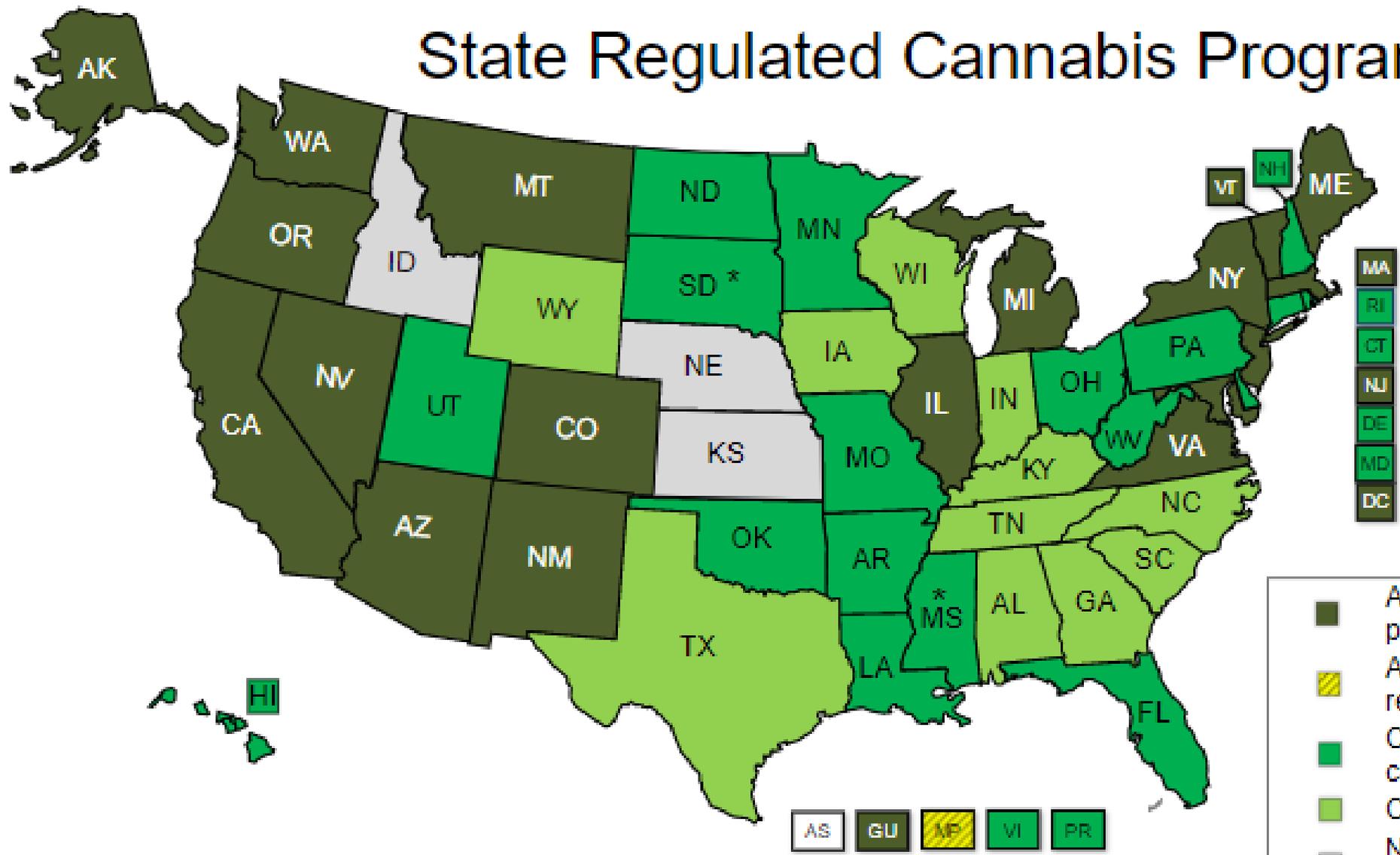


April 14, 2021: South Dakota's overturned adult-use ballot measure is currently under appeal as of March 11, 2021.

# State Regulated Cannabis Programs



Overall, 47 states have some form of cannabis allowance, only Idaho, Kansas and Nebraska do not have any public programs for marijuana use.

