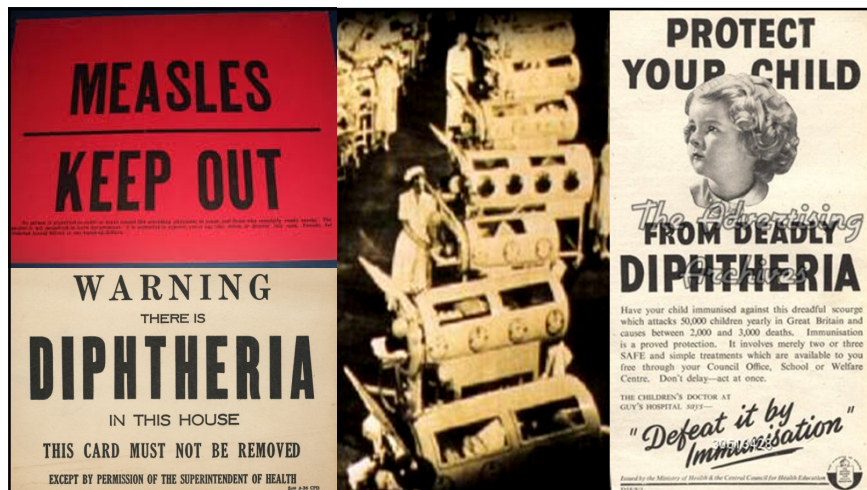


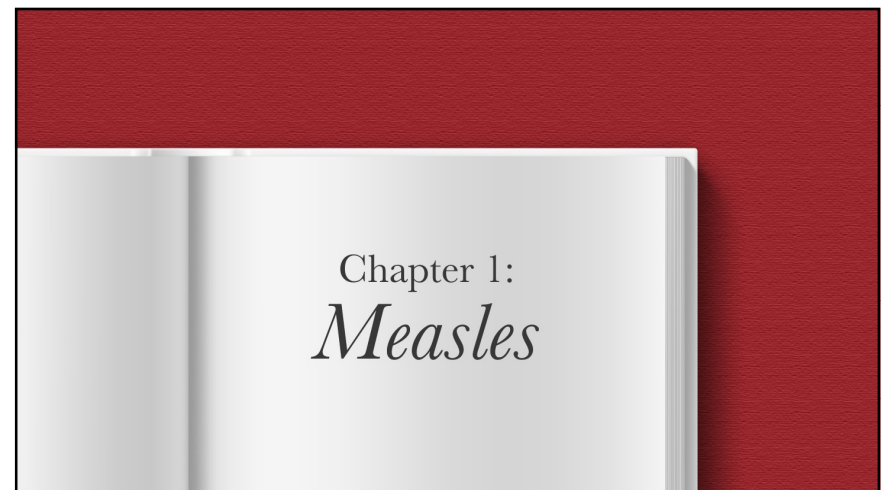
1



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Measles in the United States: 2019

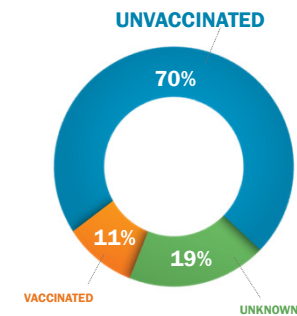
- Most cases in 27 years
- Several outbreaks driving case counts
 - Occurring in close knit communities
 - Most unvaccinated
- From January 1 – October 1, 2019, 1,249 cases reported to CDC*
- 2nd highest number of reported outbreaks since U.S. elimination in 2000



*Source: MMWR, October 11, 2019 / 68(40);893–896

Most people with measles were unvaccinated

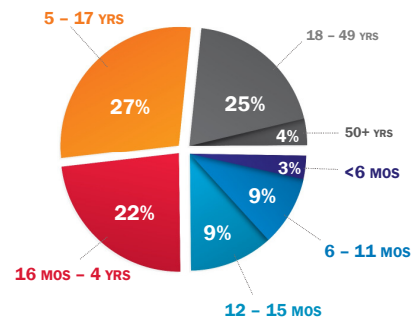
United States, January 1 – October 1, 2019 (n=1249 cases)



*Source: MMWR, October 11, 2019 / 68(40);893–896

Most people with measles were children

United States, January 1 – October 1, 2019 (n=1249 cases)



*Source: MMWR, October 11, 2019 / 68(40):893–896



Ohio teen defies parents' wishes by getting vaccinated

ROCKLAND COUNTY TIMES

BREAKING: County Exec Day Declares State of Emergency Related to Ongoing Measles Outbreak

By [reuters](#) on March 26, 2019 [Breaking News Local](#)

**STATE
— OF —
EMERGENCY**

County Executive Ed Day declared a county-wide State of Emergency relating to the ongoing measles outbreak. Effective at the stroke of midnight, Wednesday, March 27, anyone who is under 18 years of age and unvaccinated against the measles will be barred from public places until this declaration expires in 30 days or until they [...]



