

Appendix Table 1. Attributes of prescription drug monitoring programs pertinent to crash report linkage, investigation, and analyses by state and the District of Columbia (n=51)

State	Name of PDMP	Year Legislation Enacted	Year Operational	Agency Responsible for Operation	Primary Source of Funding	Schedules/Types of Drugs Monitored	Release of De-identified Data for Research, Epidemiological, or Educational purposes	Comments on De-identified Data Permission, if applicable	Law Enforcement Access to Data (PDMP Reports) and under what Circumstances	Reports Available to Law Enforcement	ASAP (American Society for Automation in Pharmacy) Version Used	Requires Substance-related Driving Convictions to be Entered into PDMP (e.g., DUI, DWI)	Potential linkage elements (K requirement)										
													Name	Address	Phone Number	Date of Birth	Gender	Social Security Number	Driver's License Number	Other Forms of ID (e.g., State-issued ID, Passport, Military ID)	Ability to Collect More than One Form of Personal ID	Prescription Payment Method/Type	Source of Information on Data Elements/Identifiers in PDMP
Alabama	Prescription Drug Monitoring Program	2005	2006	Department of Health	Licensing/CSR (controlled substance registration) Fees	Schedules II-V, Drugs of Concern (cocaine, amphetamine, opiates, benzodiazepines, barbiturates, and combinations, chlorzoxiprone and combination)	No Statutory Authority	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	older version, Version 4.1	No	Yes (first and last name required; middle name not required)	Yes (required)	Yes (not required)	Yes (required)	Yes (required)	Yes (strongly encouraged as primary ID)	Yes (can collect as form of ID)	Yes (can collect as form of ID)	Yes (not required)	Yes (required)	https://www.alabamagovernor.gov/pdfs/austr/austr_data/submissiondispenseguide.pdf
Alaska	Prescription Drug Monitoring Program	2008	2011	Pharmacy Board	Federal Grant	Schedules II-IV	Authorized and Engaged Release of PDMP Data	N/A	Yes: State Law Enforcement if active investigation, Federal Law Enforcement, if Court order/search warrant	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	older version, Version 4.1	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://www.commerce.alaska.gov/en/portals/2/pdp/pma_austr_data_submission_dispenseguide.pdf
Arizona	Controlled Substances Prescription Monitoring Program	2007	2008	Pharmacy Board	State General Revenue	Schedules II-V	Authorized and Engaged Release of PDMP Data	Upon approval by PMP	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://pharmacy.pmp.az.gov/austr/austr_data_submission_dispenseguide.pdf	
Arkansas	Prescription Drug Monitoring Program	2011	2013	Department of Health	State General Revenue	Schedules II-V, Drugs of Concern (anticholinergics)	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (required)	http://www.arkansas.gov/files/2017/AR_Data_Submission_Dispenser_Guide.pdf
California	CURES Controlled Substance Utilization Review and Evaluation System	1939	1939	Law Enforcement Agency	Licensing/CSR Fees	Schedules II-IV	Authorized and Engaged Release of PDMP Data	Upon approval by PMP	Yes: Prescriber/Dispenser Reports, if active investigation; Patient Reports if court order/search warrant	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	older version, Version 4.1	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (required)	https://www.aacurses.com/AM/Content.nsf/Courses_Instructions.pdf
Colorado	Electronic Prescription Drug Monitoring Program	2005	2007	Pharmacy Board	Licensing/CSR Fees	Schedules II-V	Authorized and Engaged Release of PDMP Data	Must enter into a contract or MOU with the Board of Pharmacy	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	http://reentry.net/austr/files/ospdm/austr_data_submission_dispenseguide_v1.3.pdf
Connecticut	Controlled Prescription Monitoring Program and Reporting System	2006	2008	Consumer Protection Agency	State General Revenue	Schedules II-V, Drugs of Concern	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://portal.ct.gov/-/media/DCP/drug_control/PMP.pdf
Delaware	Prescription Drug Monitoring Program	2010	2012	Professional Licensing Agency	Licensing/CSR Fees	Schedules II-V, Drugs of Concern	Authorized and Engaged Release of PDMP Data	Requires written agreement with PMP	Yes if active investigation	Patient & Prescriber Histories & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://doh.delaware.gov/austr/austr_data_submission_dispenseguide_v1-3-1.pdf
Florida	Florida Prescription Drug Monitoring Program	2009	2011	Department of Health	State General Revenue	Schedules II-V	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (required)	http://reentry.net/austr/files/Florida/2008/FL_Dispenes_Guide_V1.pdf
Georgia	Georgia Prescription Monitoring Program	2011	2013	Department of Health	State General Revenue	Schedules II-V	Authorized to Release	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (required)	http://dhs.georgia.gov/files/04/gor/ga.gov/Data/CAN/PMP/PMPDataDispenseGuideV4.0.pdf
Hawaii	Electronic Prescription Accountability System	1943	1943	Law Enforcement Agency	State General Revenue	Schedules II-V, Drugs of Concern	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient History	older version, Version 4.1	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (not required but suggested to supply)	https://dhs.hawaii.gov/wp-content/uploads/2016/12/HI-PDMP-Data-Submission-RESPONSE-Guide.pdf
