

284 F.Supp.2d 193 (2003)

UNITED STATES of America,
v.
Henry ALFONSO III, Defendant.

[No. CRIM.A. 01-10468-WGY.](#)

United States District Court, D. Massachusetts.

August 13, 2003.

[194*194](#) Matthew H. Feinberg, Feinberg & Kamholtz, Boston, MA, Timothy G. Watkins, Federal Defender's Office, Boston, MA, for Defendant.

Bruce C. Judge, United States Attorney's Office, Boston, MA, Laura Kaplan, United States Attorney's Office, Boston, MA, Peter K. Levitt, United States Attorney's Office, Boston, MA, for Plaintiff.

MEMORANDUM

YOUNG, Chief Judge.

I. INTRODUCTION

The United States Courts operate the largest drug testing program in America. Its Administrative Office has entered into a lucrative, nationwide, sole-source contract with PharmChem Laboratories, Inc. to provide sweat patches for drug testing. This motion raised important questions about the accuracy of this sweat patch method for drug testing — questions that warrant searching scientific review.

On December 19, 2001, the grand jury returned a four-count indictment against Henry Alfonso III ("Alfonso"), charging him with (1) possession with the intent to distribute oxycodone; (2) unlawful use of a communication facility on November 8 and 9, 2001; (3) unlawful use of a communication facility on November 27, 2001; and (4) attempt to possess with intent to distribute oxycodone. Indictment [Docket No. 2]. Alfonso was subsequently released on bail with conditions by Magistrate Judge Joyce London Alexander. Order Setting Conditions of Release [Docket No. 4].

On June 12, 2002, the Government moved to revoke Alfonso's order of release due to his alleged failure to comply with certain of his conditions of his release — namely, his failure to undergo drug treatment as well as the fact that he had tested positive (via a sweat patch) for cocaine use. Mot. for Revocation of Order of Release [Docket No. 17]. Magistrate Judge Alexander held a hearing on this motion on June 19, 2002. At the conclusion of that hearing, Magistrate Judge Alexander denied the Government's motion and instead amended the conditions of Alfonso's

release, ordering him to undergo additional intensive drug treatment, to surrender his driving license, and to refrain from driving. June 19, 2002 Order on Motion to Revoke Bail [Docket No. 19].

On July 24, 2002, after more alleged violations, Alfonso appeared before Magistrate Judge Alexander for an appearance and preliminary hearing pursuant to a warrant for violation of the conditions of his supervised release. July 25, 2002 Order on Preliminary Revocation and Detention [Docket No. 23] at 1. At that hearing, the Government contended that Alfonso had violated the conditions of his release in three different ways: (1) Additional [195*195](#) positive drug test results, taken from Alfonso via a sweat patch, indicated that Alfonso had used cocaine; (2) Alfonso had failed properly to notify the government of a change in his residence; and (3) Alfonso had intimidated witnesses by posting information about those witnesses on an internet website. *Id.* Based on the Government's evidence of those offenses, Magistrate Judge Alexander ordered Alfonso to be detained pending a final hearing on revocation before this Court. *Id.* at 2. Alfonso subsequently sought review of that order in this Court [Docket No. 26].

On October 9, 2002, this Court held a hearing to review Magistrate Judge Alexander's detention order regarding Alfonso. At that hearing, Alfonso raised concerns about the accuracy of the sweat patch drug tests that had indicated his usage of cocaine. Recognizing the gravity of Alfonso's challenge, the Court subsequently conducted hearings on October 24, October 25, and November 1 to evaluate its merits. At the close of evidence on November 1, the Court affirmed Magistrate Judge Alexander's detention order. The following memorandum serves to discuss more fully the reasoning behind the Court's decision.

II. DISCUSSION

A. Standard for Revocation of Pretrial Release

A person found to have violated a condition of his pretrial release is "subject to a revocation of release, an order of detention, and a prosecution for contempt of court." 18 U.S.C. § 3148(a) (2000). Where a person is charged with violating a condition of his release, the judicial officer hearing the charge shall enter an order of revocation and detention if, after a hearing, the judicial officer:

(1) finds that there is —

(A) *probable cause to believe that the person has committed a Federal, State or local crime while on release;* or

(B) clear and convincing evidence that the person has violated any other condition of release; and

(2) finds that —

(A) based on the factors set forth in section 3142(g) of this title, there is no condition or combination of conditions of release that will assure that the person will not flee or pose a danger to the safety of any other person or the community; or

(B) the person is unlikely to abide by any condition or combination of conditions of release.