9

OUR COLUMNISTS THE NEW YORKER

WHY MEASLES IS A QUINTESSENTIAL POLITICAL ISSUE OF OUR TIME

By Masha Gessen March 2, 2019

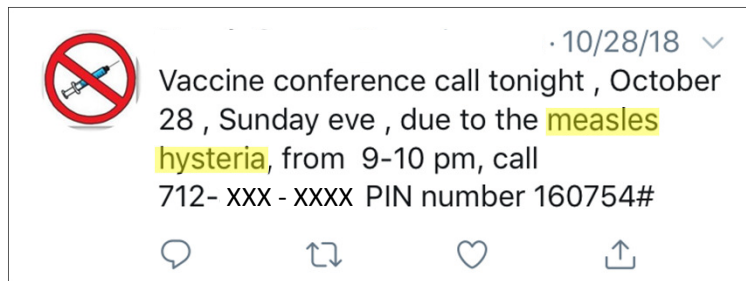
The New York Times
Tensions Rise as New York City Steps Up Response to Measles
An order to require immunizations in the ultra-Orthodox Jewish community seemed to mobilize vaccine skeptics. Others worried that the effort did not address the root of the problem: misinformation.

NEW DEVELOPMENTS
NYC DECLARES PUBLIC HEALTH EMERGENCY AMID MEASLES OUTBREAK
Dr. Oxiris Barbot | New York City Health Commissioner

TONIGHT ON CNN
JAY INSLEE
10P ET
CNN
8:50 AM ET

10

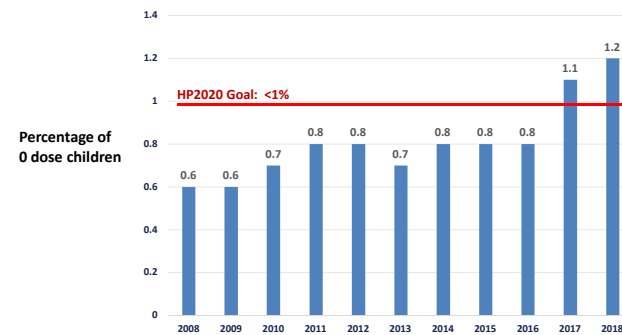
Anti-Vaccine & Pro-Measles Sentiment



Slide courtesy of R. McDonald NY State Department of Health

11

Very few US toddlers receive no vaccines at all, but this group is increasing slightly

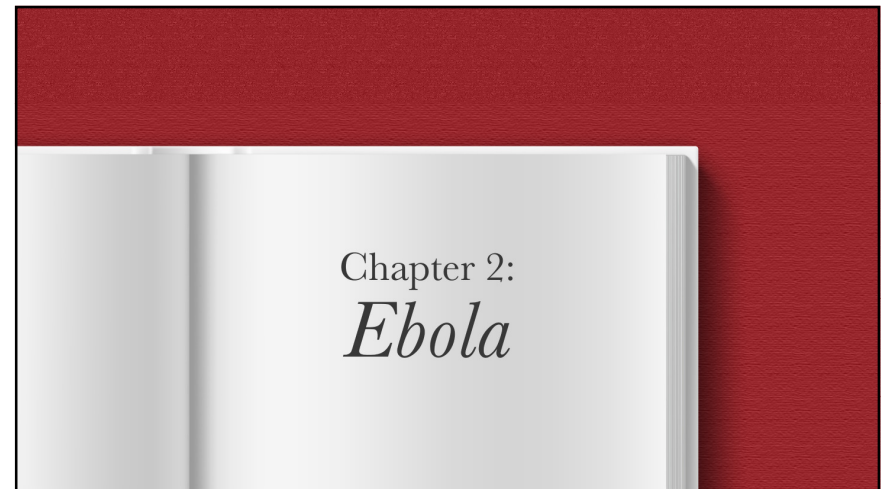


Source: National Immunization Survey, MMWR October 17, 2019, 19-35 months at time of survey

12

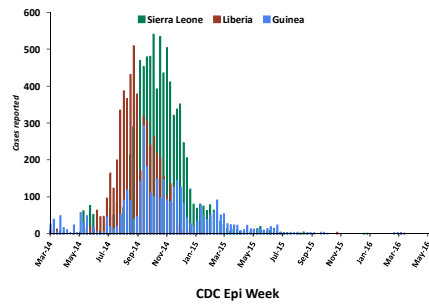


13



14

Ebola, 2014-2015



Clashes Erupt as Liberia Sets an Ebola Quarantine

By MICHAEL GUNDEL AUG 20, 2014



15

Ebola 2014-16: Lessons Learned

1. Each country must be able to **prevent, detect, and respond** to threats.
2. When countries are overwhelmed the international community must be able to **surge in**.
3. Health care **infection control** is critical.
4. The pace of **research** needs further acceleration.
5. Effective engagement of communities is essential.

Centers for Disease Control and Prevention
MMWR
 Morbidity and Mortality Weekly Report
 Supplement 7 Vol. 65 / No. 3
 July 8, 2016

CDC's Response to the 2014–2016
 Ebola Epidemic —
 West Africa and United States

CDC PUBLIC HEALTH GRAND ROUNDS

Shifts in Global Health Security:
 Lessons from Ebola



16

Arsonists attack Ebola clinics in DRC as climate of distrust grows

Health agencies re-evaluate approach after attacks on treatment centres in North Kivu

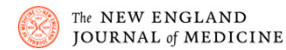


Assailants attacked an Ebola treatment center in Congo — again. It's another major setback.