Idaho	Idaho Prescription Monitoring Program	1967	1967	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	older version, Version 4.1	No	Yes (first and last name required; middle name not required if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://reg.idaho.gov/pmp/austr-dispenseguide-2017-IdahoPMP-AWARIS-Interface-Specification-Idaho-Submission-Frontend-Guide.pdf
Illinois	Illinois Prescription Monitoring Program Prescription Information Library	1991	1998	Department of Health	Federal Grant	Schedules II-V, Drugs of Concern	Authorized to Release	Requires a contract or MOU with PMP	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required)	Yes (required)	No	Yes (required)	Yes (required)	No	No	No	No	Yes (required)	https://www.illmp.gov/PDF/NewsAndInfo
Indiana	Indiana Scheduled Prescription Electronic Collection and Tracking	1997	1998	Professional Licensing Agency	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (anticholinergics, pseudoephedrine)	Authorized and Engaged Release of PDMP Data	Requires a contract or MOU with PMP	Yes if active investigation	Patient & Prescriber Histories & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name optional)	Yes (required)	No (no data field)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	No (no data field)	Yes (required)	https://www.in.gov/pla/inspect/files/INStateDataCollectionandTrackingDispenseGuide.pdf
Iowa	Iowa Prescription Monitoring Program	2006	2009	Pharmacy Board	Licensing/CSR Fees	Schedules II-IV	Authorized to Release	Requests must be reviewed and approved by PMP Advisory Council	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	older version, Version 4.1	No	Yes (first and last name required; no field for middle name)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	No (no data field)	Yes (required)	https://pharmacy.iowa.gov/austr/austr_data_submission/2016/12/austr_data_submission_dispense_guide_v3-1.pdf
Kansas	Kansas Tracking and Reporting of Controlled Substances	2008	2011	Pharmacy Board	Regulatory Board Fund	Schedules II-IV, Drugs of Concern (Benzilidol, acetaminophen, caffeine, pseudoephedrine, combination with caffeine)	Authorized to Release	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required)	Yes (not required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://pharmacy.kan.gov/docs/default-source/krts/pmp-sharing/austr-dispenseguide-v2-0-data-submission-guide.pdf?sfvrsn=ca2a0c1_0
Kentucky	Kentucky All Schedule Prescription Electronic Reporting	1998	1999	Department of Health	State General Revenue	Schedules II-V, Drugs of Concern (Naloxone (Schedule IV), Gabapentin (Schedule V))	Authorized and Engaged Release of PDMP Data	MOU between Cabinet and research agency. Completion of Institutional Review Board if appropriate	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required as patient ID if available)	Yes (required ISSN not available)	No (no data field)	No (no data field)	Yes (required)	https://ksparepharm.cdk.ky.gov/KASPER_Controller_Substance_Reporting_Guide.pdf
Louisiana	Prescription Monitoring Program	2006	2008	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (anticholinergics, pseudoephedrine, combination with caffeine)	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	http://www.pharmacy.la.gov/austr/dispen/PMP_LA_Dispenes_Guide_2016_0523.pdf
Maine	Prescription Monitoring Program	2003	2004	Substance Abuse Agency	State General Revenue	Schedules II-IV	Authorized and Engaged Release of PDMP Data	used a MOU or data sharing agreement that has been approved by PMP	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://www.maine.gov/dhs/austr/austr_data_submission/pmp/austr_data_submission_dispenseguide_2016.pdf
Maryland	Prescription Drug Monitoring Program	2011	2013	Substance Abuse Agency	State General Revenue	Schedules II-V	Authorized and Engaged Release of PDMP Data	Current DDMH policy requires that submission of all research requests for Department-controlled data be approved by the DDMH IRB	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but suggested to supply if available)	Yes (required)	https://dhs.health.maryland.gov/pmp/Documents/MD2012PMP_DispenesGuideforSubmissiontoFrontend.pdf	
Massachusetts	Prescription Monitoring Program	1992	1994	Department of Health	State General Revenue	Schedules II-V, Drugs of Concern (gabapentin)	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	No (system specifically requests that SSN not be submitted)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but suggested to supply if available)	Yes (required)	https://www.mass.gov/files/documents/2018/08/03/pmp_data_submission_guide.pdf
Michigan	Michigan Automated Prescription System	1988	1989	Professional Licensing Agency	State General Revenue	Schedules II-V	Authorized and Engaged Release of PDMP Data	used MOU in place	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	older version, Version 4.1	No	Yes (first and last name required; middle name not required if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://www.michigan.gov/documents/austr/austr_data_submission_dispenseguide_076662_7.pdf
Minnesota	Minnesota Prescription Monitoring Program	2007	2010	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (Gabapentin, Bupropion, Human growth hormone (C-II), Charitin (Gonadorelin (C-III), Pseudoephedrine and Ephedrine (C-V))	No Statutory Authority	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	http://pmp.pharmacy.state.mn.us/austr/austr_data_submission/MinnesotaData-Submission-Guide-for-Dispenser-Front.pdf

