting new explorations of big data and A.I. to advance the 2030 Agenda.

Read More /
APIs + RSS
Aggregate all freely-available, public APIs & publications

6 UN official languages

10 Hackathons

Space 4 Health: By 2020