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Opioid Use Estimates:
Surveys Use Different Methodologies and Produce Different Estimates

Washington State Health Care Authority
DBHR Division of Behavioral Health and Recovery

Given the continuing opioid epidemic and increasing interventions in Washington, questions may arise around changes in use over time. To address opioid use, estimates based on surveys are often used to complement other indicators. More so than with marijuana or alcohol, questions about opioids suffer from two different sources of bias: Heavy users may not be selected for participation (due to issues such as homelessness or not being in school) and other opioid users may be unwilling to reveal their behavior due to stigma. Multiple survey data are available for Washington and for comparing Washington to other states. This document describes the major surveys providing state-level estimates and the methods, population, and other characteristics of the survey to help inform the public about possible reasons for different use estimates across surveys. (Several of these sources can be used to find estimates for smaller area, such as school districts or counties.) The wording of survey questions is essential to interpretation and comparison and is often different across surveys and sometimes changes within a single survey over time. Other important factors include the age ranges included in an estimate, differential non-response, and the time of year for school-based surveys. Some surveys ask about heroin and prescription opioid use in parallel ways, others do not. Blank cells on the right (question wording columns) indicate that use frequency was not surveyed. We include prescription drug queries (second row of the question wording columns) even if the question(s) are not specifically about opioids.

	Sampling		Survey methods			Question wording producing estimates	
Source	**Population sampled**	**Weighting**	**Mode**	**When/Language**	**Data quality**	**Lifetime use**	**30-day use**
Monitoring the Future (MTF; national sample)	8th, 10th, and 12th graders in Lower 48, public or private schools with 25+ in grade (20+ for 8th), plus continuous follow-up of subsample (n=2400) of seniors from each year.	Accounts for complex sample; also produce 12th grade estimates adjusted for absentees and dropouts	Self-administered machine-readable survey conducted usually in class period by Michigan Survey Research Center employee. Parents given advance notice and options for refusal.	Spring of each school year	Check for logical inconsistencies in each drug-specific Q triplet of Qs. Those above a minimum number of inconsistent triplets are dropped. Also check for improbably high reported use of multiple drugs.	On how many occasions (if any) have you taken heroin using a needle…in your lifetime? On how many occasions (if any) have you taken heroin WITHOUT using a needle…in your lifetime?	…during the last 30 days? …during the last 30 days?
						There are a number of narcotics other than heroin, such as methadone, opium, morphine, codeine, Demerol, Vicodin, OxyContin, and Percocet. These are sometimes prescribed by doctors. On how many occasions (if any) have you taken narcotics other than heroin on your own—that is, without a doctor telling you to take them…in your lifetime?	…during the last 30 days?

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Healthy Youth Survey (HYS; state, county, school districts)	Washington 6th, 8th, 10th, and 12th graders in public schools 15+ students per grade. Added 7th, 9th, and 11th for small schools in 2016, but not included in statewide results.	State-wide sample accounts for clustering of respondents within schools; no non-response correction	Self-administered machine-readable survey conducted in class period by teacher. Parents given advance notice and options for refusal.	Fall of even numbered school years English and Spanish	Screens for dishonest or inconsistent answers; tends to increase with grade. Screening incorporates Q about fictitious drug and Q about honesty of responding, plus logical inconsistencies	Have you ever, even once in your life: Used heroin?	
						Heroin and painkiller Qs not asked of 6th graders, who get a Q about "other illegal drugs"*.*	During the past 30 days, on how many days did you: Use a pain killer TO GET HIGH, like Vicodin, OxyContin (sometimes called Oxy or OC) or Percocet (sometimes called Percs)?
Youth Risk Behavior Surveillance System (YRBSS; national sample)	National sample: 9th–12th graders in public or private schools in 50 states + DC; oversamples black & Hispanic students Participating state samples: 9th–12th graders in public schools; few states inc. private schools. Washington does not participate, but Seattle Public Schools has for 2009-2013.	Accounts for complex sample and non-response	Self-administered machine-readable survey conducted usually in class period by (usually) contractor. Parents given advance notice and options for refusal.	Usually spring of odd numbered school years	Screens for illogical & implausible responses & patterns.	During your life, how many times have you used heroin (also called smack, junk, or China White)?	…
						Since 2017: During your life, how many times have you taken prescription pain medicine without a doctor's prescription or differently than how a doctor told you to use it? (Count drugs such as codeine, Vicodin, OxyContin, Hydrocodone, and Percocet.) *There was a prescription drug Q that specified opioids as well as other drugs (*"Adderall, Ritalin, or Xanax"*) for 2011—2015.*	…
Young Adult Health Survey (YAHS; Washington)			Web, 15"			How often did you use the following substances (in any form) during the past 12 months?...Heroin	