State	Name of PDMP	Year Legislation Enacted	Year Operational	Agency Responsible for Operation	Primary Source of Funding	Schedules/Types of Drugs Monitored	Release of De-identified Data for Research, Epidemiological, or Educational Purposes	Comments on De-identified Data Permissions, if applicable	Law Enforcement Access to Data (PDMP Reports) and under what Circumstances	Reports Available to Law Enforcement	ASAP (American Society for Automation in Pharmacy) Version Used	Requires Substance-related Driving Convictions to be Entered into PDMP (e.g., DUI, DWI)	Name	Address	Phone Number	Date of Birth	Gender	Social Security Number	Driver's License Number	Other Forms of ID (e.g., State-issued ID, Passport, Military ID)	Ability to Collect More than One Form of Personal ID	Prescription Payment Method/Type	Source of Information on Data Release/Identifiers in PDMP	
Mississippi	Mississippi Prescription Monitoring Program	2005	2005	Pharmacy Board	Regulatory Board Fund	Schedules II-V, Drugs of Concern (antibiotics)	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://www.mhp.ms.gov/Documents/AW4kKc_1astmfc6_Specification.pdf	
Missouri	St Louis County PDMP (not statewide)	2016	2017	Department of Health	Federal Grant	Schedules II-IV	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.0	No	Yes (first and last name required; middle name not required if available)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (not required but suggested to supply)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if available)	Yes (required)	https://www.stlouiscounty.mo.gov/Portals/0/docs/DocumentCenter/View/12000/PMP%20Dispenser%20Guide_v1.0_PDML.pdf	
Montana	Montana Prescription Drug Registry	2011	2012	Pharmacy Board	Licensing/CSR Fees	Schedules II-V	Authorized and Engaged Release of PDMP Data	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient & Prescriber Histories & Query Audit Trail	older version; Version 4.1	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (not required but suggested to supply)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	http://boards.hsd.dli.mt.gov/Portals/1/33/Document%20s/psd/mpdr/dli-hsd-mpdrv1.pdf	
Nebraska	Nebraska Health Information Initiative	2011	2011	Department of Health	Federal Grant	Schedules II-V, Drugs of Concern (all prescription medications)	Authorized and Engaged Release of PDMP Data	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	No access	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	http://dhs.ne.gov/publichealth/PDM/P/Documents/Nebraska%20PDM%20Dispenser%20Guidelines_v1.0.pdf	
Nevada	Prescription Controlled Substance Abuse Prevention Task Force	1995	1997	Pharmacy Board	Licensing/CSR Fees	Schedules II-IV	Authorized to Release	N/A	Yes if active investigation	Patient & Prescriber Histories & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	http://nep.nv.gov/uploads/Res/Forms/2010/ControlledSubstanceAbusePreventionTaskForceSubmissionDispenserGuide.pdf	
New Hampshire	New Hampshire PDMP	2012	2014	Pharmacy Board	State General Revenue	Schedules II-IV	Authorized to Release	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (not required but suggested to supply)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.sph.nh.gov/pharmacy/docs/controls/ph-pdmp-data-submission-dispenser-guide.pdf	
New Jersey	New Jersey Monitoring and Reporting System	2008	2011	Law Enforcement Agency	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (Human growth hormone, gabapentin)	Authorized and Engaged Release of PDMP Data	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.dcr.state.nj.gov/PMP/Dispenser%20Data%20Submission-Dispenser-Guide.pdf	
New Mexico	New Mexico Controlled Substance Prescription Monitoring Program	2004	2005	Pharmacy Board	Licensing/CSR Fees	Schedules II-V	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	http://www.ammp.org/Documents/NM/MSP/Dispenser%20Guidelines%20of%20Dispenser%20Guides.pdf	
New York	Official Prescription Program	1972	1973	Department of Health	Other Funding	Schedules II-V, Drugs of Concern (Chronic Ginkgolipin (HCO) & C-11)	No Statutory Authority	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.health.ny.gov/professionals/records/documents_data_submission/officialprescription_guide.pdf	
North Carolina	North Carolina Controlled Substance Reporting System	2005	2007	Substance Abuse Agency	State General Revenue	Schedules II-V	Authorized and Engaged Release of PDMP Data	PMP evaluates on case by case basis and send to PMP Review Board for approval	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://info.springsouth.com/html/PDF/Dispenser%20Data%20Submission%20Dispenser%20Guide_v1.0.pdf	
North Dakota	North Dakota Prescription Drug Monitoring Program	2005	2007	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (Gabapentin)	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required if available)	Yes (required)	Yes (required if available)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://www.mndpharmacy.com/jdfs/AWARFinal.pdf	
Ohio	Ohio Automated Rx Reporting System	2005	2006	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (Gabapentin, Medical Marijuana)	Authorized and Engaged Release of PDMP Data	Must meet Board policy requirements	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.ohio.gov/documents/Reporting%20of%20OARRES.pdf	