- Adult & medical use regulated program
- Adult use only no medical regulated program
- Comprehensive medical cannabis program
- CBD/Low THC program
- No public cannabis access program

Limited adult possession and growing allowed, no regulated production or sales: DC

# Impact of COVID 19

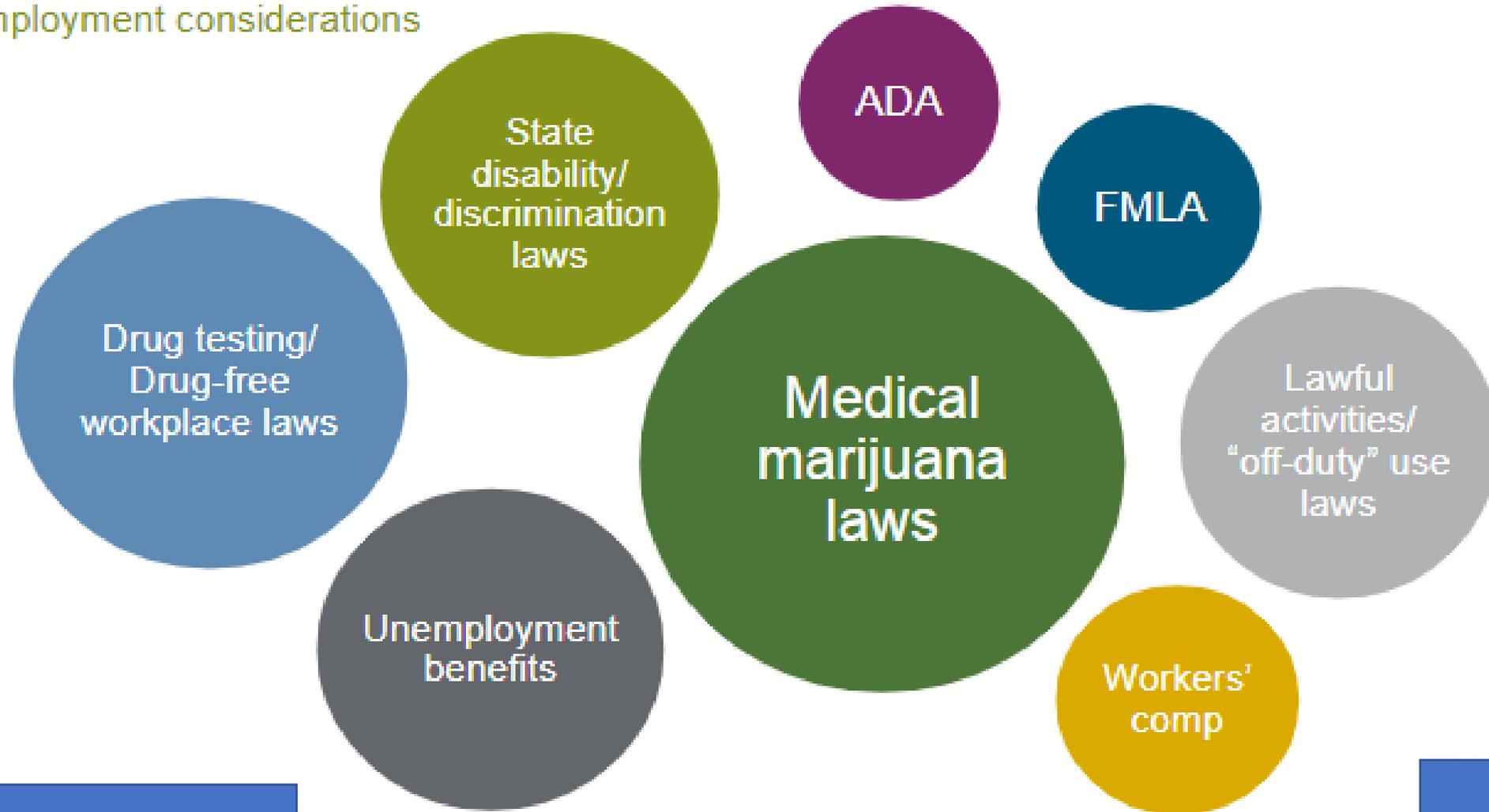
- The stress of the COVID-19 pandemic and other intense current events of the past year has led an increased number of individuals to seek medical cannabis for mental health reasons, displacing chronic pain as the main reason for medical cannabis use
- The national study was conducted by Veriheal, a healthcare technology company that provides marijuana education and connects prospective patients with medical marijuana prescribers, along with the London School of Economics, the University of Southern California, the University of Maryland, and the Cultivating Research Education and Advocacy (CREA) Group. Findings were presented at the American Chemical Society's recent national conference.
- Of the patients studied, 55% said their main reason for using marijuana was "to feel happy." Patients' desire to feel "happy" increased 46% year-over-year.
- Sign-ups for medical cannabis consultations and appointments (which represent adoption) rose in tandem with COVID-19 case spikes, along with periods around Black Lives Matter-related protests during Summer 2020, the pre-election period, and around the time of turmoil at the U.S. Capitol in January 2021.