The second-worst Ebola outbreak in history is proving difficult to contain.

By Julia Belton | @JuliaBelton | julia.belton@nbcnews.com | Updated Mar 11, 2019, 10:48am EDT

▲ Part of the Ebola treatment centre operated by Médecins Sans Frontières in Katwa was burned down, prompting a temporary suspension of activities. Photograph: MSF



Perspective

An Epidemic of Suspicion — Ebola and Violence in the DRC

Vinh-Kim Nguyen, M.D.

April 4, 2019

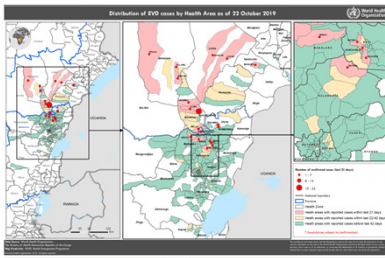
N Engl J Med 2019; 380:1298-1299

DOI: 10.1056/NEJMp1902682

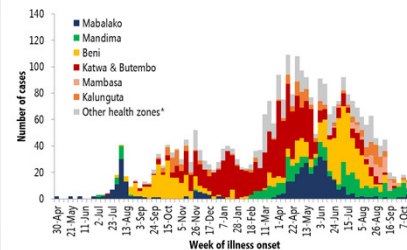
"Are these urban flares the new norm? What might the ebb and flow of intervention and violence bode for future epidemics? Insights from the front lines may offer some clues."

Number of Ebola Cases by Health Zone in DRC, 2018-2019

Geographical distribution of confirmed and probable Ebola virus disease cases by health area



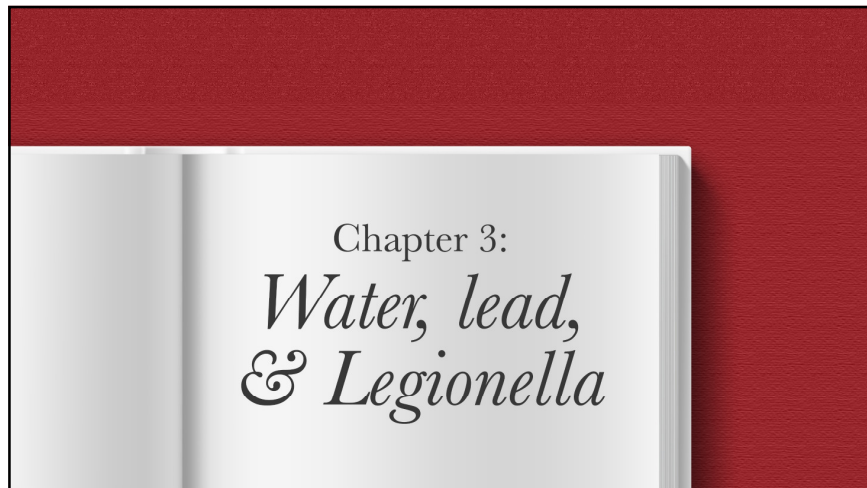
Confirmed and probable Ebola virus disease cases by week of illness onset, as of Oct. 24, 2019



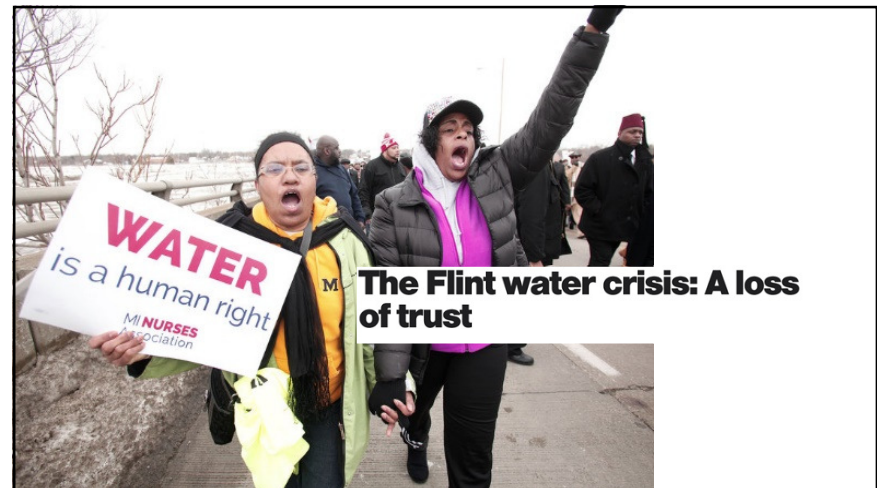
*Source: WHO, as of October 24, 2019 <https://www.who.int/csr/don/24-october-2019-ebola-drc/en/>

What's New or Not-so-New with Ebola DRC 2018-19

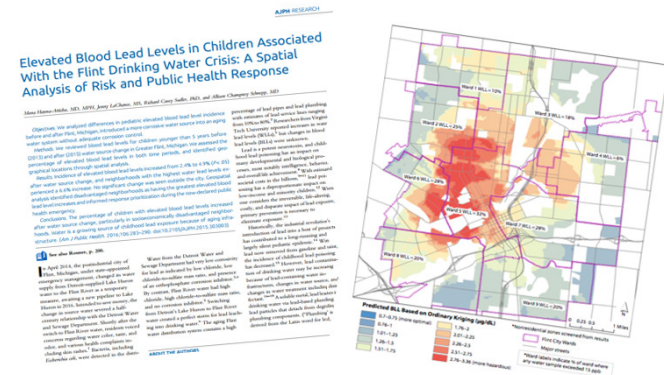
- Ebola outbreak in conflict zone.
- Decentralized diagnostic capacity (gene-Xpert).
- Large-scale use of ring vaccination.
- Systematic evaluation of treatments.
 - Two (REGN-EB3 and mAb114) were successful and now given to all Ebola patients.
- Infected HCWs and nosocomial spread once again important.
- Renewed efforts at community engagement.