Oklahoma	Oklahoma Prescription Monitoring Program	1990	1991	Law Enforcement Agency	Federal Grant	Schedules II-V, Drugs of Concern	Authorized to Release	de-id data to Dept of Mental Health & Substance Abuse Services and State Board of Health	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://www.ok.gov/ohdhd/documents/OH%20PMP%20Dispenser%20Guide_v30kx04.pdf	
Oregon	Oregon Prescription Drug Monitoring Program	2009	2011	Department of Health	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (pseudophedrine)	Authorized and Engaged Release of PDMP Data	Approval required by DEA; must submit data request and sign a data use agreement	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient, Prescriber & Dispenser Histories	older version; Version 4.1	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (not required)	http://www.oregon.gov/health/files/12-07/Oregon_PDMP_Data_Submission_Dispatcher_Guide.pdf	
Pennsylvania	Prescription Monitoring Program	1972	1973	Department of Health	State General Revenue	Schedules II-V	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.health.pa.gov/topics/Documents/Programs/PMP/PMP/PMP_DispenserGuide_v4.pdf	
Rhode Island	Prescription Monitoring Program	1978	1979	Department of Health	Federal Grant	Schedules II-IV	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	No access	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	http://health.ri.gov/publications/guide%20Dispenser%20DispenserGuideRIPMF.pdf	
South Carolina	South Carolina Reporting & Identification Prescription Tracking System	2006	2008	Department of Health	Licensing/CSR Fees	Schedules II-IV	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient & Prescriber Histories & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://rphs.sc.gov/sites/default/files/0405HealthDataUseAgreementImplementationGuide.pdf	
South Dakota	South Dakota Prescription Drug Monitoring Program	2010	2011	Pharmacy Board	Regulatory Board Fund	Schedules II-V	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (not required)	https://doh.sd.gov/boards/pharmacy/assess/SD_DataSubmitter-Guide.pdf	
Tennessee	Controlled Substance Monitoring Database	2003	2006	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	older version; Version 4.1	No	Yes (first and last name required; no field for middle name)	Yes (required)	No (no data field)	Yes (required)	Yes (required)	No (no data field)	No (no data field)	No (no data field)	No (no data field)	Yes (required)	https://www.harscopt.com/docs/DataReportingManualRTP.pdf	
Texas	Texas Prescription Program	1981	1982	Pharmacy Board	State General Revenue	Schedules II-V	Authorized to Release	state allows, at the Director's discretion, to share information with researchers	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required; middle name not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	http://www.pharmacy.texas.gov/files_PDF/Dispenser_Guide.pdf	
Utah	Utah Controlled Substance Database Program	1995	1996	Professional Licensing Agency	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (butalbital/acetaminophen products)	Authorized to Release	N/A	Yes if Court/Grand Jury Process (e.g., Court Order, Subpoena, Search Warrant, Grand Jury)	Patient & Prescriber Histories	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	No	Yes (required)	Yes (required)	No	No	No	No	No	No	https://dopl.utah.gov/programs/cslh/R20-377.pdf
Vermont	Vermont Prescription Monitoring System	2008	2009	Department of Health	Other Funding	Schedules II-IV	Authorized to Release	Department of Health Use of Data: The Department may use the data contained in the VPMIS database for health promotion purposes including the publication of aggregate, de-identified data.	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.0	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://www.healthvermont.gov/files/0404100100documents.pdf#ADAP_VPMS_Data_Collection_Manual.pdf	
Virginia	Virginia Prescription Monitoring Program	2002	2003	Professional Licensing Agency	Other Funding	Schedules II-V, Drugs of Concern (Gabapentin, Naloxone)	Authorized and Engaged Release of PDMP Data	MOU needs to be submitted and approved by Director	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (potential patient identifier, not required but suggested to supply if available)	Yes (not required but accepted if submitted)	Yes (required)	https://dhp.virginia.gov/dhp_programs/pmp/docs/VAPMPDispenseGuide_v4.pdf	
Washington	Prescription Review	2007	2011	Department of Health	Federal Grant	Schedules II-V, Drugs of Concern	Authorized and Engaged Release of PDMP Data	Must not for statistical, research, or educational purposes after removing information that could identify individual patients, prescribers, and persons who	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required; middle name not required but suggested to supply if available)	Yes (required)	Yes (not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	http://www.wa.gov/documents/000001/2017/WA_PMP_Dispenser_Implementation_Guide_ASAP_4.2.pdf	