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	Convenience sample of Washington state young adults 18-25; following up initial cohort and began wave 2 summer 2015. No Rs from 5 of Washington's 10 smallest counties. 5" screening survey followed by researcher phone call to confirm eligibility→given URL for survey	Initial discussion indicated no plan to post-stratify, but factsheet claims 2014 results weighted to better represent WA population on demographics, student status, and geography.			"Complex screening and validation strategies were used to prevent duplicate or false responses." Lifetime use actually assessed twice—not sure what happens if not consistent.	How often did you use the following substances (in any form) during the past 12 months?...Pain relievers to get high	*No 30-day use Q. Is a non-specific injection drug use in past 30 days Q:* During the past 30 days, have you injected any drug (*including medications not intended to be injected*)?
Behavioral Risk Factor Surveillance System (BRFSS), state-added questions on Form A	Adult (18+), non-institutional, civilian, telephone-owning US population, inc. territories: WA started adding cell phones in 2008*, a dual-frame sample (land line and cell phone) was used nationwide in 2011; should not compare before/after 2011. Eligibility expanded to residents of college housing in 2012. * 2008 was a pilot year only for cell sampling; there is no weighted dual-frame dataset for 2008.	Accounts for complex sampling; combination of design weights and raking plus trimming	CATI ~25-30 minutes	Year-round data collection; new sample fielded monthly. Interviewing 7 days a week, day and evening. English and Spanish	Routine call monitoring. Data collection contractor, CDC, and state all perform various data processing and quality controls.	…	…
						…	…
National Health and Nutrition Examination Survey (NHANES; national sample)		Weights adjust for sampling, non-response, and coverage.	Drug use Qs in CASI (with audio) portion of physical exam, at exam center in private room with headphones	Throughout 2-year cycle English and Spanish	CASI system has numerous consistency checks with immediate feedback to Rs, including flagging unlikely responses which require confirmation.	*After Qs on other drugs, there is a screener Q:* Have you **ever** used cocaine, crack cocaine, heroin, or methamphetamine? *If yes,* Have you ever, even once, used heroin?	How long has it been since you last used heroin? *If indicate recent use,* During the past 30 days, on how many days did you use heroin?

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	Resident, civilian, non-institutionalized population in 50 states + DC (inc. non-institutional group quarters). Regular public use files only have drug use data for 18+ or 20+ (varies by cycle); data for 12+ available through NCHS RDC; through age 59 for 2005-2006, 69 for 2007-2008 on. HHD screening→ scheduling exams at mobile site; maximum of 15 sites in a given year (at least since 1999). Continuous cycles oversample low income, black, and older residents.						
National Survey on Drug Use and Health (NSDUH; (national and state sample)	Civilian, non-institutionalized pop 12+ residing in 50 states + DC. Before 1991, did not inc. AK and HI, non-institutional group quarters, and civilians on military bases. Increased sample size in 1999, equally allocated across 12-17, 18-25, and 26+ (thus, younger groups relatively oversampled) through 2013, then at 25%, 25%, and 50%, respectively, for 2014. In 2002 added pair sampling strategy for HHDs with older residents. Sampling redesigned for 2005.	Complex weighting accounts for design and non-response at multiple levels, plus trimming; were plans to redesign sample for 2014.	In-person CAI since 1999—most Qs, inc. drugs, answered directly on laptop by R (CASI). ~1 hour. Incentive added 2002	Yearly, throughout year English and Spanish	Qaire includes refusal conversion attempts for drug Qs. CAI has extensive internal consistency checks, often forcing R to re-do Q or otherwise address conflict. 2006 reliability study found generally good reliability for drug Qs, with variation in error by demographics.	These next questions are about heroin. Have you ever, even once, used heroin?	How long has it been since you last used heroin? *If in past 30 days,* During the past 30 days, on how many days did you use heroin?
						Asks about 12 month use of prescription pain relievers, giving examples of opioids in sets of 2-5. Then asks about "any other prescription pain reliever"*, which may or may not allow the R to bring non-opioids into consideration. If no past year use is reported, asked about any lifetime use:* "Have you ever, even once, used any prescription pain reliever? Remember, do not include 'over-the-	…

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						counter' pain relievers such as aspirin, Tylenol, Advil, or Aleve."	

Glossary: R = Respondent, Q = Question, Qaire = Questionnaire, HHD = Household, CAI = Computer-Aided Interview, CASI = Computer-Aided Self-Interview, CATI = Computer-Aided Telephone Interview

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