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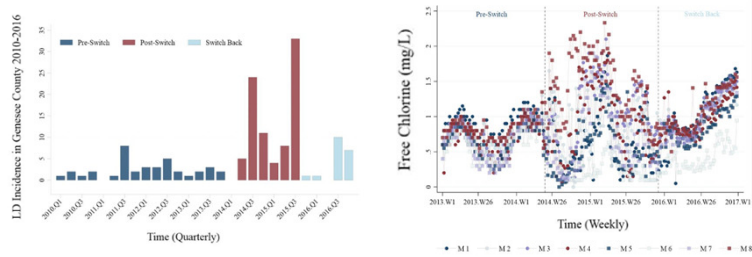


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PNAS

Legionnaires Disease outbreak after Flint water switch



*Sammy Zahran et al. PNAS 2018;115:8:E1730-E1739
© 2018 by National Academy of Sciences

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Long Term Flint Response



- Government, academic, philanthropic/non-profit partnerships
- Community informed/driven/participatory
- Grounded in science and trauma-informed
- Focused on secondary prevention
 - Home visiting
 - Breastfeeding
 - Childcare
 - Literacy
 - School health
 - Medicaid expansion
 - Behavioral health
 - Nutrition support
 - Mindfulness

26

Chapter 4: *Opioids*

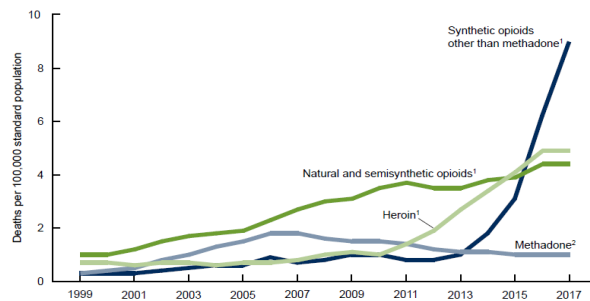
27

The Opioid Overdose Epidemic and Pain in America



28

A Multi-layered Problem in 3 Distinct Waves (and counting)



SOURCE: National Vital Statistics System Mortality File.

29

Opioid, HIV, and HCV Problems in Rural Indiana

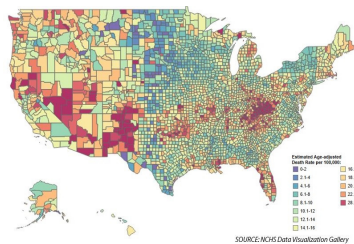
- **>233 people with HIV**
- **90% had HCV coinfection**
- **5% adults with HIV (population 3,143)**
- **Over \$100 million in lifetime medical costs**



30

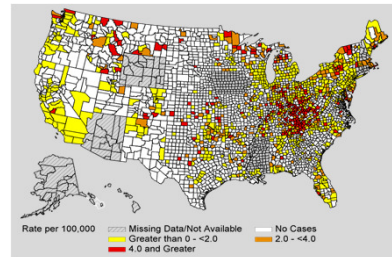
Drug Overdoses and Hepatitis C: Interconnected Problems

Drug Overdose Death Rates



SOURCE: CDC/NCHS Data Visualization Gallery 2015

Reported New HCV Infections



SOURCE: CDC National Notifiable Disease Surveillance System 2013-14

CDC Guideline on Opioid Prescribing for Chronic Pain led to Substantial Changes

MMWR Morbidity and Mortality Weekly Report
Vol. 65, No. 38, September 21, 2016

CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

March 2016



Quality Improvement and Care Coordination:
Implementing the
CDC Guideline for
Prescribing Opioids
for Chronic Pain



BUSINESS

CVS tightens restrictions on opioid prescriptions in bid to stanch epidemic

By ANDREW JOSEPH @AndrewJoseph / SEPTEMBER 21, 2017



Cigna says it has reduced customers' use of opioids by 25 percent

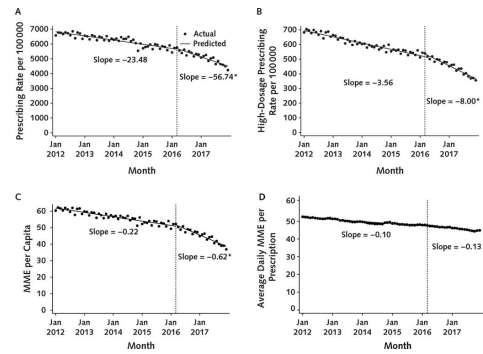
BY BRADLEY BRIDGEMAN / JULY 26/27 2017

Annals of Internal Medicine

ORIGINAL RESEARCH | 10 SEPTEMBER 2018

Opioid Prescribing in the United States Before and After the Centers for Disease Control and Prevention's 2016 Opioid Guideline