State	Name of PDMP	Year Legislation Enacted	Year Operational	Agency Responsible for Operation	Primary Source of Funding	Schedules/Types of Drugs Monitored	Release of De-identified Data for Research, Epidemiological, or Educational purposes	Comments on De-identified Data Permission, if applicable	Law Enforcement Access to Data (PDMP Reports) and under what Circumstances	Reports Available to Law Enforcement	ASAP (American Society for Automation in Pharmacy) Version Used	Requires Substance-related Driving Convictions to be Entered into PDMP (e.g., DUI, DWI)	Name	Address	Phone Number	Date of Birth	Gender	Social Security Number	Driver's License Number	Other Forms of ID (e.g., State Issued ID, Passport, Military ID)	Ability to Collect More than One Form of Personal ID	Prescription Payment Method/Type	Source of Information on Data Elements/Identifiers in PDMP
Washington, District of Columbia	Prescription Drug Monitoring Program	2014	2016	Department of Health	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (Cyclophosphamide, Rituximab)	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required, middle name not required but suggested to supply if available)	Yes (required)	Yes (required)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://ahh.dc.gov/sites/default/files/dc/sites/ahh/publication/attachments/DCL%20PDMP%20Access%20to%20Dispenser%20Guid%20Final.pdf
West Virginia	Controlled Substance Automated Prescription Program	1995	1995	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern (opioid antagonists, gabapentin)	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required, middle name not required but suggested to supply if available)	Yes (required)	Yes (required if available)	Yes (required)	Yes (required)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (potential patient identifier for required ID)	Yes (not required but accepted if submitted)	Yes (required)	https://www.qualityinsights-ghs.org/files/SIP2016/PCF/App%20V-Dispenser-Guide_08.14.16
Wisconsin	Wisconsin Prescription Drug Monitoring Program	2010	2013	Professional Licensing Agency	Licensing/CSR Fees	Schedules II-V, Drugs of Concern	Authorized and Engaged Release of PDMP Data	N/A	Yes if active investigation	Patient, Prescriber & Dispenser Histories	Version 4.2	No	Yes (first and last name required, middle name not required but accepted if submitted)	Yes (required)	Yes (not required but accepted if submitted)	Yes (required)	Yes (required)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (potential patient identifier, not required but accepted if submitted)	Yes (not required but accepted if submitted)	Yes (required)	https://doh.wis.gov/download/files/mo-WIPDMPDataSubmissionGuide.pdf
Wyoming	Prescription Drug Monitoring Program	2003	2004	Pharmacy Board	Licensing/CSR Fees	Schedules II-V, Drugs of Concern	Authorized to Release	N/A	Yes if active investigation	Patient, Prescriber, Dispenser Histories, & Query Audit Trail	Version 4.2	No	Yes (first and last name required)	Yes (required)	No	Yes (required)	Yes (required)	No	No	No	No	No	https://www.nimstat.org/nimstat/81668-BB10-960C-6A15-98C196280CB7090/ https://drive.google.com/file/d/1uPQ74E1H1t6g/view