18 U.S.C. § 3148(b) (emphasis added).

As noted above, Magistrate Judge Alexander revoked Alfonso's release on July 24, 2002, finding that Alfonso had violated the conditions of his release by, among other things, using a controlled substance (cocaine). July 25, 2002 Order on Preliminary Revocation and Detention at 2. Magistrate Judge Alexander further found that the evidence "strongly supported the conclusion that the defendant cannot conform his conduct to that required by the conditions of his release and that he poses a danger to the community." *Id.*

This Court's review of Magistrate Judge Alexander's order is *de novo*. See, e.g., [United States v. Rivera, 104 F.Supp.2d 159, 159 \(D.Mass.2000\) \(Gorton, J.\)](#) ("A district judge is to engage in a *de novo* review of a contested release order issued by a magistrate judge.").

B. The Sweat Patch: An Overview

In 1998 — after an initial pilot program in 1996 and a 40-district-wide pilot program in 1997 — the Administrative Office of the United Courts (the "Administrative Office") authorized United States Probation and Pretrial Services officers to use the [196*196](#) sweat patch drug testing device as an alternative to urinalysis. See U.S. Probation & Pretrial Services, *Court & Community — An Information Series About U.S. Probation & Pretrial Services: A Brief History*, at <http://www.uscourts.gov/misc/history.pdf> (last visited August 12, 2003); Office of National Drug Control Policy, *Agency Budget Summaries, The Federal Judiciary, part V ("Program Accomplishments")*, at <http://www.ncjrs.org/ondcppubs/publications/policy/budget98/agency-08.html> (last visited August 12, 2003); Office of National Drug Control Policy, *Agency Budget Summary, The Federal Judiciary, part V ("Program Accomplishments")*, at <http://www.ncjrs.org/ondcppubs/publications/policy/99ndcsbudget/judiciary.html> (last visited August 12, 2003); Lara Bazelon, *Testing Testing*, Legal Affairs, July/August 2003, at 46.

There is a nationwide contract between the Administrative Office and PharmChem Laboratories, Inc. ("PharmChem"), pursuant to which the United States probation departments use sweat patches manufactured by PharmChem. ¹¹¹ 10/24/02 Tr. at 17-18; see also Bazelon, *Testing Testing*, at 46, 49. Since 1997, the Probation Office of the United States District Court for the District of Massachusetts (the "Probation Office") has used the sweat patch drug test. 10/24/02 Tr. at 17.

The sweat patch essentially operates like a large bandage that absorbs sweat from its wearer. It features an "absorbent pad sandwiched between the skin and an outer non-occlusive membrane that allows water vapor to pass through." [United States v. Snyder, 187 F.Supp.2d 52, 58 \(N.D.N.Y.2002\)](#). After the sweat patch is affixed to a person's skin, it adheres by forming a bond with the skin. *Id.* It then becomes a collection device: "[t]he offender's sweat wets the pad, the water in the sweat eventually evaporates through the non-occlusive membrane, and any drugs remain in the absorbent pad." *Id.* Once removed from the skin, the sweat patch cannot be re-attached. *Id.*

The sweat patch presents two main advantages over the urine tests that have traditionally been employed to detect drug use. First, the sweat patch poses fewer intrusions on the offender's

privacy and schedule. An offender wearing a sweat patch need not be monitored as he urinates, nor must he face random urine tests that may interfere with his work schedule.^[2] Instead, he can simply come into the Probation Office on a scheduled basis for removal of his patch and application of a new one. Second, the sweat patch has the potential to provide a more accurate picture of an offender's drug use. Whereas a urinalysis is essentially a snapshot that provides a picture of drug use over a 72-hour period, the sweat patch is worn continuously. [Snyder, 187 F.Supp.2d at 58](#). In addition, because of the widespread usage of the urine tests, techniques and products have been developed to "beat" them through dilution, adulteration, and substitution, thus further undermining the accuracy of urine tests. Dennis Crouch, et. al., *An Assessment of the Effectiveness of the PharmChek Sweat Patch Skin Cleansing Procedures*, 32 Bulletin of the [197*197 International Association of Forensic Toxicologists](#) 5, 5 (2002).