# Medical marijuana laws

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## Employment considerations



# Cannabis Testing in the



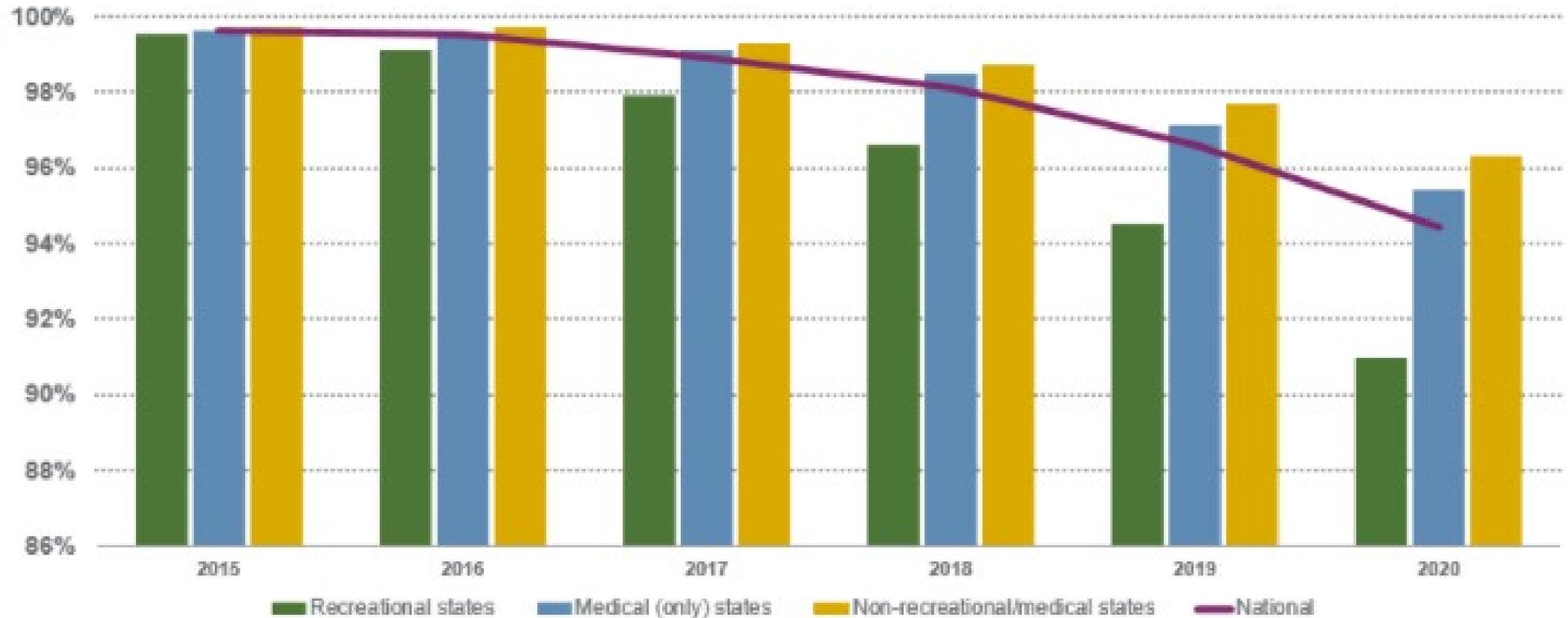
## Quest Diagnostics Drug Testing Index™

Benchmark for trends of drug use among the American workforce

- Overall positivity increased in the general U.S. workforce driven by Marijuana
- Marijuana workforce drug test positivity continues double-digit increase to keep overall drug positivity rates at historically high levels
  - All three specimen types saw double-digit increases from 2019 to 2020: Urine increased 16.1%, Oral fluid increased 35.2% and Hair increased 22.5%.
- Post-accident marijuana positivity increases have outpaced increases in pre-employment positivity for both workforces
- Accommodation and Food Services has held the top spot for industry-specific positivity for 6 straight years

