SJC-13735

COMMONWEALTH vs. ELANA GORDON.

Plymouth. April 11, 2025. - September 17, 2025.

Present: Budd, C.J., Gaziano, Kafker, Wendlandt, Georges, Dewar, & Wolohojian, JJ.

Controlled Substances. Constitutional Law, Confrontation of witnesses, Harmless error, Retroactivity of judicial holding. Practice, Criminal, Confrontation of witnesses, Witness, Hearsay, Harmless error, Retroactivity of judicial holding. Evidence, Expert opinion, Hearsay, Scientific test. Witness, Expert. Error, Harmless.

Indictment found and returned in the Superior Court Department on May 30, 2018.

The case was tried before Thomas F. McGuire, Jr., J.

The Supreme Judicial Court on its own initiative transferred the case from the Appeals Court.

Christopher DeMayo for the defendant.
Arne Hantson, Assistant District Attorney, for the Commonwealth.
M. Chris Fabricant, of New York, Radha Natarajan, & Stephanie Roberts Hartung, for New England Innocence Project & another, amici curiae, submitted a brief.
R. Michael Cassidy, Benjamin K. Golden, & Elizabeth N. Mulvey, pro se, amici curiae, submitted a brief.

WENDLANDT, J. In this case, we return to the intersection of the accused's constitutional right to confront witnesses against her and the prosecution's use of a substitute expert to present an ostensibly independent opinion identifying a controlled substance; the original analyst, who alone performed the testing, was no longer employed by the State police crime laboratory (crime lab) at the time of trial. We are guided at this familiar post by the United States Supreme Court's most recent decision regarding the accused's right of confrontation, Smith v. Arizona, 602 U.S. 779 (2024).

In the present case, the defendant, Elana Gordon, was alleged to have passed Suboxone[1] to an inmate in a house of correction in violation of G. L. c. 268, § 28, using her position as a lawyer to feign that the sixty-one strips containing the controlled substance were merely legal papers relating to the inmate's case. As in Smith, a substitute expert gave an opinion identifying the controlled substance. The substitute expert performed the technical and administrative

[1] "Suboxone is the brand name of a medically based treatment product containing buprenorphine and naloxone, prescribed for the treatment of opioid dependence." Care & Protection of Zeb, 489 Mass. 783, 784 n.2 (2022). Buprenorphine is a class B controlled substance, but for purposes of this case, we refer to the controlled substance as Suboxone in accordance with our prior case law. See, e.g., Commonwealth v. Rodriguez, 484 Mass. 1047, 1047 (2020) (referring to Suboxone as class B substance).

reviews of the original analyst's work, but as in Smith, the substitute expert neither participated in nor observed the chemical testing performed by the analyst. As in Smith, the substitute expert testified to the contents of the analyst's notes. As in Smith, the analyst's out-of-court statements provided support for the substitute expert's opinion only if the analyst's statements were true. And, as in Smith, the substitute expert's opinion identifying the controlled substance was not independent of the analyst's statements; in short, the proffered opinion identifying the controlled substance, which the Commonwealth concedes depended on the analyst's notes, "merely replicate[d], rather than somehow buil[t] on, the testing analyst's conclusions." Smith, 602 U.S. at 798-799.

Applying Smith, we conclude that the original analyst's statements set forth in her notes were out-of-court statements admitted for their truth. Further concluding that the absent analyst's statements were testimonial and that the admission of those statements, as well as the substitute expert's opinion founded on the truth of the absent analyst's statements, was not harmless beyond a reasonable doubt, we vacate the defendant's conviction.[2]

[2] We acknowledge the amicus briefs submitted by the New England Innocence Project and the Innocence Project; and R. Michael Cassidy, Benjamin K. Golden, and Elizabeth N. Mulvey.

1. Background.[3] a. Facts. As relevant to our analysis, in 2018 the defendant delivered two envelopes containing sixty-one orange strips of an unidentified substance to an inmate at the Plymouth County house of correction. The exchange occurred the day following two jail telephone calls with a first inmate, who instructed the defendant to transmit the "paperwork" to a second inmate who would then pass it to the first inmate. Commonwealth v. Gordon, 103 Mass. App. Ct. 1112 (2023) (unpublished), vacated and remanded, 145 S. Ct. 412 (2024). The envelopes were confiscated by officers who, based on training and experience, suspected the orange strips were Suboxone.[4]

The strips were transported to the crime lab, where one of the strips was tested by forensic analyst Kimberly Dunlap. Dunlap concluded that the strip contained a mixture of buprenorphine and naloxone, commonly referred to as Suboxone. In her written, initialed notes marked by the crime lab

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[3] Because the issue before us is the effect of Smith, 602 U.S. at 802-803, on the question whether the substitute expert's testimony violated the defendant's rights under the confrontation clause, we need not repeat the facts as they were set forth in Commonwealth v. Gordon, 103 Mass. App. Ct. 1112 (2023) (unpublished), vacated and remanded, 145 S. Ct. 412 (2024). The defendant raises additional issues unrelated to her right of confrontation and has not identified how Smith affects the analysis of these issues. We therefore do not consider them. Instead, we focus on the facts and procedural history pertinent to the constitutional question presented.

[4] See note 1, supra.

identification number, Dunlap recorded the procedures she said she undertook to reach her conclusion, including, inter alia, her receipt of the strips from the Plymouth County sheriff's department, the procedures she employed to perform an initial screening test, the protocols she followed to prepare the strip for further analysis, her use of gas chromatography-mass spectrometry (GC-MS)[5] for a confirmatory test, and her conclusion based on the foregoing that the strip contained Suboxone. Also in the case file were a printout from the database Dunlap said she used during the screening test and the GC-MS output from the confirmatory test Dunlap said she performed.

Carrie LaBelle, a supervisor at the crime lab, reviewed the case file pursuant to the crime lab's technical and administrative review procedures. LaBelle, who was familiar with the protocols and procedures of the crime lab, was not involved in the testing performed by Dunlap; she neither observed nor participated in Dunlap's testing.

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[5] "Most controlled substances are subjected first to a field test for presumptive identification. This is followed by gas chromatography-mass spectrometry (GC-MS), in which chromatography separates the drug from any diluents or excipients, and then mass spectrometry is used to identify the drug. This is the near universal test for identifying unknown substances."

National Research Council, Strengthening Forensic Science in the United States: A Path Forward 134-135 (2009), cited in Commonwealth v. Fernandez, 458 Mass. 137, 149 n.17 (2010).

The prosecution had intended to call Dunlap to testify that the sixty-one strips contained Suboxone. However, just prior to jury empanelment, the prosecution notified the trial judge that it intended to call LaBelle as a "substitute chemist" to identify the substance because Dunlap was "no longer with the lab."[6]

At trial, LaBelle testified that she was "responsible for performing technical and administrative reviews" of her peers' work. She explained that technical review means that "we will go through the case file, we'll review all of their submitted data, we'll review their notes, and we make sure that the notes and the conclusions that they've drawn from them are supported scientifically," and that "[t]he administrative review portion is looking for administrative aspects such as having a laboratory number on every page and having the analyst's initials on every page." LaBelle stated that she performed the technical and administrative reviews of Dunlap's work on the defendant's case.

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[6] The record is silent as to the reason for Dunlap's departure from the crime lab and provides no insight into her availability at the time of trial. See Commonwealth v. Rosado, 480 Mass. 540, 548-549 & n.8 (2018), citing Mass. G. Evid. § 804(a) (2018) (describing criteria for assessing whether declarant is unavailable as witness, such as invocation of privilege or declarant's persistent refusal to testify despite court order).

LaBelle acknowledged that she had not herself performed or observed the testing on any of the seized strips.[7] Instead, LaBelle testified that Dunlap "analyzed the specific substances."

LaBelle, who prior to her role as a supervisor had been an analyst, then described the tests typically performed by analysts at the crime lab:

> "The first thing we do is we take a weight of [the item] before any analysis begins. Each item that is tested should have a weight recorded for it. There should be a screening test and a confirmatory test performed. And then each of those tests individually should have specific data, which the analyst will record in their notes. So, they'll have the volume that they took, how much solution that they put in the sample. They'll put the type of solution that they put the sample in, and then they'll write down their results for each of those tests and then their final conclusion."

An analyst's typical first step, LaBelle testified, would be a "pharmaceutical preparation," in which "[w]e first look for any identifiable markings on the item itself" and conduct "a pharmaceutical identifier search, and that's essentially just using an online database."

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[7] Although sixty-one strips of an alleged controlled substance were available, only one was tested. The record does not explain why another strip was not tested once the prosecutor determined to call a substitute expert. See Bullcoming v. New Mexico, 564 U.S. 647, 666 (2011) (noting retesting would have avoided prosecution's need for testimonial hearsay prohibited by confrontation clause).

Then, LaBelle described the "confirmatory test, which is where we actually will take a portion of the sample, we'll analyze it chemically on a[n] instrument. There's a couple different ones we use . . . ." LaBelle also explained the functioning of the GC-MS, stating the "particular instrument will separate out all the different components of a mixture, and the mass spectrometer will identify what those components are as they come off the instrument."

LaBelle then pivoted from describing the typical tasks performed by analysts to explaining Dunlap's process "for this particular case." As discussed in more detail infra, LaBelle proceeded to relay the contents of Dunlap's notes, testifying as to the steps Dunlap recorded having performed for an initial screening test and for a confirmatory test using the GC-MS. LaBelle also testified that she herself observed the pharmaceutical identification markings on the strips, and reviewed a printout from a database that Dunlap's notes indicated Dunlap used for the initial screening, as well as the GC-MS output, both of which were in the case file alongside Dunlap's notes.

LaBelle stated that she reviewed "the same data results that the person who did the initial analysis saw," and that those results allowed her "to make a determination, to a scientific degree of certainty" as to the identification of the

analyzed substance. She opined that, "in reviewing the data printouts independently, as another forensic scientist, the data support[] a conclusion of buprenorphine and naloxone," which LaBelle confirmed was commonly known as Suboxone.

On cross-examination, LaBelle acknowledged she reviewed Dunlap's "data" to confirm they satisfied "the procedures and protocols" of the crime lab. LaBelle testified that, while she was "reviewing the data currently and saying that the data support[] a conclusion of the results," she was "relying on a test performed by another person."

On redirect, LaBelle testified that "if any discrepancies are noticed during the technical or administrative review[s]" a "fresh sample" would be tested, but that there were no "discrepancies between the initial analysis and [LaBelle's] technical and administrative review[s]" warranting a second test. Asked expressly whether her opinion was based on her "own review of the raw data," LaBelle reiterated only that she was "reviewing the actual case file" and "giving an independent conclusion based on that information."

Trial counsel moved to strike LaBelle's testimony, arguing that "[a]ll she's doing is reviewing data, testifying to conclusions that were arrived at by a person who is not here and not available for cross-examination," and as such violated the defendant's right to confrontation. The trial judge denied the

motion to strike but noted the defendant's "rights are saved on that issue."

b. Prior proceedings. In October 2021, the jury found the defendant guilty of unlawfully delivering a class B controlled substance to a prisoner in violation of G. L. c. 268, § 28.[8] The defendant was sentenced to six months in a house of correction. The defendant timely appealed.

The Appeals Court affirmed the defendant's conviction. Pertinently, the Appeals Court rejected the defendant's confrontation clause challenge to LaBelle's testimony, reasoning that LaBelle's opinion was independent based on her review of the case file.[9] See Gordon, 103 Mass. App. Ct. 1112. The United States Supreme Court subsequently issued its decision in Smith, 602 U.S. 779; in October 2024, the Supreme Court granted the defendant's petition for certiorari, vacated the Appeals Court's judgment, and remanded the case to the Appeals Court for

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[8] The jury also found the defendant guilty of possession of a class B controlled substance with intent to distribute in violation of G. L. c. 94C, § 32A (c), but the charge was dismissed as duplicative by agreement. See Commonwealth v. Njuguna, 495 Mass. 770, 776-777 (2025), citing Morey v. Commonwealth, 108 Mass. 433, 434 (1871). The defendant also pleaded guilty to conspiracy in violation of G. L. c. 94C, § 40, which was placed on file.

[9] We denied the defendant's application for further appellate review. See 493 Mass. 1105 (2024).

reconsideration in light of Smith. We transferred the case to this court on our own motion.

2. Discussion. a. Standard of review. "We review the defendant's constitutional challenge de novo." Commonwealth v. Shepherd, 493 Mass. 512, 524 (2024).

b. Confrontation clause prohibition. The right of a defendant in a criminal trial to be confronted with the witnesses against him or her, which is enshrined in the Sixth Amendment to the United States Constitution,[10] limits the prosecution's ability to introduce statements made by persons

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[10] The Sixth Amendment provides, in relevant part, that "[i]n all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him." The bedrock principle applies to both Federal and State prosecutions. See Pointer v. Texas, 380 U.S. 400, 406 (1965).