Amy S.R. Bohannon, PhD, MD; Gary P. Guy, Jr., PhD, MPH; Jan L. Leshy, PhD, MSP

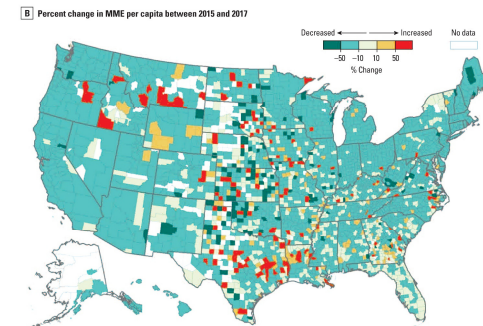


Ann Intern Med. 2018;169(6):367-375. doi:10.7326/M18-1243

33

Decreasing opioid prescriptions after CDC's 2016 Guidelines

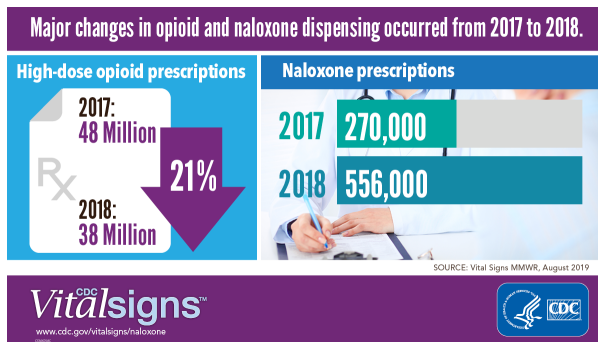
But still too much — three times rate of prescribing in Europe



*Guy et al, JAMA Internal Medicine, Feb 11, 2019

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Doubling of prescribed naloxone, from 2017 to 2018



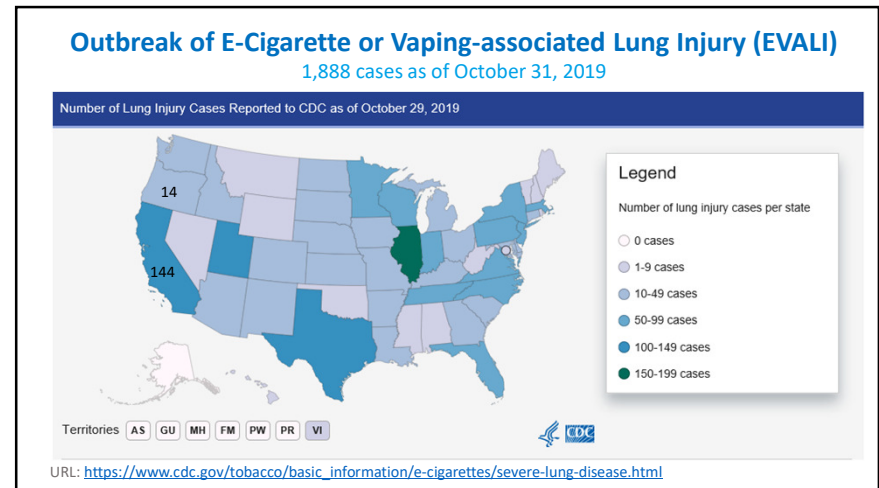
35

Chapter 5: *Vaping outbreak & E-cigarettes epidemic*

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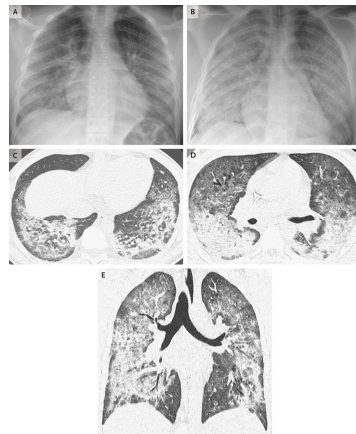


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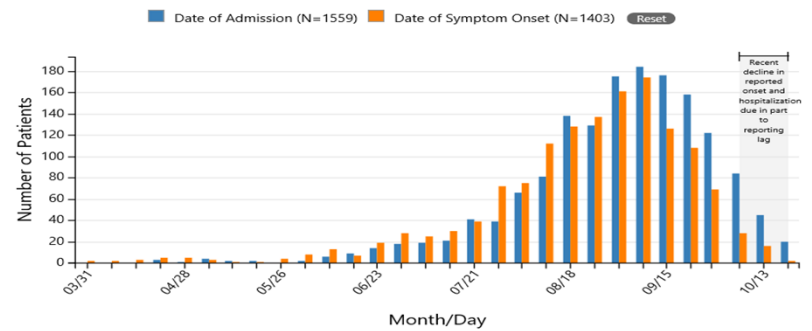
38

Chest Radiographs and High-Resolution Computed Tomographic Imaging in a 17-Year-Old Male Patient with Diffuse Lung Disease.

