

CDC's Firearm Surveillance Through Emergency Rooms (FASTER): Overview and Updates

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Background on Syndromic Surveillance



Syndromic Surveillance

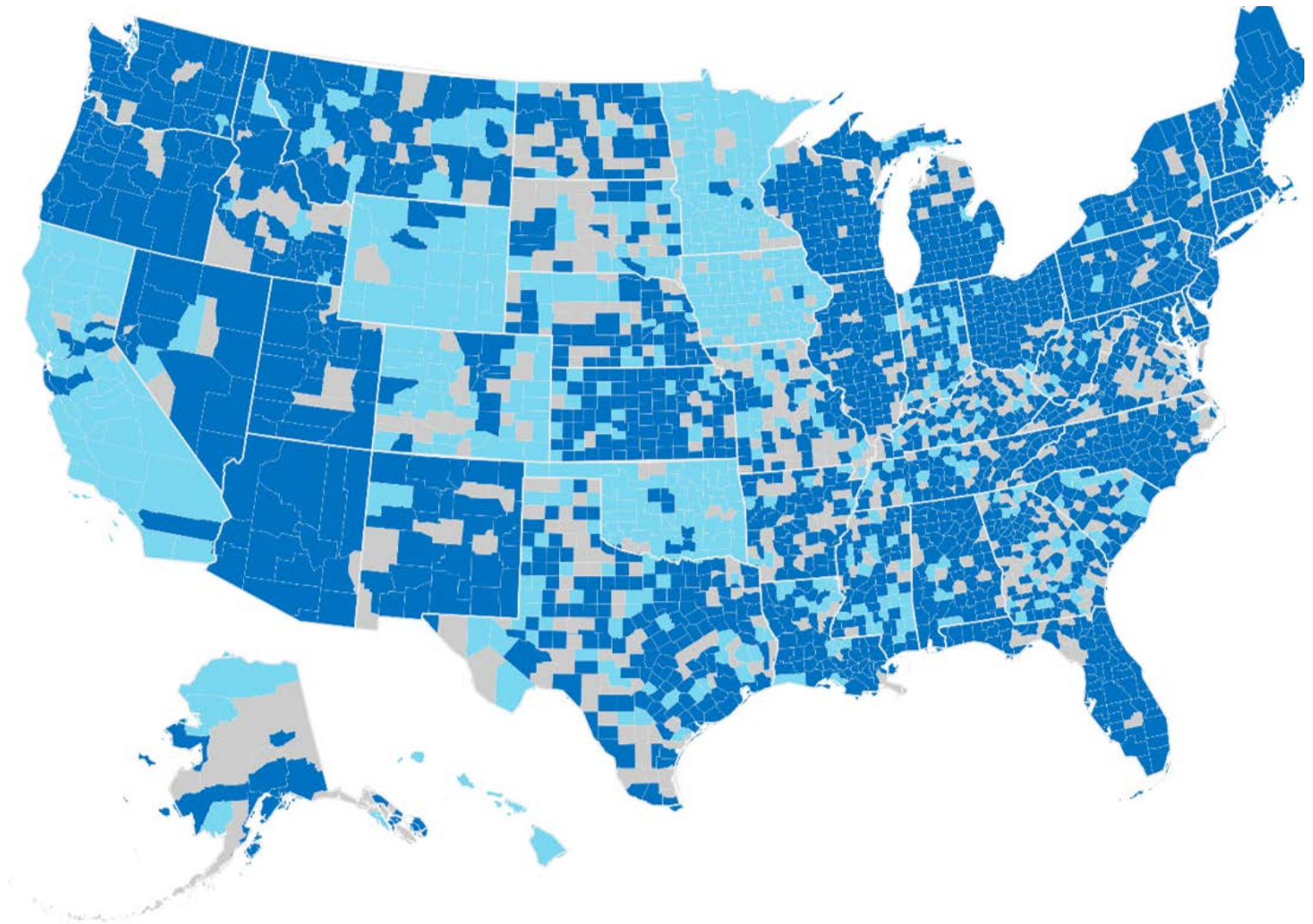


Collaborative effort between local and state health departments, CDC, and other partners