The confrontation right is also protected by art. 12 of the Massachusetts Declaration of Rights, which provides, in relevant part, that a defendant "shall have a right . . . to meet the witnesses against him face to face." We need not address in this case whether art. 12 provides broader protections than the Sixth Amendment because we conclude that the defendant's Sixth Amendment right of confrontation was violated. Compare Commonwealth v. Nardi, 452 Mass. 379, 388 n.10 (2008), quoting Commonwealth v. DeOliveira, 447 Mass. 56, 57 n.1 (2006) ("the protection provided by art. 12 is coextensive with the guarantees of the Sixth Amendment"), with Commonwealth v. Tassone, 468 Mass. 391, 402 (2014) (stating, prior to Smith, "[r]egardless of whether the Supreme Court ultimately interprets the confrontation clause to permit the admission of [expert opinion testimony from an expert who had no affiliation with the laboratory that conducted the testing, which] effectively den[ies] the defendant any meaningful opportunity for cross-examination, its admission in our courts is barred by the right of confrontation in our common law of evidence").

not in the court room.[11] Smith, 602 U.S. at 783-784. The right, however, does not extend to all out-of-court statements; to fall within its ambit, the out-of-court statement (i) must be admitted to prove the truth of the matter asserted (that is, the statement must be hearsay), and (ii) must be testimonial. See Davis v. Washington, 547 U.S. 813, 823 (2006) (confrontation right "applies only to testimonial hearsay").

For a time, the Supreme Court concluded that the confrontation right was satisfied so long as the testimonial hearsay bore "adequate 'indicia of reliability.'" Ohio v. Roberts, 448 U.S. 56, 65-66 (1980). More than two decades ago, however, the Supreme Court changed course to reflect the Court's interpretation of the original understanding of the confrontation clause. See Crawford v. Washington, 541 U.S. 36, 43-50 (2004) (reviewing historical origins of confrontation clause).

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[11] Chief Justice John Marshall said of the confrontation right:

> "I know of no principle in the preservation of which all are more concerned. I know none, by undermining which, life, liberty and property, might be more endangered. It is therefore incumbent on courts to be watchful of every inroad on a principle so truly important."

United States v. Burr, 25 F. Cas. 187, 193 (C.C.D. Va. 1807) (No. 14,694).

In Crawford, the Supreme Court explained that admission of a testimonial out-of-court statement to prove the truth of the matter asserted based on a judicial determination of reliability is "fundamentally at odds with the right of confrontation." Crawford, 541 U.S. at 61. The confrontation right, the Supreme Court concluded, "commands . . . not that evidence be reliable, but that reliability be assessed in a particular manner: by testing in the crucible of cross-examination."[12] Id. "Dispensing with confrontation because testimony is obviously reliable," the Supreme Court stated, "is akin to dispensing with jury trial because a defendant is obviously guilty. This is not what the Sixth Amendment prescribes." Id. at 62. Accordingly, the Supreme Court determined that the confrontation clause "bars the admission at trial of 'testimonial statements' of an absent witness unless she is unavailable to testify, and the defendant has had a prior opportunity to cross-examine her" (quotation, citation, and alteration omitted). Smith, 602 U.S. at 783. See Crawford, supra at 59, 62.

Relevant to the present circumstances, the prohibition against testimonial hearsay applies "in full to forensic evidence." Smith, 602 U.S. at 783. Thus, in Melendez-Diaz v.

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[12] Cf. 3 W. Blackstone, Commentaries *373 ("This open examination of witnesses . . . is much more conducive to the clearing up of truth . . .").

Massachusetts, 557 U.S. 305, 308-312 (2009), the Supreme Court concluded that the clause prohibited the introduction of forensic certificates setting forth analysts' determinations that a tested substance was cocaine; the prosecution had relied on the certificates in lieu of the analysts' testimony at trial.

The Supreme Court rejected the Commonwealth's argument that the "neutral scientific" nature of the testing results recorded in the certificates satisfied the confrontation clause and again emphasized that reliability did not govern the confrontation clause's application; even "if all analysts always possessed the scientific acumen of Mme. Curie and the veracity of Mother Theresa," the Supreme Court "would reach the same conclusion."[13] Id. at 318, 319 n.6. Concluding that the defendant had the right to cross-examine the analysts who had signed the certificates, the Supreme Court underscored that the confrontation clause "commanded not reliability but one way of testing it -- through cross-examination." Smith, 602 U.S. at 785, citing Melendez-Diaz, supra at 317.

[13] The Supreme Court also noted that scientific evidence may be subject to manipulation or mistake, Melendez-Diaz, 557 U.S. at 318, and that "[c]onfrontation is designed to weed out not only the fraudulent analyst, but the incompetent one as well," id. at 319 (reviewing studies of exonerations based on "discredited forensics" and "invalid forensic testimony" [citation omitted]).

The Supreme Court next addressed whether the prosecution, consistent with the confrontation clause, can introduce a forensic analyst's laboratory report as to a defendant's blood alcohol content through the testimony of a surrogate expert who did not observe or perform the tests conducted by the analyst but who worked in the same laboratory and was familiar with the laboratory's procedures. See Bullcoming v. New Mexico, 564 U.S. 647, 651-652 (2011). The Supreme Court determined that the surrogate expert's testimony violated the confrontation clause. Id. at 661-662.

Even a qualified surrogate, the Supreme Court reasoned, "could not convey what [the certifying analyst] knew or observed about the events his certification concerned, i.e., the particular test and testing process he employed"; cross-examination of a surrogate could not "expose any lapses or lies on the certifying analyst's part." Id. at 661-662. Whether the prosecution introduced a certificate of the results of forensic analysis in the form of a physical document as in Melendez-Diaz or conveyed that same content through the surrogate's testimony, the authoring analyst, the Supreme Court confirmed, "became a witness [the defendant] had the right to confront."[14]

[14] In Bullcoming, the Supreme Court "refused to accede to the idea that any old analyst -- i.e., a substitute who had not taken part in the lab work -- would do" to cure the confrontation clause's prohibition set forth in Melendez-Diaz on

Bullcoming, supra at 663. Notably, the State did not assert that the surrogate expert offered an "independent opinion." Id. at 662. See also id. at 673 (Sotomayor, J., concurring in part) (noting "this is not a case in which an expert witness was asked for his independent opinion about underlying testimonial reports that were not themselves admitted into evidence").

The Supreme Court addressed that scenario in Williams v. Illinois, 567 U.S. 50 (2012). There, the absent analyst had created a deoxyribonucleic acid (DNA) profile ostensibly based on a swab taken from the victim; thereafter, a State expert, who did not work at the absent analyst's laboratory and had no knowledge of that laboratory's operations, used the analyst's report containing the DNA profile to search a State database that included the defendant's DNA profile. Id. at 59-61. At trial, the State expert testified to her "independent" opinion that there was a match between the defendant's DNA profile in the State database and the "DNA profile found in semen from the

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the introduction of the absent analyst's testimonial out-of-court statements. Smith, 602 U.S. at 798. Writing separately, Justice Sotomayor emphasized the limits of the Supreme Court's holding in Bullcoming; she observed that "this is not a case in which the person testifying is a supervisor, reviewer, or someone else with a personal, albeit limited, connection to the scientific test at issue." Bullcoming, 564 U.S. at 672-673 (Sotomayor, J., concurring in part) (while not "address[ing] what degree of involvement is sufficient," noting that "[i]t would be a different case if, for example, a supervisor who observed an analyst conducting a test testified about the results or a report about such results").

vaginal swabs of [the victim]," impliedly asserting that the DNA profile created by the absent analyst was the profile from the victim's swab and that it was obtained using sound scientific principles and procedures.[15] Id. at 64, 71-72. The State expert testified that it was a "commonly accepted" practice in the field for one DNA expert to rely on the records of another DNA expert, and that the absent analyst's laboratory was accredited. Id. at 60. However, she acknowledged that she had no firsthand knowledge of how the absent analyst had produced the DNA profile or even whether the profile had in fact come from the swab taken from the victim. Id. at 61-62.

In a "fractured" decision, five of the justices in Williams concluded that the State expert's opinion did not violate the confrontation clause because the absent analyst's report either was not hearsay or was not testimonial. Smith, 602 U.S. at 779, 788 & n.1. Four of these justices determined that because the State expert's testimony regarding the absent analyst's DNA profile merely provided the basis for the State expert's opinion, it was admitted to allow the jury to assess the validity of the opinion and not for the truth of the absent

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[15] While the State expert impliedly referred to the absent analyst's testing results in the course of providing her own opinion, the absent analyst's report, setting forth the analyst's results, was not itself introduced in evidence. Williams, 567 U.S. at 79.

analyst's out-of-court statements. Williams, 567 U.S. at 58.[16] Writing for the four dissenting justices, Justice Kagan (who would go on to author the Supreme Court's Smith decision) concluded that when "the State elected to introduce the substance of [the absent analyst's] report into evidence, the analyst who generated that report became a witness whom [the defendant] had the right to confront" (quotations and citation omitted). Id. at 124-125 (Kagan, J., dissenting). The dissent summarized, "the [c]onfrontation [c]lause prevented the State from introducing that report into evidence except by calling to the stand the person who prepared it. So the State tried another route -- introducing the substance of the report as part and parcel of an expert witness's conclusion" (citation omitted). Id. at 128.

The Supreme Court most recently revisited its confrontation clause jurisprudence in Smith, rejecting the rationale of the plurality in Williams that statements of an absent analyst were offered solely for the jury to assess the soundness of the testifying expert's opinion. Smith, 602 U.S. at 800. In Smith, a substitute expert, who worked in the same laboratory as the

[16] The fifth justice, Justice Thomas, disagreed with that the plurality's reasoning but joined the plurality on the alternative ground that the analyst's report and DNA profile results "lack[ed] the solemnity of an affidavit or deposition" and thus were not testimonial. Williams, 567 U.S. at 111 (Thomas, J., concurring in the judgment).

original analyst but was not involved in the defendant's case, offered an "independent" opinion as to the identity of a controlled substance. Id. at 783, 791. The substitute expert based his opinion on his review of (i) the analyst's notes, which recorded the analyst's statements about the scientific methodology and the laboratory's policies and practices she said she followed, as well as the tests she said she performed; (ii) the raw data results from the tests she said she conducted on testing equipment she said she used; and (iii) the analyst's report, which more formally set forth the analyst's opinion as to the substance's identity. Id. at 790. The State, however, did not call the original analyst to testify. Id.

In support of his testimony, the substitute expert conveyed the analyst's statements. "The State offered up that evidence so the jury would believe it -- in other words, for its truth." Id. at 800. The Supreme Court concluded, "When an expert conveys an absent analyst's statements in support of his opinion, and the statements provide that support only if true, then the statements come into evidence for their truth." Id. at 783. If the statements were testimonial, an issue the Supreme Court did not reach, then the introduction of the absent analyst's statements violated the defendant's confrontation right. Id. at 800-802.

Significantly, the Supreme Court also rejected the State's argument that the substitute expert's opinion presented no confrontation clause problem because he was providing his own "independent" opinion based on his review of the absent analyst's work -- that is, the Supreme Court addressed the issue left open in Bullcoming and unresolved in Williams. Smith, 602 U.S. at 798-799. As discussed infra, the Supreme Court determined that the confrontation clause prohibits a substitute expert from offering an ostensibly independent opinion that depends on the truth of the absent analyst's testimonial hearsay; in other words, the Supreme Court rejected the argument that cross-examination of the substitute expert satisfied the confrontation clause. Id.

c. LaBelle's testimony. To determine whether the defendant's right to confrontation was infringed, we carefully examine each aspect of LaBelle's testimony: (i) the crime lab's procedures and protocols; (ii) the content of Dunlap's notes; and (iii) LaBelle's independent opinion based on her review of the case file. See Smith, 602 U.S. at 800-801, quoting Michigan v. Bryant, 562 U.S. 344, 369 (2011) ("A court must . . . identify the out-of-court statement introduced, and must determine, given all the 'relevant circumstances,' the principal reason it was made").

i. General background and protocols. To begin, LaBelle testified regarding the steps typically taken by analysts to conduct an initial screening test and a confirmatory test, her familiarity with the protocols in using GC-MS, and her role in connection with technical and administrative reviews generally and in connection with Dunlap's work in this case specifically. This testimony was based on LaBelle's personal knowledge and was not hearsay because LaBelle was available to be cross-examined on these matters at trial. See Smith, 602 U.S. at 799 (expert's testimony regarding "how that lab typically functioned -- the standards, practices, and procedures it used to test seized substances" -- was based on personal knowledge and did not implicate confrontation clause).

ii. Dunlap's notes. Next, LaBelle relayed Dunlap's statements recorded in her notes. LaBelle first relayed the content of Dunlap's notes regarding the screening test, testifying:

> "So, the first test that the analyst performed was a pharmaceutical ID. So, what they did was, they input -- they recorded in their notes what the imprint was that they observed on the actual item of evidence. They input that into their choice of a database. I believe they used drugs.com, but I can double-check on that. It gave back a preliminary identification of buprenorphine and naloxone, and then that printout is retained in the case record."

LaBelle's testimony regarding the confirmatory test done by Dunlap using the GC-MS was much the same. Based on Dunlap's

preliminary identification of buprenorphine and naloxone, LaBelle continued, "the analyst chose to do the GC-MS instrument." LaBelle stated:

> "They took a portion of one of the films, they recorded it into a solvent, I believe it was methanol is what we commonly use, and then the instrument will print out data after it goes -- runs through the instrument, and then that data we retain in the case and is reviewable."