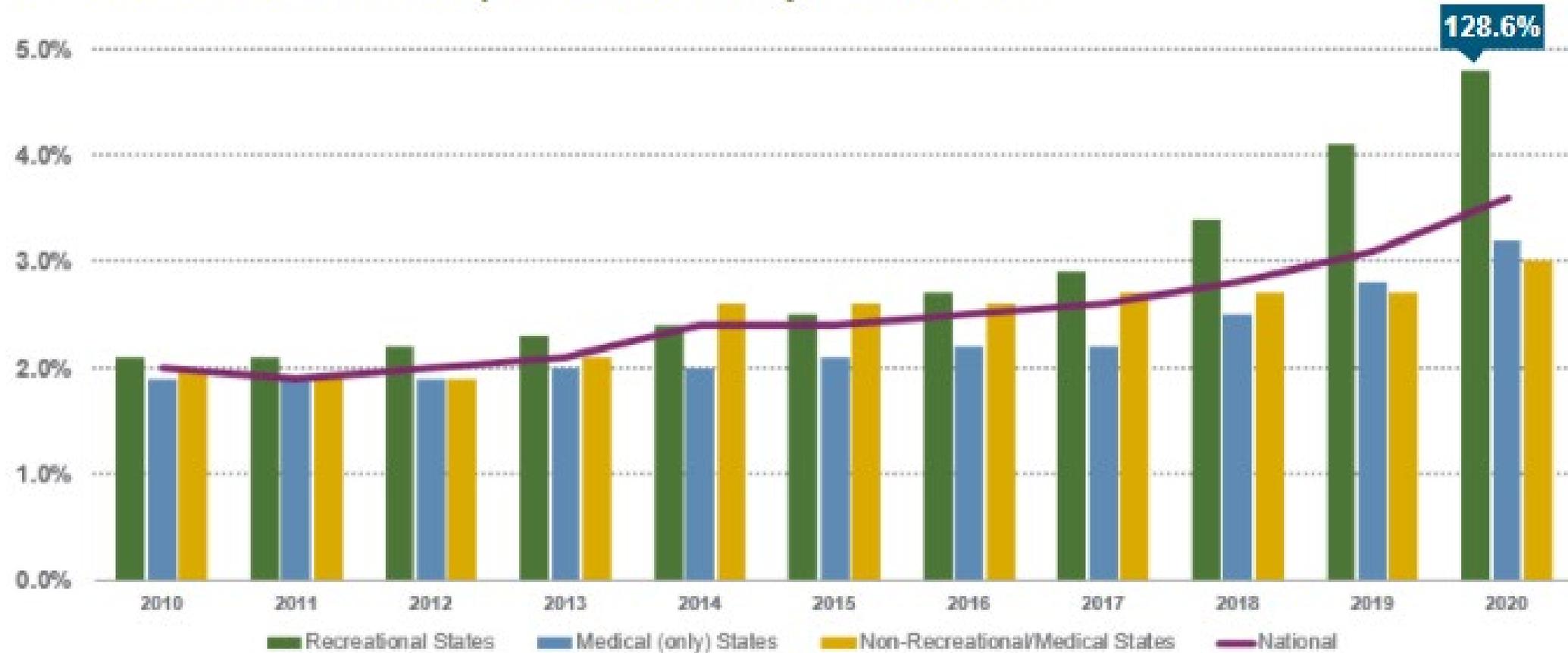
# Drug testing including marijuana in general US workforce urine