Syndromic Surveillance in the United States

- BioSense Platform covers 73% of the nation's emergency department visits

Source:
<https://www.cdc.gov/nssp/participation-coverage-map.html>



■ Recent Data in NSSP ■ No Recent Data in NSSP ■ No Eligible Facilities

The Potential of Syndromic Surveillance

- + Provide timely and actionable ED visit data at the state and local level
- + Detect trends, clustering, and changing patterns of ED visit data



Elements Included in Syndrome Definitions

Discharge Diagnosis Codes

- ICD-9-CM
- ICD-10-CM
- SNOMED

Keywords to query chief complaints

- Keywords
 - Misspellings and typos
 - Acronyms and abbreviations
 - Clinical and lay terms
- Negation terms

Syndrome Definition Collaborators



ICD-9-CM Codes for Firearm Injury Syndrome

- + E922(.0-.3, .8-.9) Accident cause by firearm
- + E955(.0-.4, .9) Suicide and self-inflicted injury by firearms
- + E965(.0-.4) Assault by firearms
- + E970 Injury due to legal intervention by firearms
- + E979.4 Terrorism involving firearms
- + E985(.0-.4) Injury by firearms, undetermined intent

ICD-10-CM Codes for Firearm Injury Syndrome

Includes codes for the following injury intents due to firearms:

- + Unintentional
 - + Intentional self-harm
 - + Assault
 - + Undetermined intent
 - + Legal intervention
 - + Terrorism
-
- **Includes codes for initial encounters only**

ICD-10-CM Codes for Firearm Injury Syndrome - Continued

Excludes codes for:

- + Gas, air, or spring-operated guns (such as air guns, BB guns, paintball guns)
- + Rubber bullets
- + Rifle pellets
- + War operations
- + Military operations

SNOMED-CT Codes for Firearm Injury Syndrome

41430008	Shotgun slug, device (physical object)
56768003	Gunshot wound (morphologic abnormality)
63409001	Struck by firearm discharge (event)
69861004	Firearm, device (physical object)
77301004	Shotgun shot , device (physical object)
86122002	Bullet, device (physical object)
111050005	Bullet fragment, device (physical object)
219257002	Injury due to legal intervention by firearm (disorder)
283545005	Gun shot wound (disorder)
218081007	Accident caused by firearm missile (event)
218086002	Accident caused by automatic shotgun (event)
218082000	Accident caused by handgun (event)
218087006	Accident caused by hunting rifle (event)
218088001	Accident caused by military firearms (event)
269796009	Shotgun accident (finding)
242869008	Assault by firearms (event)
219199009	Assault by handguns (event)
219200007	Assault by pistol (event)
219201006	Assault by revolver (event)
219204003	Assault by hunting rifle (event)
219205002	Assault by military firearm (event)
219203009	Assault by shotgun (event)
219198001	Assault by firearms and explosives (event)
219142001	Suicide or self-inflicted injury by firearms and explosives (navigational concept)
219143006	Suicide or self-inflicted injury by handgun (navigational concept)
219144000	Suicide or self-inflicted injury by shotgun (navigational concept)
219145004	Suicide or self-inflicted injury by hunting rifle (navigational concept)
219146003	Suicide or self-inflicted injury by military firearm (navigational concept)
287184008	Attempted suicide - firearms (event)
287193009	Suicide - firearms (event)

Keywords to Query Chief Complaints

Keywords (and common spellings and misspellings) to include:

- + GSW
- + Gunshot, buckshot (and gun shot, gun shoot, gun shout)
- + Firearm, handgun, pistol, revolver, rifle, shotgun
- + Been shot, I was shot, I got shot
- + (Hit, ricochet, or graze) and (Bullet)
- + (Gun) and (Wound)

Keywords to Query Chief Complaints - Continued

Negation terms (and common spellings and misspellings) to exclude:

- No gun
- Remove gun
- Heard or hearing gun
- Hit head or hit my head
- Kickback
- Water, pellet, BB, rubber, paint, nerf, air, spring, nail, staple, stun, laser or Taser guns
- Pistol whip
- Bloodshot
- Scope
- Fake
- Allergy or injection shot
- Follow up
- Chronic
- Wound check, care, or infection
- Drainage
- History of GSW
- Ago, past, prior, previous, or old GSW
- Z51.89 (after care)



FASTER Initiative





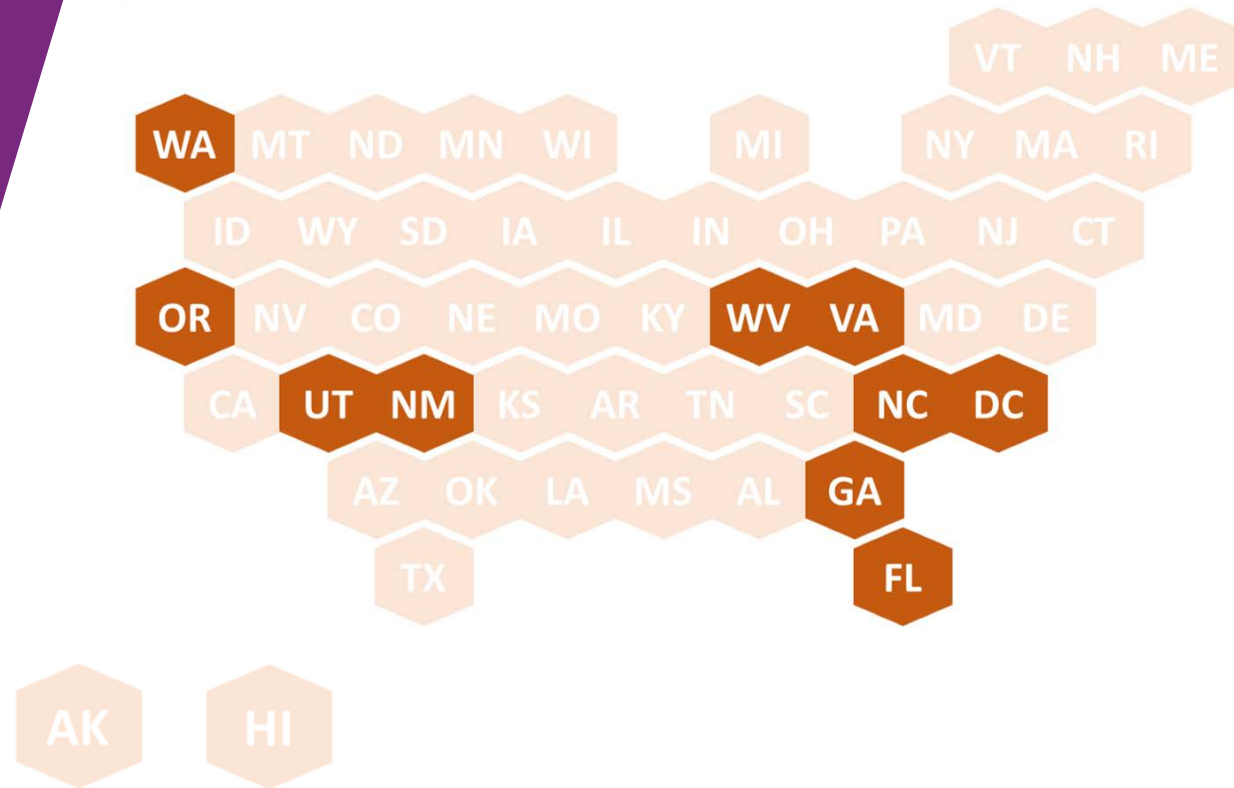
FASTER Objectives

- + **Increase the timeliness** of aggregate reporting of ED visits for nonfatal firearm injuries
- + **Disseminate surveillance findings** to key stakeholders working to prevent or respond to firearm injuries