A. Dunlap's notes were hearsay. Dunlap's notes purported to document the scientific methodologies Dunlap employed, the practices and procedures Dunlap followed, the tests Dunlap performed, and the results Dunlap obtained. With regard to the screening test, LaBelle had no personal knowledge whether Dunlap input the pharmaceutical identification, assuming it was accurately recorded from the strip Dunlap tested, into the database or another input, or whether the result contained in the file was the result from the database or a result from a different input. Similarly, regarding the confirmatory test, LaBelle did not actually perform or observe Dunlap perform the procedures to prepare the tested sample prior to its insertion into the GC-MS machine, Dunlap's use of the GC-MS machine, or any other aspects of how Dunlap conducted the confirmatory test. LaBelle could not speak to the truth of these steps that Dunlap reported in her notes and which LaBelle conveyed to the jury. See Smith, 602 U.S. at 796 (recognizing that substitute analyst, "though familiar with the lab's general practices, had no

personal knowledge about [the original analyst's] testing of the seized items").

Yet LaBelle's opinion as to the identity of the controlled substance depended on the truth of these statements. "If believed true, [Dunlap's statements] will lead the jury to credit [LaBelle's] opinion; if believed false, it will do the opposite. But that very fact is what raises the [c]onfrontation [c]lause problem. For the defendant ha[d] no opportunity to challenge the veracity of the out-of-court assertions that are doing much of the work" (citations omitted). Smith, 602 U.S. at 796. The statements from Dunlap's notes that LaBelle relayed to the jury were therefore hearsay.

B. Dunlap's notes were testimonial. Because the confrontation clause is only concerned with testimonial hearsay, we next must determine whether the out-of-court statements in Dunlap's notes, which LaBelle relayed to the jury, were testimonial. Smith, 602 U.S. at 784 ("the [c]lause confines itself to 'testimonial statements'" [citation omitted]). The Supreme Court has offered "[v]arious formulations" as to the scope of "testimonial," including "statements that were made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for

use at a later trial."[17] Crawford, 541 U.S. at 40, 51-53 (declining to adopt any one formulation because hearsay at issue -- wife's statement to police interrogators -- fell "squarely within that class" of testimonial hearsay precluded by confrontation clause). To be testimonial, an out-of-court statement's "primary purpose must have a focus on court" (quotation and citation omitted). Smith, 602 U.S. at 802. Here, Dunlap's notes, as described by LaBelle, were testimonial.

To begin, the strips were given to Dunlap by State police officers for the purpose of developing evidence for use in the defendant's criminal prosecution; in fact, when the strips were seized, officers already suspected that they contained Suboxone. See Bullcoming, 564 U.S. at 665, citing N.M. Stat. Ann. § 29-3-4 (2004) (considering that "a [law enforcement] officer provided seized evidence to a state laboratory required by law to assist

[17] Consistent with the Supreme Court's formulation, we have concluded that an absent analyst's out-of-court statements are testimonial where "a reasonable [analyst] would anticipate that her findings would be available for use at trial." Commonwealth v. Barbosa, 457 Mass. 773, 784 (2010), cert. denied, 563 U.S. 990 (2011). See Commonwealth v. Greineder, 464 Mass. 580, 594 n.15, cert. denied, 571 U.S. 865 (2013) (defining "testimonial" as where "a reasonable person in [the nontestifying analyst's] position would anticipate her findings and conclusions being used against the accused in investigating and prosecuting a crime" [citation omitted]); Commonwealth v. Avila, 454 Mass. 744, 763 n.20 (2009), quoting Nardi, 452 Mass. at 394 (hearsay was testimonial because "a reasonable person in [the nontestifying examiner's] position would anticipate his [findings and conclusions] being used against the accused in investigating and prosecuting a crime").

in police investigations" in reaching conclusion that laboratory report at issue was testimonial). An objective witness in Dunlap's position would understand that her work to identify the substance on the strip she tested was "in response to a police request," which is one factor supporting the conclusion that the statements she recorded in her notes were testimonial. Melendez-Diaz, 557 U.S. at 317.

In addition, by statute, the "regularly conducted business activity" of the crime lab is to conduct chemical analyses for law enforcement use, which is precisely the type of analysis Dunlap recorded in her notes.[18] Melendez-Diaz, 557 U.S. at 321 (drug certificates were not admissible under business records exception where "the regularly conducted business activity is the production of evidence for use at trial"). As described, Dunlap's notes set forth statements critical to the chemical analysis she performed for law enforcement to provide proof

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[18] By statute, the crime lab's sole function is the production of such evidence. In particular, G. L. c. 22C, § 39 (a), provides in relevant part:

> "The department shall, free of charge, or the University of Massachusetts Medical School shall . . . make a chemical analysis of any narcotic drug . . . or chemical submitted to it by police authorities, . . . provided, however, that neither the department nor the medical school shall conduct such analysis unless it is satisfied that the analysis submitted to it is to be used in connection with the enforcement of law" (emphasis added).

necessary for the criminal case against the defendant; the statements included the weight of the substance she tested, the pharmaceutical marking she saw, the database she used for the screening test, the volume of solution she used to prepare the tested strip, the type of solution she chose, the protocols she followed, the instrument she used, and her opinion identifying the controlled substance.

Moreover, although Dunlap's notes are not in the record, they appeared (based on LaBelle's description)[19] to have had at least some level of formality, containing Dunlap's initials and the crime lab identification number on each page and her conclusion, further confirming the testimonial nature of the notes. See Bullcoming, 564 U.S. at 665. Of course, not every notation by every analyst in the crime lab will be testimonial; analysts at the crime lab no doubt engage in a "range of recordkeeping activities." Smith, 602 U.S. at 802. But based on LaBelle's description, Dunlap's notes, which apparently detailed her scientific procedures and processes to determine

[19] Because Dunlap's notes are not in the record, we necessarily rely on LaBelle's testimony describing them. LaBelle's testimony described the notes' contents as well as the context in which they were made. Contrary to the concurrence's admonition, post at , these details suffice to conclude that Dunlap's statements, made at the behest of law enforcement to prove that the strips contained a controlled substance, an element of the charged offense, were testimonial.

the identity of the controlled substance for law enforcement purposes, appear to have been directed at court. The formal nature of the notes, according to LaBelle's description, detailing a necessary element of the prosecution's case at trial, see discussion infra, suggests that they were not merely "reminders to self."[20] Id.

Indeed, we have consistently concluded that notes such as Dunlap's, documenting findings, observations, and conclusions made by an analyst at the behest of law enforcement, are testimonial. See Commonwealth v. Jones, 472 Mass. 707, 714 (2015) (nurse's statements made in labeling swabs and completing "rape kit" "inventory list" "were plainly testimonial" because

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[20] The concurrence suggests that our conclusion that Dunlap's notes were testimonial "risks conflating ordinary laboratory documentation with testimonial statements prepared for use at trial." Post at . The alarm is unwarranted. We conclude only that Dunlap's statements, documenting the scientific steps she took to perform the chemical analysis she was asked to conduct by law enforcement officials to prove an element of the crime with which the defendant was charged, and which bore some indicia of formality, were testimonial. Contrast Commonwealth v. Zeininger, 459 Mass. 775, 788-789 & n.18, cert. denied, 565 U.S. 967 (2011) (differentiating technician certifying breathalyzer machine from chemist authoring certificates of drug analysis because technician has "no particular prosecutorial use in mind," and concluding that documentation for calibration of machine is not testimonial [citation omitted]); Commonwealth v. Bloom, 2025 PA Super 143 (2025), citing Smith, 602 U.S. at 802 (toxicology report not testimonial where report ordered from private laboratory to determine cause of death "was not drafted for the primary purpose of being used in court," "there was nothing indicating the blood samples were 'seized evidence,'" and report lacked "procedural formalities").

"purpose of a 'rape kit' is to gather forensic evidence for use in a criminal prosecution"); Commonwealth v. McCowen, 458 Mass. 461, 480 (2010) ("The observations, findings, and opinions of [the nontestifying medical examiner] reflected in his notes and reports were testimonial hearsay . . ."). See also Commonwealth v. Munoz, 461 Mass. 126, 128-131 (2011), vacated and remanded, 568 U.S. 802 (2012) (Commonwealth conceded that substitute expert's testimony on direct examination as to "the procedure [the nontestifying analyst] followed in weighing and analyzing the contents of the bags" as well as "conclusions . . . by [the absent analyst] violated the defendant's right of confrontation").

On appeal, the Commonwealth marshals only one argument that the notes were not testimonial; specifically, relying on LaBelle's description of Dunlap's notes, it contends that "Dunlap's notes existed to comply with laboratory accreditation requirements or to facilitate internal review and quality control." Our decision in Commonwealth v. Barbosa, 457 Mass. 773 (2010), cert. denied, 563 U.S. 990 (2011), is instructive. There, the substitute expert testified that "accreditation standards require a full technical review on all DNA reports that are issued," and that she (like LaBelle) conducted the technical review of the nontestifying analyst's "worksheets and reports" accordingly. Id. at 782. The expert then relayed the

contents of those worksheets and reports to the jury in support of her opinion, based on her review, that the DNA profiles obtained from stains on items worn by the defendant included the victim and excluded the defendant as a possible source. Id. at 781. We concluded (and in Barbosa the Commonwealth conceded) that the substitute expert's testimony conveying the nontestifying analyst's out-of-court statements violated the confrontation clause, despite the testimony that the out-of-court statements also served to facilitate the laboratory's mandated technical review. See id. at 782-784, 786.

Similarly, here, Dunlap reasonably would anticipate that her notes "would be available for use at trial" despite their usefulness also for purposes of the crime lab's technical and administrative review processes; thus, Dunlap's notes were testimonial. Barbosa, 457 Mass. at 784. Because Dunlap's notes comprised testimonial hearsay, LaBelle's testimony relaying the contents of Dunlap's notes violated the confrontation clause. See Crawford, 541 U.S. at 68.

iii. LaBelle's independent expert opinion. We turn to consider whether, despite the constitutional violation attendant to LaBelle's conveying Dunlap's testimonial hearsay to the jury, the portion of LaBelle's testimony stating her "independent" opinion was admissible. Specifically, based on her review of Dunlap's notes, the database printout, and the output from the

GC-MS, LaBelle opined that the "data support[] the identification of" Suboxone.

A. Impact of Smith on substitute expert's independent opinion testimony. The Supreme Court's decision in Smith clarified that where a substitute expert's "proffered opinion merely replicates, rather than somehow builds on, the testing analyst's conclusions," the absent analyst is the "witness" against the defendant in a constitutional sense. Smith, 602 U.S. at 791, 798-799. Significantly, the Supreme Court expressly rejected the State's argument that the confrontation clause permitted a substitute expert to offer an "independent" opinion based solely on his review of the absent analyst's notes, report, and raw data. Id. at 798. See Brief for Respondent at 1, Smith, 602 U.S. 779 (noting that one source of expert's opinion was "graphs reflecting machine-generated raw data" from nontestifying analyst's GC-MS testing). In such a circumstance, the Supreme Court explained, the substitute expert's ostensibly independent opinion was prohibited because the substitute expert "could opine that the tested substances" were illegal drugs "only because he accepted the truth of what [the absent analyst] had reported about her work in the lab -- that she had performed certain tests according to certain protocols and gotten certain results." Smith, supra at 798. Likewise, the jury could credit the substitute expert's opinion

only because they accepted the truth of what the absent analyst reported about her laboratory work. Id.

> "So the State's basis evidence -- more precisely, the truth of the statements on which its expert relied -- propped up its whole case. But the maker of those statements was not in the courtroom, and [the defendant] could not ask her any questions."

Id. Allowing the expert to testify to such an opinion, the Supreme Court stated, would result in an "end run" around the confrontation clause where "the proffered opinion [of the substitute expert] merely replicates, rather than somehow builds on, the [absent] testing analyst's conclusions."[21] Id. at 799.

Applying this reasoning, the United States Court of Appeals for the Fourth Circuit concluded that a substitute expert's opinion "founded on a [nontestifying] analyst's [testimonial] out-of-court statements" violated the confrontation clause. See United States v. Seward, 135 F.4th 161, 167-169 (4th Cir. 2025). There, a substitute DNA expert, one (like LaBelle) who had not conducted the underlying analysis but who had performed the technical review and was familiar with the State laboratory's

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[21] The concurrence reads Smith to concern only the question whether when an expert's opinion is based on an absent analyst's out-of-court statements, those statements are hearsay. Post at . This limited view fails to account for the Supreme Court's further discussion, detailed supra, regarding the confrontation clause violation attendant to a substitute expert's "independent" opinion based on an absent analyst's testimonial hearsay and testing data. See Smith, 602 U.S. at 798-799.

procedures, provided an ostensibly "independent" opinion dependent on the work of an absent analyst: the absent analyst's testimonial hearsay describing the processes and procedures followed to obtain the raw data, and the raw data from the tests performed by the analyst. Id. at 168. See Brief for Appellee at 23-24, Seward, supra (providing detail of substitute expert's role).