By current state marijuana law status



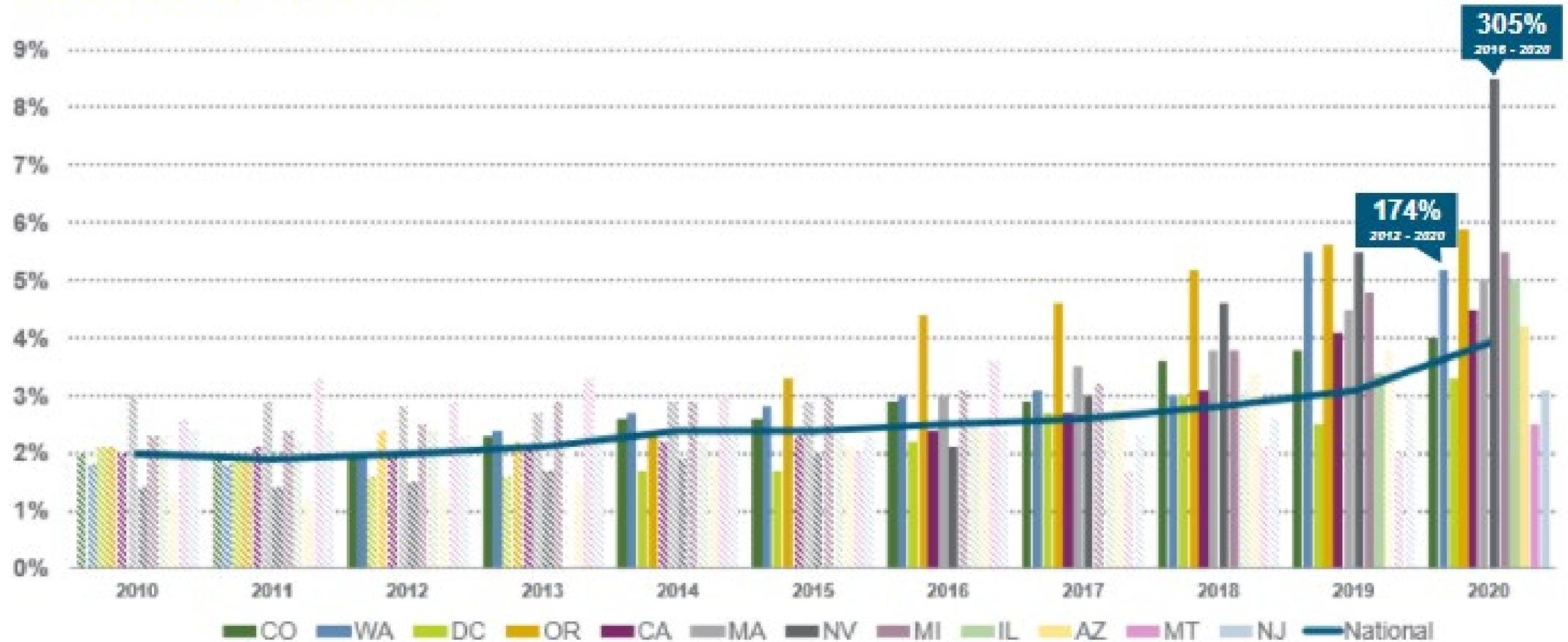
# Marijuana positivity

General US workforce urine by current state marijuana law status



# Marijuana positivity in recreational use states

## General US workforce urine



## State declarations

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11 states + Washington, D.C.

States that have made positive statements that no employment protections exist

Alaska  
Arizona  
California  
Colorado  
Illinois  
Massachusetts  
Michigan  
New Mexico  
Oregon  
Vermont  
Washington  
Washington, D.C.

5 states

States with limited or unclear employment protections

Maine  
Montana  
Nevada (current-employees)  
New Jersey  
Virginia

# Impairment

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## Limited and lack of consensus

- Not required to permit employee working under the influence or impaired
- Not required to permit marijuana usage at the workplace or during work hours

## Some state laws (marijuana/DUI laws) relate to impairment for marijuana

<b>Some states have “per se” or “presumption” limits; no consensus on limit</b>	<b>Recent legislation contains “per se” limits for certain safety-sensitive positions</b>
<ul style="list-style-type: none"><li>• 5 ng/mL THC in blood (CO, MT, WA)</li><li>• 2 ng/mL THC in blood (OH, NV)</li><li>• 1 ng/mL THC in blood (PA)</li></ul>	<ul style="list-style-type: none"><li>• 10 ng/mL THC in blood (PA)</li><li>• 3 ng/mL THC in blood (WV)</li></ul>

There is currently no standard workplace drug test that provides information on “impairment”

# CBD = Can Be Discharged

## CBD and lab testing

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### Confirmation testing for THC-COOH & THC

**100% (Pure) CBD will not cause a THC positive**  
(in properly validated methods)

- CBD is not metabolized to either THC or THC-COOH
- Workplace urine and hair drug testing confirms specifically for THCA, which is analytically distinct from CBD
- Workplace oral fluid confirms for THC, which also is analytically distinct from CBD
- Mass spectrometry will not confuse CBD with either THC or THC-COOH



# CBD manufacturing

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## Contamination

**100% (Pure) CBD will not cause a THC positive**  
(in properly validated methods)

- Currently, CBD production is not federally regulated
- No dosage standards have been developed
- No purity or potency standards are enforced
- CBD content is highly variable among products
- One study found 69% of 84 CBD products were inconsistent with labeling
- Purification and quality control is expensive for producers