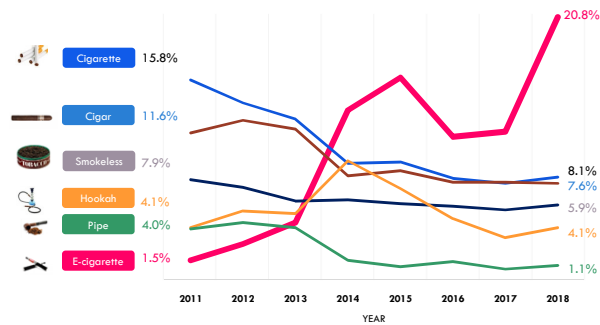


JE Layden et al. N Engl J Med 2019. DOI: 10.1056/NEJMoa1911614

Dates of symptom onset and hospital admission for patients with lung injury associated with e-cigarette use, or vaping — United States, March 31–October 26, 2019



Current Tobacco Product Use Among U.S. High School Students – NYTS 2011-2018

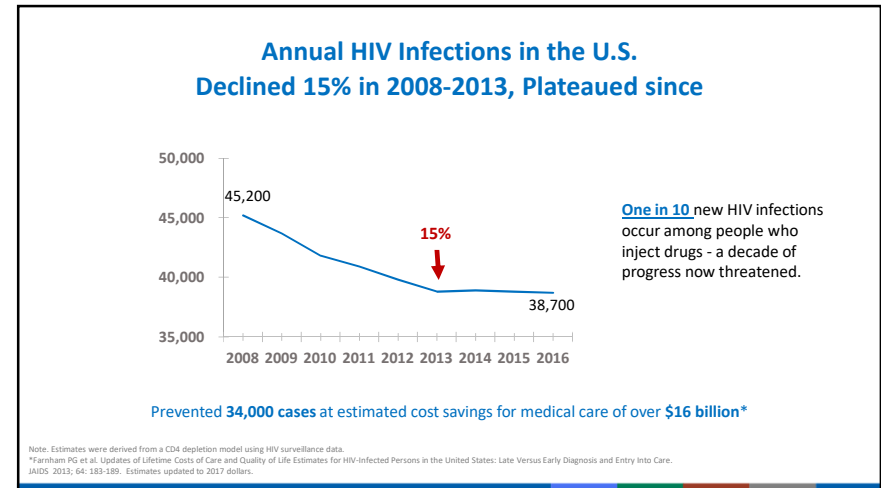


Source: Gentzke AS, Creamer M, Cullen KA, Ambrose BK, Willis G, Jamal A, King BA. Vital Signs: Tobacco Product Use Among Middle and High School Students — United States, 2011–2018. MMWR Morb Mortal Wkly Rep. 2019; 68(6):1-8.

Chapter 6: *HIV/AIDS*



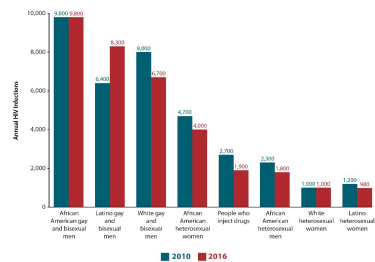
43



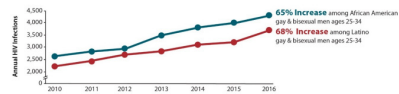
44

Overall trends don't tell the whole story

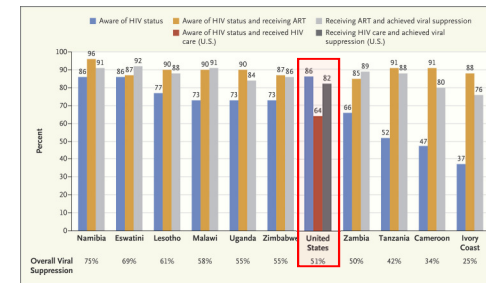
New HIV Infections by Race and Transmission Group, U.S. 2010 vs. 2016



From 2010-2016 Annual HIV Infections Increased Among Latino and African American Gay and Bisexual Men Ages 25-34



Diagnosis and Treatment Status of Persons Living with HIV in the United States and Ten African Countries



Ending the HIV Epidemic: A Plan for America

PHASE 1: Focused effort to reduce new diagnoses by 75% in 5 years

PHASE 2: Widely disseminated effort to reduce new diagnoses by 90% in the following 5 years

PHASE 3: Intense case management to maintain the number of new diagnoses at < 3,000 per year

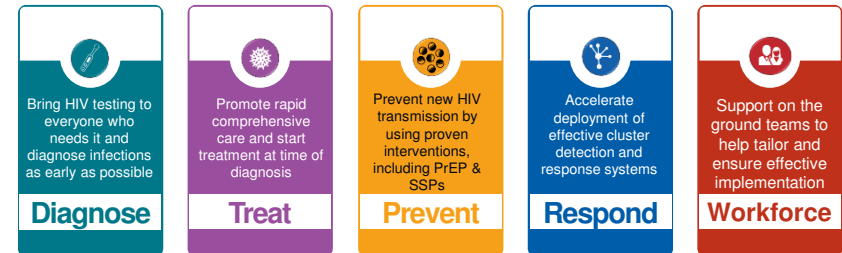
GOAL:

75%
reduction in new
HIV infections
in 5 years
and at least
90%
reduction
in 10 years.