Significantly, the Fourth Circuit determined that Smith abrogated its prior case law -- case law that in pertinent respect mirrors our own conclusions regarding our evidentiary rule's compliance with the confrontation clause, discussed infra. Seward, 135 F.4th at 169, citing United States v. Summers, 666 F.3d 192, 201-202 (4th Cir. 2011), cert. denied, 568 U.S. 851 (2012). Under that precedent, a substitute expert could provide an "independent" opinion with respect to what "objective raw data generated by [a nontestifying] analyst" showed even if the opinion was dependent on the truth of the absent analyst's testimonial hearsay regarding the procedures and processes followed to generate the data; because the substitute expert's opinion was an "original product that could be . . . readily tested through cross-examination," the Fourth Circuit had reasoned prior to Smith, the defendant's right of confrontation was not violated. Seward, supra, quoting Summers, supra at 201, 202. After Smith, the Fourth Circuit concluded,

its precedent was no longer valid; the defendant's confrontation right was not satisfied by cross-examination of the substitute expert, even if the expert purported to provide an opinion based on the raw data, because that opinion was dependent on the truth of the absent analyst's testimonial hearsay as to the procedures and protocols the analyst followed. Seward, supra.

In Seward, the substitute expert had not "overtly" testified to the details of the absent analyst's work. Instead, she described the laboratory's protocols generally, and then she turned to the case at bar and stated that the "lab analyzed" each swab, implying that the analysis had been conducted pursuant to the protocols to which she had testified.[22] Id. at 168. In other words, the expert in Seward provided her opinion but did not testify expressly to its testimonial hearsay basis. The Fourth Circuit nonetheless concluded that the substitute expert's opinion was prohibited by the confrontation clause. Id. at 168-169. "[T]he government," said the Fourth Circuit mirroring the language in Smith,

> "may not sidestep the Sixth Amendment problems created by having a witness testify to their opinions that are founded on a non-testifying analyst's out-of-court statements by simply omitting any questions about the analyst's work.

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[22] The Fourth Circuit continued, "The obvious implication -- indeed, the only way the testimony makes sense -- is that the [substitute] expert was representing that the non-testifying analyst who ran the underlying tests in fact followed the procedures the [substitute] expert had just described." Seward, 135 F.4th at 168.

> 'Approving that practice would make' Smith and several other post-Crawford decisions 'a dead letter . . . and allow for easy evasion of the [c]onfrontation [c]lause.'"

Seward, 135 F.4th at 168, quoting Smith, 602 U.S. at 798.

The Supreme Judicial Court of Maine similarly concluded that, applying the Supreme Court's analysis in Smith, the confrontation clause barred a substitute expert's opinion identifying a controlled substance based on the raw data from tests performed by an absent chemist where that opinion was dependent on the truth of the testimonial hearsay statements documenting how the chemist generated that raw data. See State v. Thomas, 2025 ME 34. In Thomas, the Maine court rejected the State's argument that the substitute expert's opinion did not violate the confrontation clause because the expert "had conducted an independent review of [the nontestifying chemist's] data and had 'independently concluded based on the data that the substance tested in [that] case [was] fentanyl.'" Id. at ¶¶ 27, 56-58. Noting that the substitute expert (unlike the expert in Smith) had conducted the technical review of the absent chemist's work, the Maine court concluded nonetheless that his reliance on the absent chemist's "file notes, test results, and sample profile, all generated by and based on [the absent

chemist's] actions, carrie[d] the same problem identified by the Supreme Court in Smith." Id. at ¶ 57.[23]

The reasoning of these cases is persuasive.[24] We conclude that, in light of the Supreme Court's decision in Smith, where a

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[23] Other courts examining the permissibility of an independent expert opinion founded on an absent analyst's testimonial hearsay have come to the same conclusion -- namely, that such opinion testimony violates the confrontation clause. See People vs. Soliz, Cal. Ct. App., No. B333746 (Nov. 18, 2024) ("To the extent [the technical and administrative reviewer] sought to offer an 'independent opinion' based on his review of [the nontestifying analyst's] work, Smith explains the [c]onfrontation [c]lause can still be implicated"); State vs. Miller, Minn. Ct. App., No. A24-0205 (Feb. 24, 2025) (confrontation clause violated by admission of toxicology opinion of substitute expert who independently reviewed test results of absent analysts); State v. Clark, 296 N.C. App. 718, 724 (2024) (substitute expert's independent opinion violated confrontation clause even though expert reviewed nontestifying expert's report and testing results of chemical analysis); State v. Hale, 2024-Ohio-5579, ¶¶ 60-73 (experts who relied on data generated by nontestifying technicians and analysts "provided to them . . . in a series of out-of-court statements" as basis for opinions "implicitly offered those out-of-court statements into evidence," and because statements were testimonial, defendant "had a constitutional right to be confronted with those [nontestifying] witnesses, not merely the experts who generated the ultimate conclusions"); State v. Hall-Haught, 4 Wash.3d 810, 824-825 (2025) (substitute expert, even if absent analyst's supervisor who reviewed analyst's steps and signed toxicology report, could not testify, consistent with Smith, to "independent opinion" in sole reliance on absent analyst's factual statements and data from testing results). See also United States vs. Pascoe, U.S. Dist. Ct., No. 3:22-cr-88-DJH (W.D. Ky. July 31, 2024) ("Expert testimony that relies upon or repeats the findings of [testimonial hearsay] must . . . be excluded absent in-court testimony and cross-examination of the [declarant] or the requisite showings of unavailability and prior confrontation").

[24] The concurrence instead relies on four other cases from intermediate courts of appeal, three of which are unpublished

and none of which squarely addresses the holding in Smith regarding the confrontation clause violation that occurs when a substitute expert's opinion is based on raw data and depends on` the absent analyst's testimonial hearsay. In some of those cases, the defendant (unlike here) waived the confrontation clause violation. See, e.g., State vs. Shea, Minn. Ct. App., No. A23-1523, slip. op. at 8 (Sept. 9, 2024) (addressing question whether conviction was unfair given defendant's failure to object to admission of absent analyst's reports, where "[h]ad [the defendant] objected or moved to exclude that evidence, the [S]tate likely could have remedied any [c]onfrontation [c]lause or hearsay concerns by having [the absent analyst] testify"); Gourley v. State, 710 S.W.3d 368, 375 (Tex. Ct. App. 2025). One case determined there was no confrontation clause violation on the ground that in that case (unlike here) the absent analyst's notes and report were not conveyed to the jury. See Gourley, supra at 378 & n.3. Other cases fail to comprehend that the substitute expert's opinion in Smith was based on raw data and depended on the absent analyst's notes and report. Compare State vs. Kellum, N.M. Ct. App., No. A-1-CA-41306, slip op. at 5-6 (Apr. 23, 2025), and Gourley, supra, with Brief for Respondent at 1, Smith, 602 U.S. 779 (noting that one source of expert's opinion was "graphs reflecting machine-generated raw data" from nontestifying analyst's GC-MS testing), and Reply Brief for Petitioner at 16 n.*, Smith, supra ("[T]he GC-MS graphs appended to [the nontestifying analyst's] notes are not statements themselves. But [the analyst's] notations in the graphs that identify the samples she tested and the remarks in her notes describing what she did and observed are"). In Kellum, after misunderstanding the record in Smith, the court also acknowledged that it was without authority to change the State's highest court's precedent even if Smith now called it into question. Kellum, supra at 8 n.1.

Finally, in Dunlap vs. State, Md. App. Ct., No. 969, Sept. Term, 2023, slip op. at 17-18, 25 (Apr. 8, 2025), the Appellate Court of Maryland ultimately determined that an absent technician's report, stating that he sent the defendant's cell phone to a different laboratory to determine the password, received it back from the laboratory, uploaded the cell phone's data using software, and put the data in a particular password-protected server location, effectively "was more or less a link in the chain of custody," which the Supreme Court has noted goes to the weight of the evidence. See Melendez-Diaz, 557 U.S. at 311 n.1. To the extent Dunlap suggests that a technical reviewer's opinion based on raw data and dependent on an absent

substitute expert's opinion is dependent upon the truth of a nontestifying analyst's testimonial hearsay, the confrontation clause bars admission of the opinion even if the substitute expert is familiar with the testing analyst's laboratory protocols and reviewed the analyst's case file; an expert's opinion based on an absent analyst's test results that depends also on the truth of the analyst's testimonial hearsay as to the processes and protocols she said she followed to obtain those results is precluded by the confrontation clause.[25] Such expert opinion testimony, after Smith, is prohibited because the

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analyst's testimonial hearsay that the analyst followed proper protocols and procedures comports with the confrontation clause, we decline to adopt its misreading of the scope of the Supreme Court's decision in Smith. Compare Dunlap, supra at 23, citing State v. Miller, 475 Md. 263, 290-293 (2021), with Smith, 602 U.S. 798-799. See also Smith, supra at 819 (Alito, J., concurring in the judgment) (substitute expert "did not have personal knowledge of any of [the] facts [stated in the absent analyst's reports regarding her testing], and it is unclear what 'reliable' scientific 'methods' could lead him to intuit their truth from [the absent analyst's] records").

[25] Contrary to the concurrence's suggestion, we do not hold that an expert who reviews testimonial hearsay, even cursorily, cannot testify to the expert's interpretation of raw data. We conclude only that, after Smith, a substitute expert's opinion that depends on the testimonial hearsay of an absent analyst violates the confrontation clause; thus, where an expert's opinion based in part on raw data is not independent of the truth of the absent analyst's statements regarding the protocols and procedures the analyst said she followed, the true witness against the accused is the analyst insofar as the expert's opinion depends on the truth of the analyst's testimonial hearsay.

relevant witness against the accused, in a constitutional sense, is the absent analyst.[26]

B. Application. Here, LaBelle opined that the "data support[] the identification of" Suboxone; LaBelle's opinion identifying the controlled substance cannot be divorced from Dunlap's testimonial hearsay. Indeed, in response to the prosecutor's direct query whether LaBelle's opinion was based on her review of "the raw data," LaBelle testified only that her

[26] This case, like Smith, involves one analyst who herself performed all the steps in the chemical analysis and a substitute expert whose opinion depended upon the truth of the absent analyst's testimonial hearsay; even LaBelle's opinion based on the GC-MS output depended on Dunlap's testimonial hearsay as to the procedures and protocols she followed. The present case does not involve an expert who "builds on" the absent analyst's work, a scenario that the Supreme Court did not further define. Smith, 602 U.S. at 798-799. And this case does not present the practical challenges that may arise where an expert relies on multiple analysts who participate in testing or on multiple sources only some of which comprise testimonial hearsay, for which the Supreme Court has not yet provided additional guidance. See Williams, 567 U.S. at 86 (Breyer, J., concurring) (lamenting decision not to invite briefing on issue). Nor does this case involve an expert who relies on laboratory technicians to perform purely "ministerial" tasks under the expert's direct supervision. See generally D.H. Kaye, D.E. Bernstein, A.G. Ferguson, M. Wittlin, & J.L. Mnookin, The New Wigmore: A Treatise on Evidence § 5.5.2, at 297-299 (3d ed. 2021). We leave for another day these other scenarios, including the question whether the absence of such aforementioned technicians' live testimony goes to the weight (as opposed to the admissibility) of the expert's opinion. See Melendez-Diaz, 557 U.S. at 311 n.1 (acknowledging that not all persons who have "laid hands on the evidence must be called," that gaps in chain go to "weight" of evidence, and that those who do testify must do so live).

opinion was based on "reviewing the actual case file," which included Dunlap's notes. LaBelle's opinion on the identification of the controlled substance depended on the truth of Dunlap's out-of-court statements, including her view of the GC-MS output for which she relied on the truth of Dunlap's statements regarding the procedures and protocols Dunlap followed to generate the output.

Yet, it is the prosecution's burden to prove its case without violating the defendant's confrontation clause rights. See Bullcoming, 564 U.S. at 666 (prosecution "bears the burden" of proving its case consistent with mandates of confrontation clause); Melendez-Diaz, 557 U.S. at 324 ("the [c]onfrontation [c]lause imposes a burden on the prosecution to present its witnesses"); Taylor v. Illinois, 484 U.S. 400, 410 n.14 (1988) (constitutional rights such as that of confrontation "are designed to restrain the prosecution by regulating the procedures by which it presents its case against the accused. They apply in every case, whether or not the defendant seeks to rebut the case against him or to present a case of his own"). As discussed in detail infra, the Commonwealth did not do so.

I. Screening test. Admittedly, with regard to the screening test, LaBelle herself reviewed the pharmaceutical identification markings; but she did not testify that she was able to determine that the printout from the pharmaceutical

database, which itself was not testimonial,[27] reflected the results for the markings LaBelle personally observed. Instead, LaBelle's opinion depended on the truth of Dunlap's out-of-court statements that the pharmaceutical identification of the seized substance was the imprint Dunlap recorded in her notes, and that her database search showed the controlled substance was Suboxone on an initial screening review.

II. GC-MS printout. LaBelle testified that she reviewed a GC-MS output in the case file. Specifically, after LaBelle testified regarding the content of Dunlap's notes, LaBelle and the prosecutor had the following exchange:

> Q.: "Did you yourself, during your technical review, do a data review of the items on this particular case?"