FASTER Recipients

+ 10 health departments funded in
Fall 2020

- District of Columbia
- Florida
- Georgia
- New Mexico
- North Carolina
- Oregon
- Utah
- Virginia
- Washington
- West Virginia



+ Increase timeliness of aggregate reporting of ED visits for firearm injuries

- Share real-time and historical case-level syndromic surveillance data
- Create, validate, and monitor quality of indicator syndrome definitions
- Verify state and county aggregate quarterly reports
- Share methodology and aggregated reports with CDC

FASTER Objective 1



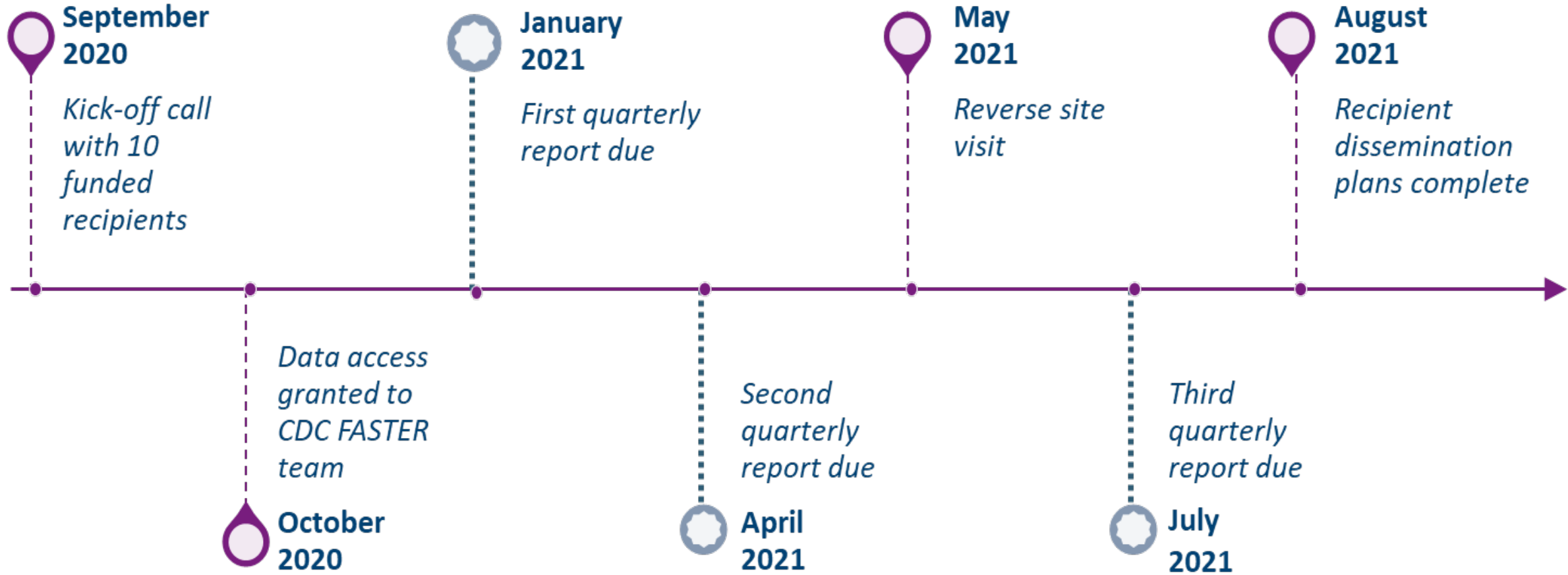
+ Disseminate surveillance findings to key stakeholders

- Create a dissemination plan by August 2021
- Build and strengthen relationships with key stakeholders
- Implement dissemination strategies

FASTER Objective 2



Year 1 Timeline for FASTER



Limitations of Syndromic Surveillance in Monitoring Firearm Injuries

- + Results are not generalizable to facilities not participating in NSSP
- + Healthcare facility participation in NSSP can vary across months.
- + Data on patient demographics, including race/ethnicity, incomplete
- + Data transmitted to NSSP in near real-time and not considered finalized data sets

Thank you

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The findings and opinions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.





Questions?