Additional examples of PDMP linkage projects include:

Austin AE, Proescholdt SE, Creppage KE, Asban A. Characteristics of self-inflicted drug overdose deaths in North Carolina. *Drug Alcohol Depend*. 2017;181:44-49.

Devo RA, Hallik S, Hildebrand C, et al. Association between initial opioid prescription patterns and subsequent long-term use among opioid-naïve patients: a statewide retrospective cohort study. *J Gen Intern Med*. 2017;32(1):21-27.

Geisert P, Hallik S, Van Ormondt L, et al. High-risk prescription and opioid overdose: lessons for prescription drug monitoring program-based prescriber alerts. *Pharm*. 2018;17(1):50-55.

Hartung DM, Alamed SM, Madhoun L, et al. Using prescription monitoring program data to characterize out-of-pocket treatment for opioid prescriptions in a state Medicaid program. *Pharmacoepidemiol Drug Saf*. 2017;26(9):1053-1060.

Fink PR, Devo RA, Hallik S, Hildebrand C. Opioid prescription patterns and patient outcomes by prescriber type in the Oregon Prescription Drug Monitoring Program. *Pain Med*. 2018;19(12):2401-2408.

Nichols SJ, Trondal HE, Mikhonadlyan S, MPhetters ME. Socioeconomic factors, recreation history and opioid overdose deaths: a statewide analysis using linked PDMP and mortality data. *Drug Alcohol Depend*. 2018;190:62-71.

Appendix Table 2. Attributes of crash report databases pertinent to linked analyses with prescription drug monitoring program data by state and the District of Columbia (n=51)