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[27] The database printout does not itself present a confrontation clause problem because it is not testimonial as any statements in the database from which the printout was created were not given for purposes of creating testimony for use at trial against the defendant. See discussion supra.

In any event, as described in LaBelle's testimony, the use of the database was only a preliminary step before Dunlap conducted the confirmatory test central to the identification of the controlled substance. Alone, as LaBelle acknowledged when she described the need for a confirmatory test, it did not provide a scientifically sound methodology for determining the substance on the strip. See United States Department of Justice, Drug Enforcement Administration, Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) Recommendations, at 17-20 & n.4 (June 27, 2024) (placing pharmaceutical identifiers in lowest of three categories of identification techniques, among those that "achieve a low level of selectivity but provide general or class information," because of "potential for counterfeits").

> A.: "Yes. So, in reviewing the data printouts independently, as another forensic scientist, the data supports a conclusion of [Suboxone]."
>
> Q.: "So, in your opinion, can you say with a degree of scientific certainty what that controlled substance is?"
>
> A.: "Yes."
>
> Q.: "Okay. And what is that?"
>
> A.: "Again, the data supports the identification of [Suboxone]."

Viewed in isolation, this testimony might have suggested to the jury that LaBelle's opinion rested solely on the GC-MS output; and the printout of the GC-MS output itself, which was not introduced in evidence and is not in the record before us, was not testimonial hearsay.[28] See Commonwealth v. Souza, 494 Mass. 705, 718-719 (2024), quoting Commonwealth v. Davis, 487 Mass. 448, 465 (2021), S.C., 491 Mass. 1011 (2023) ("'[c]omputer-generated records are created solely by the mechanical operation of a computer and do not require human participation' -- i.e.,

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[28] The concurrence states that the jury could rely on this isolated aspect of LaBelle's testimony, thereby (according to the concurrence) avoiding the confrontation clause violation altogether. Post at . But, as discussed supra, the Commonwealth bears the burden to prove its case without violating the confrontation clause. In assessing whether the Commonwealth has met that burden, we do not view the evidence in the light most favorable to the Commonwealth. Instead, the Commonwealth must show that LaBelle's opinion did not violate the confrontation clause. See, e.g., Bullcoming, 564 U.S. at 666. And, as the Commonwealth concedes, LaBelle's opinion depended on Dunlap's notes; thus, even her view of the raw data was not independent of Dunlap's testimonial hearsay as to the procedures and protocols Dunlap claimed to have followed.

they do not contain a statement from a person"). See also United States v. Moon, 512 F.3d 359, 362 (7th Cir.), cert. denied, 555 U.S. 812 (2008) (raw results not "statements" and machine not "declarant" because "how could one cross-examine a gas chromatograph?"); United States v. Washington, 498 F.3d 225, 229-231 (4th Cir. 2007), cert. denied, 557 U.S. 934 (2009) (machine-generated data of chemical composition of defendant's blood were not hearsay statements); People v. Lopez, 55 Cal. 4th 569, 589-590 (2012), cert. denied, 568 U.S. 1217 (2013) (noting that "the printout produced by the gas chromatograph machine, which was not hearsay, was properly admitted and explained by the expert testimony").

Neither Smith nor the cases that have followed, see discussion supra, expressly address the situation where a substitute expert provides an opinion based only on raw data, like the GC-MS output in this case. Nor do we face that situation here.[29] As the Commonwealth rightly concedes,

[29] The concurrence misapprehends our holding, asserting that we conclude that a qualified expert may not decipher for the jury what a graph of a GC-MS output signifies. Here, LaBelle's opinion was not based on raw data alone; her opinion as to the GC-MS output depended on the truth of Dunlap's testimonial hearsay, as LaBelle herself testified when expressly asked by the prosecutor whether her opinion was based on the raw data alone, as the Commonwealth concedes on appeal, and as the concurrence ultimately acknowledges in concluding that LaBelle's testimony was not harmless beyond a reasonable doubt. See discussion supra.

LaBelle's opinion identifying the controlled substance did not rely on the GC-MS output alone. The Commonwealth instead acknowledges that LaBelle's opinion also depended on Dunlap's notes. Specifically, LaBelle's opinion identifying the controlled substance depended on the truth of Dunlap's out-of-court statements as to the proper procedures and protocols she said she used in inputting the tested sample into the GC-MS and the GC-MS output. Indeed, the above-quoted testimony was provided immediately following LaBelle's testimony describing the content of Dunlap's notes, which as discussed supra, were testimonial hearsay. Those notes, according to LaBelle, recorded Dunlap's statements as to what Dunlap did to prepare a strip for analysis by the GC-MS, the procedures and protocols Dunlap said she followed, and the results of the GC-MS testing retained by Dunlap in the case file. On cross-examination, trial counsel asked LaBelle whether she was "relying on the conclusions and opinions of [Dunlap,] who did the actual test." LaBelle responded, confusingly, "So, I am reviewing the data currently and saying that the data supports a conclusion of the results."

On redirect examination, the prosecutor attempted to clarify the basis of LaBelle's opinion testimony, asking, "And finally, as it relates to your opinion about this substance, is that based on the work of someone else or your own review of the

raw data?" LaBelle did not testify that she was relying on the raw data; instead, she responded to the prosecutor's direct inquiry as follows: "In reviewing the actual case file, which I have here, I'm giving an independent conclusion based on that information." The "actual case file," which LaBelle had in her hands as she testified, was described earlier by LaBelle; it included Dunlap's notes recording the weight of the substance to be tested, whether Dunlap performed a screening test and a confirmatory test, "specific data" for each test, the volume that Dunlap took, how much solution she used, the type of solution she used, the results for each test, and Dunlap's final conclusion.

Thus, LaBelle's opinion as to the identity of the controlled substance did not rest on the raw data set forth in the GC-MS output alone; instead, her opinion depended on the truth of the statements set forth in Dunlap's notes, the substance of which LaBelle conveyed to the jury by testifying that Dunlap had performed the tests that Dunlap's notes stated that she performed according to proper protocols.

To be sure, LaBelle also was the technical and administrative reviewer of Dunlap's work, reviewing Dunlap's notes contemporaneously for quality assurance. But the record does not indicate that LaBelle's contemporaneous role provided her with any personal knowledge as to the truth of the

statements in Dunlap's notes upon which she relied in forming her opinion. LaBelle's technical and administrative reviews, and her conclusion that Dunlap complied with laboratory protocols and procedures, rested on the truth of Dunlap's statements as to the process Dunlap said she undertook and the sample Dunlap said she tested; LaBelle observed none of these actions reported by Dunlap. Cf. Bullcoming, 564 U.S. at 673 (Sotomayor, J., concurring in part) (suggesting "[i]t would be a different case if, for example, a supervisor who observed an analyst conducting a test testified about the results or a report about such results" [emphasis added]). See Thomas, 2025 ME 34, ¶¶ 56-58 (substitute chemist compared data produced by GC-MS to known profile of fentanyl to opine on match, but his opinion relied on nontestifying chemist's "report that the particular data [from the GC-MS] came from the samples seized from [the defendant]").

While LaBelle asserted that her opinion was "independent" and based on her review of the "data" in the case file, LaBelle did not observe Dunlap perform the steps Dunlap described in her notes, and importantly, LaBelle did not testify that anything other than her acceptance of the truth of Dunlap's out-of-court statements, which LaBelle related to the jury, permitted her to confirm Dunlap's self-described compliance with the crime lab's procedures or that the raw data reflected the testing of the

strip seized at the house of correction. See, e.g., Barbosa, 457 Mass. at 782 (testifying expert conducted technical review of absent analyst's out-of-court statements, including worksheets and reports, and had signed analyst's final report but "only way to be certain that a mistake did not occur . . . would be to retest the samples" because testifying expert was not "standing over [the absent analyst's] shoulders").[30] She did not testify, for example, that something about the database printout or the GC-MS output allowed her to confirm the procedures Dunlap said she performed in compliance with the crime lab's protocols, or that this data permitted her to conclude that they reflected the strip Dunlap said she tested.

Thus, informed by the Supreme Court's reasoning in Smith, we conclude that LaBelle's opinion identifying the controlled substance was "independent" in name only. She reviewed the GC-MS output, which was not testimonial hearsay, but her opinion identifying the controlled substance, including her interpretation of the GC-MS output, was dependent on the truth of Dunlap's out-of-court testimonial statements. See Smith, 602

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[30] See generally H.M. McNair, J.M. Miller, & N.H. Snow, Basic Gas Chromatography 104 (3d ed. 2019) ("Errors that occur in any step can invalidate the best chromatographic analysis, so attention must be paid to all steps. . . . With major advances in instrumentation and data analysis in the past [forty] years, the major sources of error in [gas chromatography]-based methods are usually sampling and sample preparation . . .").

U.S. at 799. Although LaBelle was a crime lab supervisor and had reviewed Dunlap's notes as part of that role, Dunlap (not LaBelle) was the witness against the defendant in a constitutional sense; cross-examination of LaBelle could not ferret out any incompetence, fraud, weaknesses, mistakes, or other limitations that might not be apparent on the face of Dunlap's notes. See id. at 796-799. Accordingly, LaBelle's opinion identifying the controlled substance violated the confrontation clause. Here, the absence of Dunlap's live testimony violated the defendant's confrontation right, as discussed supra, and precluded LaBelle's opinion.

d. Impact of Smith on our common-law evidentiary rule. We have repeatedly examined our evidentiary rule following the Supreme Court's decisions concerning the confrontation clause, each time concluding that our evidentiary rule was more protective than the confrontation clause. See Commonwealth v. Tassone, 468 Mass. 391, 399 (2014). Following the change in confrontation clause jurisprudence set forth in Smith, discussed supra, we conclude that our evidentiary rule does not pass constitutional muster where an expert testifies to an opinion that depends on the truth of the testimonial hearsay of a nontestifying analyst; this is true even where the expert's opinion also is based on the expert's analysis of raw data generated by the nontestifying analyst that depends on the truth

of the analyst's testimonial hearsay as to the sample she says she tested and the processes and protocols she says she followed to obtain the raw data. See, e.g., Seward, 135 F.4th at 167-169.

Briefly, under our evidentiary rule, an expert opinion is admissible even if it is based on facts and data not in evidence so long as such facts and data are independently admissible and of the type reasonably relied upon by experts in the particular field in formulating an opinion.[31] See Department of Youth Servs. v. A Juvenile, 398 Mass. 516, 531-532 (1986). In contrast, the basis evidence -- that is, admissible but not admitted facts and data -- is inadmissible on direct examination of the testifying expert. Id.

Where the basis of an expert's opinion is the testimonial hearsay of an absent analyst, our evidentiary rule implicates the defendant's right of confrontation. See Barbosa, 457 Mass. at 784. Each time that we examined it prior to Smith, however, we concluded that our evidentiary rule comported with the defendant's confrontation right. See Commonwealth v. Greineder,

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[31] Facts or data are "independently admissible" if they "would potentially be admissible through appropriate witnesses." See Commonwealth v. Markvart, 437 Mass. 331, 337-338 (2002). See also Nardi, 452 Mass. at 389 n.11 (contents of nontestifying expert's autopsy report were permissible basis for testifying expert's opinion because statements in report would be admissible if nontestifying expert testified).

464 Mass. 580, 584-589, cert. denied, 571 U.S. 865 (2013) (reviewing cases). See also Tassone, 468 Mass. at 399 ("Our common law of evidence is more protective of confrontation rights . . .").

In so concluding, we reasoned that our rule prohibits the introduction of testimonial hearsay on direct examination of the expert; thus, the absent analyst's out-of-court statements would not be introduced on direct examination at all, let alone for the truth of the matter asserted. See Commonwealth v. Chappell, 473 Mass. 191, 202 (2015) ("an expert witness is not permitted to testify on direct examination to facts or data that another, nontestifying expert has generated, or to the nontestifying expert's own opinion, even though this information may be an important part of the basis of the testifying expert's opinion"). Such hearsay comes into evidence under our rule only if the defendant "opens the door" through cross-examination. See Greineder, 464 Mass. at 600 (defendant who elicits hearsay data on cross-examination "waives his confrontation right"); Barbosa, 457 Mass. at 785 (defendant "cannot reasonably claim that his right to confront the witnesses against him is violated by the admission of evidence that he elicits on cross-examination").

In addition, we reasoned that our evidentiary rule did not impinge on the confrontation right because the expert witness

would be subject to cross-examination concerning his or her expert opinion and the reliability of the absent analyst's testimonial hearsay. See Greineder, 464 Mass. at 584, 594-595. We previously recognized that to comport with the defendant's confrontation right, the proffered expert must be capable of being meaningfully cross-examined, see Tassone 468 Mass. at 400-402; not any old expert will do, see Smith, 602 U.S. at 798, citing Bullcoming, 564 U.S. at 659-661. Meaningful cross-examination requires, at a minimum, that the expert who relies on the testimonial hearsay of an absent analyst generally should be familiar with the protocols and processes of the absent analyst's laboratory. See, e.g., Tassone, supra at 401-402 (substitute DNA expert's opinion improperly admitted where expert was not affiliated with testing analyst's laboratory, had no personal knowledge of laboratory's protocols, and had not seen testing analyst's worksheets generated during testing). But see Commonwealth v. Nardi, 452 Mass. 379, 388-391 (2008) (substitute medical examiner's opinion properly admitted because it was based on review of nonhearsay "autopsy photographs and pathology samples," photographs and blood evidence at crime scene, statements regarding body decomposition that had been introduced in evidence, and testimonial hearsay recorded in absent medical examiner's autopsy report, despite substitute being from different office).