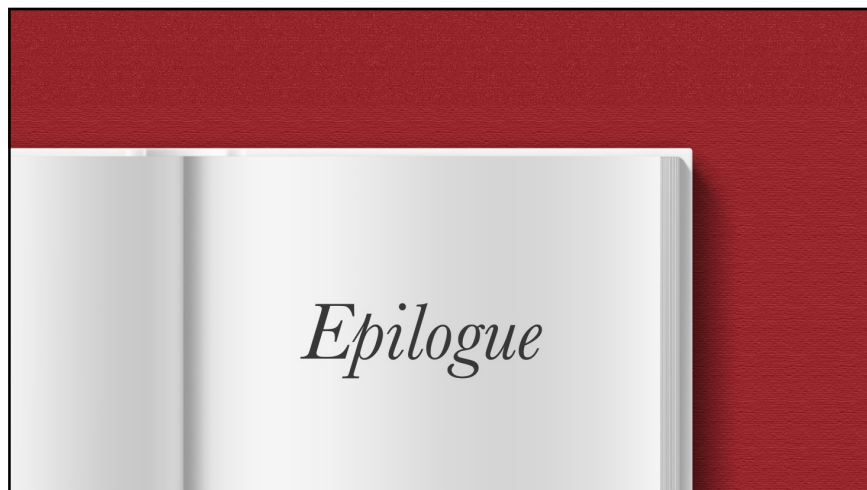
47

The President's FY 2020 Budget requests \$140 million for CDC in Year 1. Strategy includes:



CDC promotes the health of all Americans by preventing HIV infection and reducing HIV-related illness and death.

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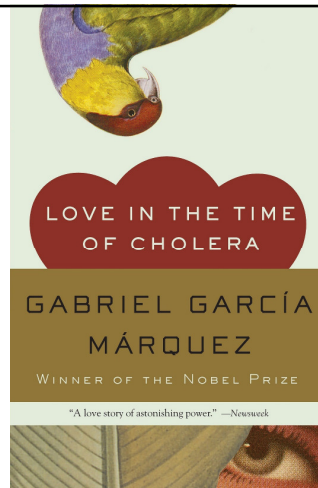
Strategies for public health today

- Reliance on strong evidence-base
- Commitment to accountability
- Assuring political will
- Sustaining a sense of urgency
- Engaging communities, building trust

50

“He found a glimmer
of hope in the ruins
of disaster”

— *Gabriel García Márquez,*
Love in the Time of Cholera



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Learn more about how CDC works for you.

Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Phone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov | Web: www.cdc.gov

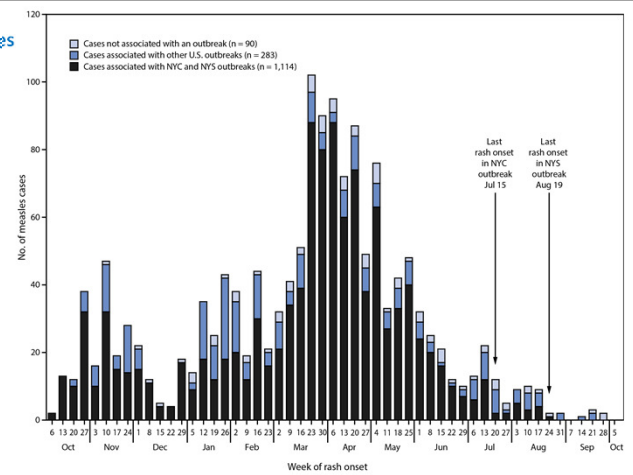


52

Extra slides

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**Reported measles cases
(N = 1,487) by week
of rash onset:**
U.S. Sept. 30, 2018 –
Oct. 1, 2019

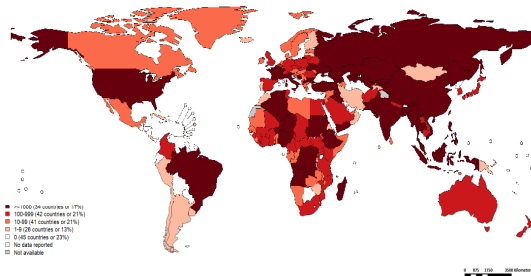


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Measles Worldwide: 2019



Top 10*	
Country	Cases
Madagascar	40784
India**	35904
Ukraine	31111
Philippines	20394
Nigeria	18644
Kazakhstan	6429
DR Congo	5742
Brazil	4379
Angola	2748
Myanmar	2711



Map production: World Health Organization, WHO, 2019. All rights reserved.
Data source: WHO Database

Disclaimer:
The numbers and names shown on the map are for illustrative purposes only and do not represent the opinion of any organization or the position of the World Health Organization. The map does not constitute a warranty, nor is it intended to be used for any purpose other than for general information. The map is not intended to be used for any purpose other than for general information. The map is not intended to be used for any purpose other than for general information.