State	Year	Drug Suspected/Opinion/Assessment	Drug Test Type Reported	Drug Test Result	Type of Drugs, in Case of Reporting a List	Illicit Drugs vs. Prescription Drugs/Medications	Alcohol Suspected/Opinion/Assessment	Alcohol Test Type Reported	Report Alcohol BAC	Date of Crash	Location	Potential Linkage Elements						
												XY coordinates	Name	Driver's License Number	Date of Birth	Address	Race	
Alabama	2010	Yes	Yes	Positive Negative		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Alaska	2014	Yes	Yes	List	1 MARLUJUAN2 COCAINE3 OPIATE4 AMPHETAMINE5 PCP87 OTHER CONTROLLED SUBSTAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arizona	2017	Yes	Yes	List	1 MARLUJUAN2 COCAINE3 OPIATE4 AMPHETAMINE5 PCP87 OTHER CONTROLLED SUBSTAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arkansas	2016	No	Yes	Positive Negative		no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
California	2016	Unknown	Unknown	Unknown		no	Unknown	Yes	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colorado	2006	Yes	Yes	DRE		no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Connecticut	2015	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DC	2011	Unknown	No	Not mentioned		no	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Delaware	2014	Yes	Yes	List	01 01 - Marijuana02 02 - Cocaine03 03 - Opiates04 04 - Amphetamines05 05 - PCP88 88 - Other	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Florida	2011	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Georgia	2018	Yes	Yes	Positive Negative		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Hawaii	2010	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Idaho	2011	Yes	Yes	Positive Negative		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Illinois	2013	No	Yes	Narrative		Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Indiana	2011	No	Yes	Positive Negative		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Iowa	2013	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kansas	2014	No	Yes	Positive Negative		Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Kentucky	2008	Unknown	Yes	Unknown		no	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Louisiana	2005	Yes	Yes	Narrative		no	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maine	2010	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maryland	2017	No	Yes	Positive Negative		no	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Massachusetts	2005	Yes	Yes	List	1 Marijuana2 Cocaine3 Opiates4 Amphetamines5 PCP6 OtherCrash report (collected at scene)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Michigan	2014	Yes	Yes	List	Acetaminoothen + CodeineCodeineDimethylhhiambuteneHeroinHydrocodoneMethyflentamMorphin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Minnesota	2006	Yes	Yes	Unknown		no	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mississippi	2009	No	Yes	Supplemental document		no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Missouri	2012	Yes	No	Not mentioned		no	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Montana	2006	Unknown	Not mentioned	Positive Negative		no	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New York	2005	No	Unknown	Unknown		Yes	No	Unknown	Unknown	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Nebraska	2009	Yes	No	Not mentioned		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nevada	2010	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Hampshire	2009	No	Yes	Positive Negative		Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Jersey	2017	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Mexico	2011	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
North Carolina	2013	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
North Dakota	2009	No	Yes	Positive Negative		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ohio	2015	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oklahoma	2007	No	No	Not mentioned		yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oregon	2012	No	Yes	Positive Negative		Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pennsylvania	2007	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Rhode Island	2013	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
South Carolina	2010	No	Yes	List	1=Amphetamines"2=Cocaine"3=Marijuana"4=Opiates"5="PCP"8=Other"-No Test Given or No	no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
South Dakota	2007	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tennessee	2017	Yes	Yes	List	00 - No Drug Reported02 - Marijuana03 - Cocaine04 - Opiates05 - Ampetamines06 - PCP07 - Metham	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Texas	2012	No	Yes	Positive Negative		no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Utah	2015	Yes	Yes	Positive Negative		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vermont	2017	No	Yes	List	pendinz/central nervous system depressants/hallucinogens/dissociative anesthetics/ narcotic analgesic; no	no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Virginia	2014	No	Unknown	Positive Negative		no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Washington	2014	No	Yes	List	FROM DRE: offerr: (1) CNS - Depressant(2) CNS - Stimulant(3) Hallucinogen(4) PCP(5) Narcotic	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
West Virginia	2007	Yes	Yes	List	NoneMarijuanaCocaineOpiateAmphetaminePCPOther Controlled SubstanceOther Drug	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wisconsin	2016	No	Yes	List	o =BLANK"1o=MARIJUANA"2o=COCAINE"21=OPIATES"22=AMPHETAMINES"23=PCP"24=OTHI	no	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Wyoming	2007	Yes	Yes	Positive Negative		no	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Additional examples of crash report linkage projects include:

Thomas AM, Thygerson SM, Merrill RM, Cook LJ. Identifying work-related motor vehicle crashes in multiple databases. *Traffic Inj Prev.* 2012;13(4):348-354.
 Gonzalez RP, Cummings GR, Phelan HA, Mulcar MS, Rodning CB. Does increased emergency medical services prehospital time affect patient mortality in rural motor vehicle crashes? A statewide analysis. *Am J Surg.* 2009;197(1):30-34.