We held that an expert who relied on an absent analyst's testimonial hearsay would have to do more than "parrot[]" the analyst's conclusions; the expert's opinion would have to be "independent." Greineder, 464 Mass. at 595. Under the evidentiary rule, however, we concluded that an expert's opinion would be "independent" where the expert reviewed the data from tests run by the absent analyst, even though he or she did not observe the analyst perform the tests and instead relied on the truth of the analyst's out-of-court statements that the analyst complied with laboratory protocols and accepted scientific methodologies. See id.

Recognizing that the defendant may be "disadvantaged" because he or she cannot cross-examine the testing analyst regarding the analyst's actual compliance with laboratory protocols, any mishandling or mislabeling of the substance tested, or outright manipulation and fraud, we nonetheless allowed, under our evidentiary rule, the expert to testify to his or her "independent" opinion despite this "practical limitation" on the scope of cross-examination, which "exists whenever any expert relies on the results of tests, experiments, or observations conducted by another." Barbosa, 457 Mass. at 790. We reasoned that an expert who did not observe the absent analyst's testing nonetheless could be meaningfully cross-examined on the absent analyst's work because "[r]easonable

reliance . . . implies that the expert will have ascertained that the data on which he or she relies are adequate and appropriate to the task and were prepared in conformity with accepted . . . scientific . . . practices and procedures." Greineder, 464 Mass. at 596, quoting Munoz, 461 Mass. at 134.

Thus, under our evidentiary rule, LaBelle's reliance on the facts and data recorded in Dunlap's notes would not have precluded LaBelle from providing her opinion.[32] She was the crime lab supervisor, familiar with the crime lab's protocols and procedures; in fact, prior to her supervisory role, LaBelle had been an analyst. She performed the technical and administrative reviews on the case file. LaBelle's testimony was "independent" under our evidentiary rule because she reviewed the raw data from Dunlap's work, including the database printout and GC-MS output, which supported the identification of the controlled substance because Dunlap's testimonial hearsay stated that the data were generated according to proper protocols and procedures. See Greineder, 464 Mass. at 596. As such, LaBelle's opinion would have been admissible under our evidentiary rule. See, e.g., Commonwealth v. Grady, 474 Mass.

[32] The reasonableness of LaBelle's reliance on Dunlap's notes in forming her opinion was supported by LaBelle's testimony that she relied on Dunlap's notes in conducting a technical and administrative review of Dunlap's work, concluding that it conformed with the crime lab's policies and procedures.

715, 723-724 (2016) (permitting laboratory supervisor who conducted technical review of testing analyst's work to state "independent" opinion that seized substance was cocaine based on review of data generated by testing analyst); Commonwealth v. Gonzalez, 93 Mass. App. Ct. 6, 13 (2018) (allowing testimony regarding identity of controlled substance from substitute chemist who reviewed testing analyst's work and evaluated data to reach "independent" opinion). Following Smith, this aspect of our evidentiary rule, which permits a substitute expert who is a supervisor of the crime lab to provide an opinion regarding raw data generated by an absent analyst that depends on the truth of the testimonial hearsay of an absent analyst as to the processes and protocols she says she followed to obtain the data, no longer comports with the right of confrontation, and the admission of such expert opinion testimony is an error of constitutional dimension.

e. Review of constitutional error. Where, as here, the defendant's rights were preserved through objection at trial,[33]

[33] The Commonwealth mistakenly asserts that the defendant did not preserve his objection to the constitutional violation. As discussed supra, trial counsel objected at the close of LaBelle's testimony and moved to strike the testimony on the ground that it violated the defendant's right to confrontation. In fact, contrary to the Commonwealth's assertion, the trial judge expressly noted that her "rights are saved on that issue." Aside from its argument erroneously applying the standard for unpreserved errors, the Commonwealth otherwise does not contend

"we evaluate the admission of constitutionally proscribed evidence to determine whether it was harmless beyond a reasonable doubt." Commonwealth v. Rand, 487 Mass. 811, 814-815 (2021), quoting Commonwealth v. Wardsworth, 482 Mass. 454, 458 (2019). Unless we are satisfied that the "'erroneously admitted [evidence] had little or no effect on the verdicts,'" "[a] violation of the right to confrontation requires a new trial."[34] Commonwealth v. Montrond, 477 Mass. 127, 138 (2017), quoting Commonwealth v. Vasquez, 456 Mass. 350, 362 (2010).

To assess the effect of a particular witness's testimony on the verdict, we generally consider "the importance of the witness'[s] testimony in the prosecution's case, whether the testimony was cumulative, the presence or absence of evidence corroborating or contradicting the testimony of the witness on material points, the extent of cross-examination otherwise permitted, and, of course, the overall strength of the prosecution's case." Commonwealth v. Vardinski, 438 Mass. 444,

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that the error in admitting Dunlap's testimonial hearsay was harmless beyond a reasonable doubt.

[34] A new trial is the appropriate remedy where a conviction is set aside due to a procedural error. See Commonwealth v. Crowder, 495 Mass. 552, 559-560 (2025), petition for cert. filed, U.S. Supreme Ct., No. 24-7498 (June 25, 2025), citing Lockhart v. Nelson, 488 U.S. 33, 38 (1988). Because the right of confrontation is "a procedural rather than a substantive guarantee," a violation of that right will accordingly result in a new trial. Crawford, 541 U.S. at 61.

452 (2003), quoting Commonwealth v. DiBenedetto, 414 Mass. 37, 40 (1992), S.C., 427 Mass. 414 (1998). "[T]he prosecution bears the burden of establishing that the error was harmless," and "[w]e resolve all ambiguities and doubts in favor of the defendant." Vardinski, supra at 452-453.

LaBelle was a key witness for the prosecution. She alone testified that the strips that the defendant passed to the inmate contained a controlled substance. Other evidence, such as the jail telephone calls, suggested that the defendant was involved in a scheme to pass something to the inmate using the ruse of providing the inmate with legal paperwork, and the officers who confiscated the strips from the inmate suspected they contained Suboxone; but only LaBelle's testimony confirmed the presence of the controlled substance, an essential element of the government's case. See G. L. c. 268, § 28. As we have observed, portions of LaBelle's testimony were muddled; viewed in isolation, one portion of this testimony might have suggested that her opinion rested on the raw data set forth in the GC-MS output alone. But, as the Commonwealth concedes, her opinion as to the significance of the raw data was dependent on the truth of the contents of Dunlap's notes, which LaBelle also related to the jury to inform the jury of the procedures Dunlap recorded as having followed. In brief, LaBelle's opinion regarding the meaning of the raw data depended on the truth of Dunlap's

testimonial hearsay as to the procedures and protocols Dunlap said she followed. Thus, the Commonwealth has not shown that LaBelle's erroneously admitted testimony based on and relating that testimonial hearsay had "little or no effect" on the jury. See Montrond, 477 Mass. at 138.

Far from meeting its burden to prove its case without violating the defendant's constitutional right to confront the witnesses against her, here, the Commonwealth's critical evidence on the identity of the substance was dependent on the truth of Dunlap's testimonial hearsay. See Bullcoming, 564 U.S. at 666; Melendez-Diaz, 557 U.S. at 324; Taylor, 484 U.S. at 410 n.14. In short, LaBelle's opinion testimony and her testimony regarding the content of Dunlap's notes necessarily affected the verdict. See Montrond, 477 Mass. at 138. The error in admitting the constitutionally infirm portions of LaBelle's testimony was therefore not harmless beyond a reasonable doubt. See Rand, 487 Mass. at 814-815.

Notably, the Commonwealth has not tried to show otherwise. See note 33, supra. Instead, in connection with its erroneous assertion of the standard of review for unpreserved error, the Commonwealth contends that the defendant did not contest the identification of the substance as Suboxone, and that the defense at trial was only that the defendant was not aware that the envelopes she delivered contained Suboxone.

We addressed and rejected a similar argument in Vasquez, 456 Mass. 350. In Vasquez, the defendant was convicted of possession and distribution of cocaine, and at trial -- which took place before Melendez-Diaz -- the Commonwealth introduced forensic certificates to prove the identity of the substances at issue. Id. at 351-354. Defense counsel did not object to the admission of the certificates and in closing argument "appeared to concede that the substances in question were narcotics"; instead, "[t]he defense was mistaken identity." Id. at 354-355.

Nevertheless, we treated the constitutional error as preserved, in part because objection would have been futile under our pre-Melendez-Diaz jurisprudence, and turned to consider whether the error was harmless beyond a reasonable doubt. Vasquez, 456 Mass. at 356. We concluded that it was not, even though the defense at trial did not hinge on the identification evidence; the admission of the certificates was "the only direct evidence that the white powder . . . seized was cocaine," an element of the crimes charged against the defendant, and thus may have had an effect on the fact finder and contributed to the verdicts. See id. at 366-367. Similarly, here, even though the defendant did not continue to press the issue once the motion to strike Labelle's testimony was denied, the prosecution bore the burden to establish the

identity of the controlled substance and only LaBelle's improper opinion testimony provided that proof.

Moreover, the defense that was pursued -- that the defendant did not know the strips contained a controlled substance -- was not inconsistent with a defense based on the failure of the prosecution to show that a controlled substance had been delivered. See Vasquez, 456 Mass. at 368 ("a preserved constitutional error . . . cannot go unchecked on appeal because the defendant did not build his defense around it"). Indeed, the defendant objected to LaBelle's testimony and tried to strike it from the record. Following that objection, particularly where the error went "to the heart of the government's case," the defendant "ha[d] no further obligation . . . to contest the issue. There is, and should be, no burden on a defendant to continue to object to evidence at the risk of losing [her] constitutional rights." Id. Had that objection been sustained and the testimony stricken, as it should have been in view of Smith, the defendant would have had another defense -- namely, that the prosecution had not shown a violation of G. L. c. 268, § 28, at all. In these circumstances, the constitutional violation was not harmless beyond a reasonable doubt.

f. Retroactivity. Our conclusion drawn from Smith that the confrontation clause prohibits a substitute expert's opinion

that is dependent on the truth of a nontestifying analyst's testimonial hearsay, including an expert's view of raw data dependent on the truth of an analyst's testimonial hearsay, departs from our precedent and breaks new ground; it is therefore a new rule. See Commonwealth v. Sylvain, 466 Mass. 422, 428 (2013), S.C., 473 Mass. 832 (2016), quoting Teague v. Lane, 489 U.S. 288, 301 (1989) ("a case announces a new rule when it breaks new ground or imposes a new obligation on the States . . . [or] if the result was not dictated by precedent existing at the time the defendant's conviction became final"); Commonwealth v. Melendez-Diaz, 460 Mass. 238, 239-240 (2011), citing Teague, supra. Accordingly, the new rule applies to the defendant because her case is before us on direct review, but the rule "is not applicable to convictions . . . that had become final prior to its issuance." Commonwealth v. Boria, 460 Mass. 249, 251 (2011) (denying defendant's request "to apply Melendez-Diaz retroactively to the collateral challenge to her conviction").

3. Conclusion. For the foregoing reasons, we vacate the defendant's conviction of unlawfully delivering a class B controlled substance to a prisoner, G. L. c. 268, § 28, and remand for a new trial consistent with this opinion.

So ordered.

GEORGES, J. (concurring in the judgment, with whom Gaziano, J., joins). I concur with the court's judgment but write separately because I do not agree that the admission of Carrie LaBelle's ultimate opinion violated the defendant's right to confrontation under the Sixth Amendment to the United States Constitution. Ante at . In reaching its conclusion, the court reads the United States Supreme Court's decision in Smith v. Arizona, 602 U.S. 779 (2024), to abrogate our precedent allowing a testifying expert to offer an independent opinion based on testing conducted by a nontestifying analyst. Ante at . This reading of Smith goes too far. An expert who independently reviews raw, machine-generated data and testifies to her own conclusions -- based on her training and experience -- does not violate the confrontation clause. See Commonwealth v. Souza, 494 Mass. 705, 718-719 (2024).

Nonetheless, while I disagree with the court's application of Smith to LaBelle's opinion, I cannot conclude on this record that other portions of her testimony -- specifically those concerning Kimberly Dunlap's notes -- were properly admitted or, if not, that their admission was harmless beyond a reasonable doubt. I therefore concur in the judgment of the court.

1. Lack of impact of Smith in Massachusetts. The court reads Smith as if it announced a categorical rule that any exposure by a substitute expert to testimonial hearsay, however

incidental, taints the entirety of that expert's opinion, even when the opinion rests on independent analysis of raw, machine-generated data. Ante at . According to the court, when a testifying expert relies both on machine-generated data -- which, as discussed below, is not testimonial hearsay -- and on a nontestifying analyst's statements about "the processes and protocols she said she followed to obtain those results," the entire opinion becomes inadmissible under the confrontation clause. Id. at .

