WHAT CAN WE LEARN WHEN WE SEQUENCE ALL THE THINGS?

GENOMIC EPIDEMIOLOGY OF A DECADE’S WORTH OF TUBERCULOSIS

@JENNIFERGARDY
All the Things
Part of a series on Hyperbole and a Half. [View Related Entries]

Updated 9 months ago by Don Caldwell.
Added 7 years ago by Don.

About

"All the Things", sometimes known as "X all the Y", is a snowclone and exploitable cartoon used to make a hyperbolic statement about performing an action. The person in the original comic panel is often manipulated to appear as a different character. (See also: fsjal)

Origin

The blog Hyperbole and a Half published a comic titled "This is Why I'll Never be an Adult" by artist Allie Brosh on June 17th, 2010. The comic describes the author's frustration with her inability to maintain a consistent enthusiasm for her daily responsibilities. The following two panels were part of the comic:
BC has about 250 cases of TB each year. Where do they come from? How can we use this knowledge to change TB policy & practice?
A SIMPLE GENOME COUPLED TO A COMPLEX DISEASE
GENOMIC EPIDEMIOLOGY >>> GENOTYPING FOR QUANTIFYING LOCAL TRANSMISSION
GENOMIC EPIDEMIOLOGY >>> GENOTYPING FOR QUANTIFYING LOCAL TRANSMISSION

IS6110-RFLP

MIRU-VNTR

Spoligotyping

Genomics

42%

24%
PRECISE CLUSTERING = PRECISE RISK ANALYSIS

- AGE 0-14
- AGE 35-54
- AGE 55-74
- AGE 75+
- MALE
- CANADIAN-BORN
- RESPIRATORY
- SMEAR-POSITIVE
- DRUG USE
- ALCOHOL MISUSE

ADJUSTED ODDS RATIOS & 95% CI
Examining sub-groups can reveal trends with policy implications.
GENOMICS DISRUPTS CONVENTIONAL WISDOM
GENOMIC DATA ONLY MAKES SENSE IN LIGHT OF OTHER DATA TYPES
Care Bears
The Day Nobody Shared

SHARING IS CARING
Prediction of Susceptibility to First-Line Tuberculosis Drugs by DNA Sequencing

The CRyPTIC Consortium and the 100,000 Genomes Project

Abstract

BACKGROUND
The World Health Organization recommends drug-susceptibility testing of Mycobacterium tuberculosis complex for all patients with tuberculosis to guide treatment decisions and improve outcomes. Whether DNA sequencing can be used to accurately predict profiles of susceptibility to first-line antituberculosis drugs has not been clear.

CONCLUSIONS
Genotypic predictions of the susceptibility of M. tuberculosis to first-line drugs were found to be correlated with phenotypic susceptibility to these drugs. (Funded by the Bill and Melinda Gates Foundation and others.)
PRECISION PUBLIC HEALTH IS A REALITY
USE CASES VARY BY PATHOGEN & SETTING
METADATA & AN ACTIONABLE GOAL ARE KEY