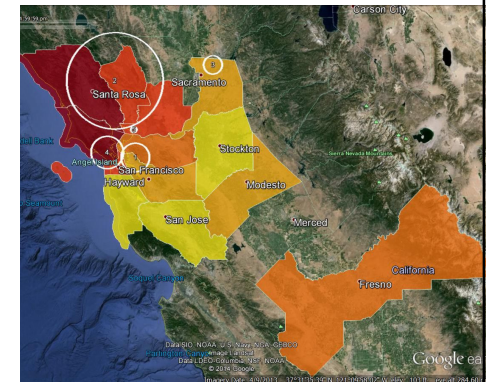
*Note: Based on data received 2019-10. Surveillance data from 2019-03 to 2019-08. **Countries with highest number of cases for the period. ***WHO classifies all suspected measles cases reported from India as measles clinically compatible if a specimen was not collected as per the algorithm for classification of suspected measles in the WHO VPD Surveillance Standards. Thus numbers might be different between what WHO reports and what India reports.

55

Geographic Clusters of Under-immunization

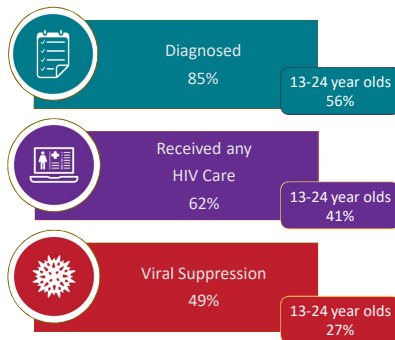
- Unimmunized tend to cluster together, creating areas at higher risk for outbreaks
- Type of exemption policy is linked to exemption frequency

Lieu TA. Pediatrics, 2015
Wang E. AJPH, 2014



56

Viral Suppression improves health and prevents new infections



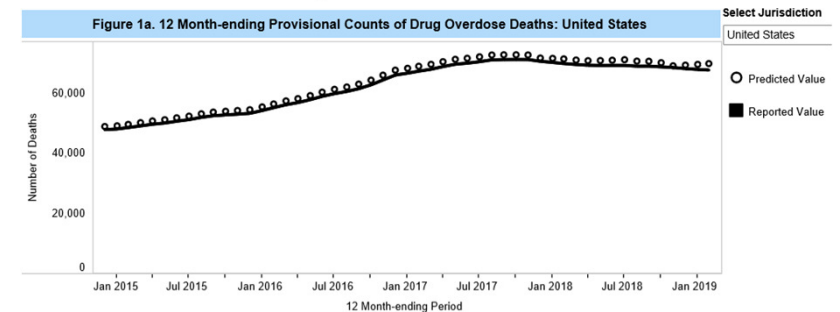
Of the **1.1 million** persons with HIV, only **half** are virally suppressed

91% of new U.S. HIV infections are transmitted from people not diagnosed or diagnosed, but not in care

57

Provisional numbers: bending curve for opioid overdose deaths

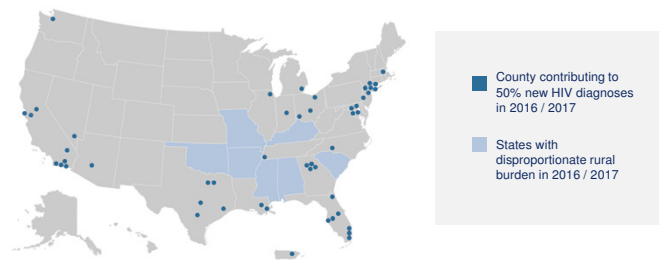
Based on data available for analysis on: **10/6/2019**



PROVISIONAL DATA Source: Ahmad FB, Rossen LM, Spencer MR, Warner M, Sutton P. Provisional drug overdose death counts. National Center for Health Statistics. 2019. Available at: <https://www.cdc.gov/nchs/news/scr/druk-overdose-data.htm>

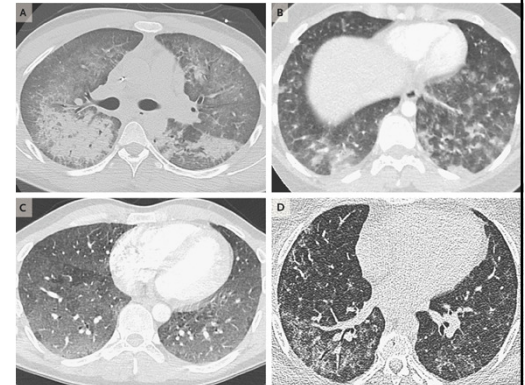
58

48 counties, 7 States with Substantial Rural HIV Burden, DC and San Juan Account for 50% of New Diagnoses



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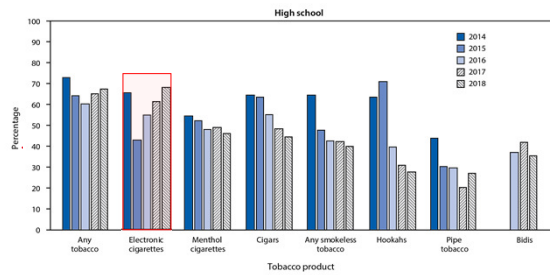
Images of E-Cigarette or Vaping-Associated Lung Injury (EVALI) in Four Patients



Travis S. Henry, M.D., N Engl J Med 2019; 381:1486-1487. DOI: 10.1056/NEJMc1911995

60

**Use of flavored e-cigarettes has increased markedly
among high school students who use tobacco products**



Percentage of current (last 30 days) users of tobacco products

Source: MMWR / October 4, 2019 / Vol. 68 / No. 39