Smith imposes no such bright line rule. Rather, Smith addressed the admissibility of hearsay conveyed by a testifying expert in support of that expert's opinion. Smith, 602 U.S. at 783. The Supreme Court held that when "an expert conveys an absent analyst's statements in support of his opinion, and the statements provide that support only if true," the statements are offered for their truth and are inadmissible if testimonial. Id. In doing so, the Court expressly abrogated the contrary plurality rule in Williams v. Illinois, 567 U.S. 50, 58 (2012), which had permitted such statements to be admitted not for their truth, but to explain the basis of the expert's opinion. See Smith, supra at 795.

Our pre-Smith case law already reflects this understanding: the critical inquiry is whether the testifying expert has formed an independent opinion based on the expert's own analysis. See

Commonwealth v. Greineder, 464 Mass. 580, 595, cert. denied, 571 U.S. 865 (2013); Commonwealth v. Barbosa, 457 Mass. 773, 783–784 (2010), cert. denied, 563 U.S. 990 (2011). If so, the opinion does not violate the defendant's confrontation rights because the expert is testifying at trial and subject to cross-examination. Barbosa, supra. It is only when the expert functions as a "conduit" for a nontestifying analyst's opinion that the testimony becomes inadmissible testimonial hearsay (citation omitted). Greineder, supra. See Commonwealth v. Chappell, 473 Mass. 191, 202 (2015) ("an expert witness is not permitted to testify . . . to the nontestifying expert's own opinion").

Smith addresses the admissibility of the basis for an expert's opinion -- not the opinion itself. See, e.g., Smith, 602 U.S. at 783 (case concerns admissibility of "absent analyst's statements in support of [testifying expert's] opinion"). It does not address whether a testifying expert may rely on machine-generated data in forming an admissible opinion. That distinction matters. Massachusetts law has long drawn a line between the admissibility of the expert's opinion and the inadmissibility of any hearsay statements underlying that opinion.[1] Greineder, 464 Mass. at 584.

[1] While, as in the present case, a gas chromatography–mass spectrometry test was performed in Smith, 602 U.S. at 791, the

The court emphasizes the phrase in Smith describing an expert who "merely replicates, rather than somehow builds on," a nontestifying analyst's opinion. Smith, 602 U.S. at 799. This language does not impose a new requirement that a testifying expert must "build on" a prior opinion to render his or her own opinion admissible. Rather, it addresses whether the testifying expert is simply repeating hearsay that is potentially testimonial. Id. Accordingly, Smith does not displace our long-standing framework for determining whether an expert opinion is independent for confrontation purposes.[2] By

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decision features no discussion of the extent to which the expert relied on any data derived from that test in forming his opinion. Moreover, even the petitioner in Smith conceded that it would have been proper for the expert to "testify generally that certain data he reviewed in the abstract reflected the presence of illicit drugs without revealing [the underlying analyst's] statements about what she did to generate those data." See Reply Brief for the Petitioner at 18, Smith 602 U.S. 779.

[2] Indeed, the holding in Smith aligns with this court's jurisprudence. See, e.g., Greineder, 464 Mass. at 583-584 (nontestifying analyst's out-of-court statement, even when used as basis of testifying expert's opinion, "is offered for its truth and, therefore, is hearsay"); Commonwealth v. Nardi, 452 Mass. 379, 391-394 (2008). In Nardi, the court held that a pathologist could testify as to his opinion about the cause of a victim's death, where the opinion was based in part on his review of materials generated by a nontestifying medical examiner, including an autopsy report, notes, diagrams, photographs, tissue slides, and a toxicology report. Id. at 383, 388-390. In so holding, the court relied on Department of Youth Servs. v. A Juvenile, 398 Mass. 516, 531 (1986), where we held that an expert is permitted to "base an opinion on facts or data not in evidence if the facts or data are independently admissible and are a permissible basis for an expert to consider

interpreting Smith otherwise, the court has needlessly unsettled Massachusetts law.

Under our precedent, exposure to some testimonial hearsay does not automatically render a substitute expert's opinion inadmissible. See, e.g., Commonwealth v. Nardi, 452 Mass. 379, 390–391 (2008) (no confrontation clause violation where testifying expert's opinion relied on testimonial hearsay but reflected expert's own analysis). Nor is an opinion inadmissible simply because the testifying expert reaches the same conclusion as the nontestifying analyst; two experts may independently arrive at the same conclusion. Id. at 390.

Our cases focus on whether the testifying expert's opinion is meaningfully independent, based on the totality of the information reviewed. Nardi, 452 Mass. at 389–390. When the materials include computer-generated records, the confrontation analysis further depends on the nature of the data: whether it is "'computer-generated,' 'computer-stored,' or a hybrid of both." Commonwealth v. Davis, 487 Mass. 448, 465 (2021), S.C., 491 Mass. 1011 (2023). See, e.g., Souza, 494 Mass. at 718;

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in formulating an opinion." The pathologist could not, however, testify on direct examination as to any findings or conclusions within the autopsy report, which were testimonial hearsay and therefore inadmissible. Nardi, supra at 391-394. That holding is harmonious with the Supreme Court's subsequent conclusion that an absent analyst's statements conveyed in support of a testifying expert's opinion constitute hearsay. See Smith, 602 U.S. at 783.

Commonwealth v. Brea, 488 Mass. 150, 159–160 (2021). Purely machine-generated data -- such as a gas chromatography–mass spectrometry (GC-MS) printout -- does not constitute hearsay because it is created automatically, without human input. Souza, supra. See United States v. Moon, 512 F.3d 359, 362 (7th Cir.), cert. denied, 555 U.S. 812 (2008); United States v. Washington, 498 F.3d 225, 230 (4th Cir. 2007), cert. denied, 557 U.S. 934 (2009). As Justice Sotomayor noted in her concurrence in Bullcoming v. New Mexico, 564 U.S. 647, 673–674 (2011), the Court did not decide whether "a State could introduce . . . raw data generated by a machine in conjunction with the testimony of an expert witness." That was likewise the case in Smith.

Accordingly, expert opinions based on raw, machine-generated data remain admissible under the confrontation clause, even after Smith. A qualified expert may testify to her own opinion based on machine output -- such as a GC-MS printout -- even if she did not personally conduct the underlying test. See Souza, 494 Mass. at 718-719. This principle has been reaffirmed in multiple post-Smith decisions. See, e.g., Gourley v. State, 710 S.W.3d 368, 378 n.3 (Tex. App. 2025) (distinguishing Smith where testifying expert "formed his own conclusions based upon his review of the raw data"); State vs. Shea, Minn. Ct. App., No. A23-1523, slip op. at 10-11 (Sept. 9, 2024) (testimony admissible where expert independently reviewed machine-generated

data); State vs. Kellum, N.M. Ct. App., No. A-1-CA-41306, slip op. at 6-7 (Apr. 23, 2025) (testifying expert "came to independent conclusions based on his review of the data from the machine" despite reviewing nontestifying expert's notes).[3] These decisions correctly distinguish between testimonial statements and the routine, standardized production of raw machine-generated data.[4]

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[3] The court asserts that none of these cases "squarely addresses the holding in Smith." Ante at note 24. However, each case expressly acknowledges Smith and explains why it does not apply. See Gourley 710 S.W.3d at 378 n.3 (distinguishing Smith where expert "formed his own conclusions" based on independent review of "raw data" generated by underlying analyst); Shea, Minn. Ct. App., No. A23-1523, slip op. at 5 ("unlike the expert's testimony in Smith, [here the expert's] testimony was premised upon a machine-generated DNA profile," which is not hearsay); Kellum, N.M. Ct. App., No. A-1-CA-41306, slip op. at 7 ("To the extent that Smith changed the applicable [c]onfrontation [c]lause analysis, it does not affect [the court's holding that raw data produced by an underlying analyst is not testimonial] because, as we have said, raw data was not relied on by the testifying expert in Smith").

[4] The court further asserts that these decisions fail to account for the fact that "the substitute expert's opinion in Smith was based on raw data and depended on the absent analyst's notes and report." Ante at note 24. The implication appears to be that any expert opinion based on a combination of raw data and testimonial hearsay is per se inadmissible under Smith. But again, that is not what Smith holds. Smith addresses the admissibility of the basis for an expert's opinion, not the opinion itself.

Moreover, the court's assertion that the Smith expert reviewed "raw data" rests solely on the respondent's brief, which states only that one source of the expert's opinion was "graphs reflecting machine-generated raw data." Brief for Respondent at 1, Smith, 602 U.S. 779. It remains unclear, however, (1) whether that data was first transcribed -- perhaps

Even so, whether an expert's opinion is based on machine-generated data is not the only consideration in determining the admissibility of that opinion. We have long required that a testifying expert possess meaningful knowledge of the relevant laboratory processes, typically through affiliation with the laboratory, familiarity with its protocols, or service as a technical reviewer of the prior analyst's work. See Commonwealth v. Sanchez, 476 Mass. 725, 732 (2017); Barbosa, 457 Mass. at 791. We have accordingly disallowed testimony from experts lacking such foundational knowledge. See Commonwealth v. Tassone, 468 Mass. 391, 401–402 (2014).

Nothing in Smith disturbs this rule. To the contrary, courts applying Smith have reaffirmed that a testifying expert may offer an independent opinion where the expert has sufficient familiarity with the underlying testing and procedures. See Dunlap vs. State, Md. App. Ct., No. 969, Sept. Term, 2023, slip op. at 23 (Apr. 8, 2025) ("Nothing in Smith undermines"

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selectively or inaccurately -- by the absent analyst into notes or a report, and, if so, (2) whether the substitute expert reviewed the transcription rather than the machine-generated data itself. Absent that distinction, the court's reliance on the respondent's brief in Smith is unfounded; the substitute expert's opinion may have been based on information subject to human intervention. More fundamentally, Smith says nothing about whether the presence of raw data affects the admissibility of a substitute expert's testimony. The Supreme Court's opinion cannot be read to support the court's inference.

Maryland's rule permitting technical reviewer to testify to reviewer's own conclusions);[5] Shea, Minn. Ct. App., No. A23-1523, slip op. at 10-11 (expert testimony admissible where expert served as technical reviewer).

This requirement serves an essential purpose: it ensures that the expert can be meaningfully cross-examined -- not necessarily about every step taken by the original analyst, but about the reliability of the data and the soundness of the expert's own interpretation. See Greineder, 464 Mass. at 596-598. Where the expert has sufficient familiarity with the laboratory's standard protocols, or has served as the technical reviewer, the defendant retains a fair opportunity to test the basis for the expert's conclusions. See id. See also Sanchez, 476 Mass. at 732. Cross-examination may probe whether the expert made unwarranted assumptions, failed to account for potential error, or over-relied on data that appear flawed or incomplete. See Greineder, supra; Barbosa, 457 Mass. at 791.

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[5] The court dismisses Dunlap vs. State on the ground that the expert's testimony there concerned chain of custody information. Ante at note 24. The Appellate Court of Maryland held in Dunlap that Smith did not abrogate Maryland precedent permitting a technical reviewer's independent opinion to substitute for the original analyst's. Dunlap, Md. App. Ct., No. 969, slip op. at 23. That holding does not turn on whether the testimony involved chain of custody matters. Indeed, Dunlap relied on State v. Miller, 475 Md. 263, 284 (2021), which concerned the analysis of deoxyribonucleic acid evidence, not chain of custody issues.

Although the expert may not be able to answer how a particular analyst performed a specific procedure, the expert must still be able to explain why the raw data can be trusted and how, in the expert's independent judgment, that raw data supports the conclusion offered at trial. Greineder, supra at 596.

2. Application. a. LaBelle's independent expert opinion. At trial, LaBelle was asked whether she could state, "with a degree of scientific certainty," the identity of the controlled substance reflected in the data she reviewed. She responded, "[I]n reviewing the data printouts independently, as another forensic scientist, the data supports a conclusion of Buprenorphine and Naloxone" (emphasis added). Notably, she did not refer to or adopt Dunlap's conclusions; instead, she testified based on her own interpretation of the "data."

The critical question is what "data" LaBelle relied upon. Even assuming, as the court does, that Labelle's reference to "data" included some testimonial hearsay from Dunlap's notes, that alone does not render her opinion inadmissible. The relevant inquiry is whether her conclusion rested on an independent analysis. Labelle's testimony that she reached her conclusion "with a degree of scientific certainty," strongly indicates that she did not simply repeat Dunlap's conclusions. To express that level of certainty, she necessarily would have relied primarily, if not exclusively, on the GC-MS results. As

the court itself acknowledges, neither visual inspection of an unknown substance nor reference to a search of a pharmaceutical database using the substance's characteristics (such as its color or markings) would permit an expert to identify a substance with scientific certainty. Ante at note 27.

Thus, even if LaBelle reviewed Dunlap's notes, LaBelle's opinion was based on her independent analysis of the raw GC-MS data. Excluding her testimony solely because she reviewed those notes would impose an unnecessarily rigid rule -- one that would disqualify nearly all technical reviewers, even when their conclusions rest on machine-generated results. Whether LaBelle relied primarily or exclusively on the GC-MS output, her opinion reflected an independent judgment, not a surrogate endorsement of Dunlap's conclusions. It therefore did not violate the confrontation clause.

Even accepting the court's stringent rule, which I do not, it does not follow that LaBelle's opinion relied on both the GC-MS output and Dunlap's notes. LaBelle's testimony can reasonably be understood as resting solely on the machine-generated data, which alone could support her conclusion to a degree of scientific certainty. Such machine-generated data is not hearsay. See Souza, 494 Mass. at 718; Davis, 487 Mass. at 465. See also Moon, 512 F.3d at 362; Washington, 498 F.3d at 230.

The court's interpretation of Smith appears to suggest that only the analyst who performed the testing may testify to raw data, because such data is typically derived from the execution of "processes and protocols." Ante at ("an expert's opinion based on an absent analyst's test results that depends also on the truth of the analyst's testimonial hearsay as to the processes and protocols she said she followed to obtain those results is precluded by the confrontation clause"). But that reading unnecessarily departs from settled precedent. Had the Commonwealth introduced only the GC-MS results and called LaBelle to interpret them live at trial, there would be no confrontation clause violation. See Moon, 512 F.3d at 362 ("[H]ow could one cross-examine a gas chromatograph?"); State v. Michaels, 219 N.J. 1, 44, cert. denied, 574 U.S. 1051 (2014) ("Clearly, defendant could not cross-examine the machines themselves"). In substance, that is precisely what occurred here.

This court has long held that the central concern is not whether the expert "pushed the button" on the machine, but whether the expert formed an independent opinion and can be meaningfully cross-examined. See Souza, 494 Mass. at 719 n.17; Greineder, 464 Mass. at 596-598; Barboza, 457 Mass. at 791-793. The confrontation clause does not demand the impossible -- cross-examination of a machine or every technician who performed

a mechanical step in a standardized process. See Melendez-Diaz v. Massachusetts, 557 U.S. 305, 311 n.1 (2009) (government need not produce at trial "everyone who laid hands on the evidence").

What is constitutionally required is an opportunity for meaningful cross-examination -- and that is precisely what the defendant here received. That is, LaBelle possessed sufficient knowledge to permit meaningful cross-examination. Her background and direct connection to the State police crime laboratory (crime lab), as well as to the testing conducted in this case, provided a firm foundation for her expert opinion on both the identity of the substance analyzed and the laboratory's policies and procedures. LaBelle worked as an analyst at the laboratory for seven years before becoming a supervisor, in which role she regularly conducted technical reviews of other analysts' work. As she explained, a technical review involves verifying that each step of the laboratory's protocol was followed and that the analyst's conclusions are scientifically supported.

In this case, LaBelle served as the technical reviewer for the testing conducted by Dunlap. This role and her background at the crime lab gave her sufficient familiarity with the underlying procedures and results to support her own independent opinion. Accordingly, the defendant had a meaningful opportunity to cross-examine her regarding both the laboratory's

protocols and the basis for her conclusions. See Sanchez, 476 Mass. at 732; Barbosa, 457 Mass. at 791. Nothing in the court's opinion prevents the Commonwealth from presenting substitute expert testimony based on an independent review of raw data in this manner.

b. Dunlap's notes. While LaBelle's opinion was properly admitted, that does not resolve whether the admission of her testimony concerning Dunlap's notes violated the defendant's confrontation rights, as we must assess the admissibility of that testimony separately. See Greineder, 464 Mass. at 584.

The court assumes that Dunlap's notes are testimonial -- a questionable proposition, given the scant evidentiary foundation. The notes were not introduced at trial, marked for identification, or included in the record on appeal. Nor was Dunlap subject to voir dire examination regarding why the notes were created. Without knowing their content or context, it is impossible to determine whether the notes were created primarily to substitute for trial testimony, as required under the "primary purpose" test.[6] See Michigan v. Bryant, 562 U.S. 344,

[6] The court's assumption is also problematic given the uncertainty over whether Dunlap's notes even qualify as hearsay. If Dunlap prepared the notes solely as a personal aid to refresh her memory in preparation for testifying -- rather than to communicate information to others -- they may lack communicative intent and thus fall outside the definition of hearsay. See Mass. G. Evid. § 801(a) (2025) ("statement" under § 801[a] requires communicative intent); United States v. Seward, 135

358-359 (2011); United States v. Seward, 135 F.4th 161, 169 (4th Cir. 2025) (court "could not hold that the challenged testimony violated the [c]onfrontation [c]lause without determining . . . the 'primary purpose' for which [absent analyst's] statements were made"); People vs. Peterson, Mich. Ct. App., No. 364313, slip op. at 7 (July 25, 2024) (given uncertainties in record, testimonial nature of evidence was not properly before court).

The court cites two reasons for finding the notes testimonial. First, it emphasizes that Dunlap conducted her testing at the request of law enforcement. Ante at . See Melendez-Diaz, 557 U.S. at 317. While that may be so, it does not follow that every document generated during such testing is testimonial. The record does not show whether the notes themselves were created in response to a police request or for some other purpose. As the United States Court of Appeals for the Fourth Circuit recognized, "[a]lthough some statements produced by analysts are testimonial because they serve 'an evidentiary purpose,' others -- such as 'lab records' written 'to comply with laboratory accreditation requirements or to facilitate internal review and quality control' or 'notes . . . written simply as reminders to self' -- serve no evidentiary

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F.4th 161, 169 (4th Cir. 2025) (notes "written simply as reminders to self" may be nontestimonial [citation omitted]).

purpose and are not testimonial." Seward, 135 F.4th at 169, quoting Smith, 602 U.S. at 802.

Second, the court infers a "formal nature" to Dunlap's notes based solely on Labelle's testimony that each page bore Dunlap's initials and the laboratory's identification number. Ante at (Dunlap's notes appeared, based on LaBelle's description, "to have had at least some level of formality . . . further confirming the testimonial nature of the notes"). See Bryant, 562 U.S. at 366. See also Bullcoming, 564 U.S. at 671 (Sotomayor, J., concurring in part) ("a statement's formality or informality can shed light on whether a particular statement has a primary purpose of use at trial"). But formality alone does not render a statement testimonial. See Bryant, supra ("Formality is not the sole touchstone of our primary purpose inquiry . . ."). Documents may appear formal yet serve routine, nonevidentiary purposes. See Melendez-Diaz, 557 U.S. at 324. And here, without the notes themselves, we cannot assess whether they include other critical markers of formality, such as "a sworn [or] a certified declaration of fact." Williams, 567 U.S. at 111 (Thomas, J., concurring in the judgment). In short, without access to the notes or testimony from their author, we cannot meaningfully evaluate either their primary purpose or their formality.

The court's conclusion that the notes were testimonial is speculative and risks conflating ordinary laboratory documentation with testimonial statements prepared for use at trial. That approach risks unduly expanding the scope of the confrontation clause and imposing constitutional barriers where they are not justified, disregarding the practical realities of scientific record-keeping. It also goes further than the Supreme Court itself was willing to go in Smith, where the Court expressly declined to decide whether the records at issue were testimonial, stating that the question was "not now fit for [the Court's] resolution." Smith, 602 U.S. at 801. Again, the Court remanded the case for further factual development, instructing the lower court to identify the precise statements at issue and to "consider the range of recordkeeping activities that lab analysts engage in." Id. at 802. Here, by contrast, the court reaches a constitutional conclusion without knowing the content, context, or purpose of the notes.

3. Prejudice. "Before a Federal constitutional error can be held harmless, the court must be able to declare a belief that it was harmless beyond a reasonable doubt" (alteration, quotation, and citation omitted). Commonwealth v. Vasquez, 456 Mass. 350, 360 (2010). Central to this inquiry is "whether the error had, or might have had, an effect on the fact finder and whether the error contributed to or might have contributed to

the findings of guilty" (alterations and citation omitted). Id. Importantly, "[t]he inquiry is not whether, in a trial that occurred without the error, a guilty verdict would surely have been rendered, but whether the guilty verdict actually rendered in this trial was surely unattributable to the error" (quotation and citation omitted). Id. at 361. The harmless error standard is "more favorable to the defendant than the standards applicable to certain other nonconstitutional errors," because "we presume prejudice when faced with a constitutional violation." Commonwealth v. Yat Fung Ng, 491 Mass. 247, 256 n.13 (2023). It is the Commonwealth's burden to overcome this presumption. Id.

In evaluating whether a constitutional error was harmless beyond a reasonable doubt, courts consider several factors, including the importance of the improperly admitted testimony to the prosecution's case, its relation to the defense theory, whether the defense or the prosecution introduced the issue, the degree to which the testimony was cumulative, its frequency of reference, the presence or absence of corroborating or contradictory evidence, the scope of cross-examination, the availability and effect of curative instructions, and the overall strength of the Commonwealth's case. See Commonwealth v. Ramsey, 466 Mass. 489, 494 (2013); Commonwealth v. DiBenedetto, 414 Mass. 37, 40 (1992), S.C., 427 Mass. 414 (1998).

Here, although Dunlap's notes were not introduced in evidence and the full context of their creation remains unknown, I proceed -- consistent with our case law and the court's approach -- on the assumption that they may have contained testimonial material. Affording the defendant the benefit of the doubt, if the notes were prepared primarily to establish or prove facts for use at trial, they could qualify as testimonial under Bryant, 562 U.S. at 366. As noted, because the notes were not marked as exhibits and the circumstances surrounding their creation remain unexplored, their precise nature cannot be definitively determined. Even so, because the confrontation clause inquiry turns on whether Labelle relied on testimonial statements, I proceed on the assumption -- without definitive evidence -- that the notes included testimonial material.

The key question, then, is whether the erroneous admission of LaBelle's testimony referencing those notes was harmless beyond a reasonable doubt. On the one hand, Labelle's ultimate opinion identifying the substance as Suboxone was based on her independent review of the GC-MS data and was properly admitted. See Nardi, 452 Mass. at 395 ("The most important medical evidence from the Commonwealth's point of view was Dr. McDonough's opinion as to the cause of death. That opinion was properly admitted in evidence"). On the other hand, Labelle's testimony concerning Dunlap's notes arguably "provided an

important factual basis that undergirded and supported [LaBelle's] opinions." Commonwealth v. Durand, 457 Mass. 574, 587 (2010), S.C., 475 Mass. 657 (2016), cert. denied, 583 U.S. 896 (2017). While LaBelle testified that the GC-MS data identified the presence of buprenorphine and naloxone, it was her reference to Dunlap's notes that linked those findings to the specific item seized from the defendant.

That link -- the bridge between the machine-generated data and the physical evidence recovered from the defendant -- was critical to the Commonwealth's case. Based on LaBelle's testimony, Dunlap's notes included information pertinent to the substance's testing, from receipt of the item through screening and confirmatory testing. If those notes were created for use in a future prosecution, and if Labelle's testimony about them bridged the evidentiary gap between the analytical results and the seized envelopes, then the confrontation clause violation went to the heart of the prosecution's case. See Tassone, 468 Mass. at 403–404 (confrontation violation not harmless where inadmissible expert testimony "connected the defendant to the eyeglasses found at the scene"). Without that bridge, the jury lacked the necessary context to conclude that the GC-MS results pertained to the envelopes found on the defendant.

Moreover, although defense counsel cross-examined LaBelle, the opportunity for meaningful confrontation was limited. She

had no personal knowledge of the collection, handling, or initial testing of the evidence and could not speak to the integrity of those foundational processes. See Commonwealth v. Jones, 472 Mass. 707, 716 (2015) ("Where the only answer that the expert can give to questions concerning the chain of custody . . . is 'I don't know,' a defendant has been deprived of the opportunity for meaningful cross-examination").

The Commonwealth argues that the defendant was not prejudiced because she did not dispute that the substance was Suboxone. Indeed, defense counsel, during closing argument, referred to the substance as Suboxone and stated there was "[n]o dispute about that." But that concession, which aligned with the defense theory that the defendant lacked knowledge that the envelopes contained a controlled substance, did not relieve the Commonwealth of its burden to prove each element of the offense beyond a reasonable doubt. See Ramsey, 466 Mass. at 495. That burden included proving the identity of the substance. See Vasquez, 456 Mass. at 361.

This case closely parallels Vasquez, where we held that the erroneous admission of drug certificates identifying a controlled substance was not harmless -- despite defense counsel's concession during closing argument as to the substance's identity. Id. at 354-355, 366-367. As we explained, "[t]he Commonwealth's burden of proving every element

of its case cannot be transferred to the defendant because of his counsel's choice of defense." Id. at 367-368.

"The standard of harmlessness beyond a reasonable doubt is a stringent one, for if 'loosely applied,' the concept of harmless error 'can serve too readily as a bridge for a procession of mistakes and injustices.'" Vasquez, 456 Mass. at 361, quoting Commonwealth v. Sinnott, 399 Mass. 863, 872 (1987). Keeping this standard in mind, and given the uncertainty surrounding the content and context of Dunlap's notes, the Commonwealth has not shown beyond a reasonable doubt that the admission of Labelle's testimony referencing those notes -- assuming they were testimonial -- was harmless. I therefore respectfully concur in the judgment.