Questions, however, have arisen over the sweat patch's potential to be contaminated by drugs other than those recently ingested by the sweat patch wearer. Although an early challenge to that effect was rejected by a district court in 1999, [United States v. Stumpf, 54 F.Supp.2d 972 \(D.Nev.1999\)](#), a similar challenge brought in 2000 — buttressed with more evidentiary support, including the results of certain experiments performed internally by PharmChem — prompted the United States Attorney's Office for the District of Nevada to withdraw its motion to revoke the supervised release of an alleged offender. *United States v. McLemore*, Docket No. CR-S-95-157 (transcript of hearing on file with Court); *see also* Bazelon, *Testing Testing*, at 48-49. On January 30, 2001, the Administrative Office sent a memorandum to probation officers and pretrial services officers advising them of the challenge, informing them that independent testing of the sweat patch was being conducted, and stating that in the meantime, PharmChem would report test results as positive only where the sweat patch result met a threshold level. Memorandum from the Administrative Office to Chief Probation Officers and Chief Pretrial Officers (January 30, 2001).

The Administrative Office sent a subsequent memorandum on the topic on May 3, 2001, in which it stated that the independent study, conducted by Duo Research had concluded that contamination — if at all possible — "would occur only under the most extreme exposures." Memorandum from the Administrative Office to Chief Probation Officers and Chief Pretrial Officers (May 3, 2001); *see also* Leo J. Kadehjian & Robert E. Willette, Duo Research, *Sweat Patch Testing For Cocaine: A Review of Issues and Studies*, Prepared for the Administrative Office of the U.S. Courts, February 26, 2001, *available at* <http://156.119.80.10/courtoperations/fcsd/html/pubs/sweatpatch.htm> (last visited August 12, 2003). In its May 3, 2001 memorandum, the Administrative Office further noted that the Duo Research study "supported the current approach of reporting a positive cocaine test result that requires either cocaine or its metabolite, benzoecognine ["BE"], to be present at the 10 ng/ml cutoff." One of the authors of the Duo Research study — Dr. Leo J. Kadehjian — has apparently become a prominent expert witness on the subject of the sweat patch, *see, e.g., United States v. Zubeck, 248 F.Supp.2d 895, 898 (W.D.Mo. 2002)*, and, in fact, submitted an expert report in the instant motion on the Government's behalf.

Other studies have reached less benign conclusions about the accuracy of the sweat patch. In one 1999 study, researchers described evidence that among chronic drug users, drugs are sometimes stored in the adipose tissue beneath the skin before ultimately being transported to the skin

surface itself. Joseph A. Levisky, et. al., *Drug Deposition in Adipose Tissue and Skin: Evidence for an Alternative Source of Positive Sweat Patch Tests*, 110 Forensic Science International, 35-46. The researchers suggested that it was therefore "possible to envision a situation where a sweat patch, used as a detection device, might falsely indicate that new drug use had occurred." *Id.* at 45.

More recently, two research reports submitted to the United States Department of Justice on September 20, 2002, specifically distinguished between two types of sweat patch contamination: (1) external contamination from without, that is, "drugs permeate the skin in areas not covered by the patch, enter the blood stream, and are re-excreted in sweat into the patch"; and (2) external contamination [198*198](#) from within or under the patch, that is, "drugs on the exterior skin, not removed by the cleaning process[,] get caught under the patch. David A. Kidwell & Frederick P. Smith, *Susceptibility of PharmChek Drugs of Abuse Patch to Environmental Contamination*, available at <http://www.ncjrs.org/pdffiles1/nij/195986.pdf> (last visited August 12, 2003), at 2; Melissa Long & David A. Kidwell, *Improving the Pharmcheck Sweat Patch: Reducing False Positives from Environmental Contamination and Increasing Drug Detection*, available at <http://www.ncjrs.org/pdffiles1/nij/196030.pdf> (last visited August 12, 2003), at 3. The researchers concluded that "except in extreme cases of external contamination," contamination from without "is unlikely to occur, because, generally speaking, drugs do not enter the bloodstream through skin in high concentrations." Kidwell & Smith, *Susceptibility of PharmChek Drugs of Abuse Patch to Environmental Contamination*, at 2. They further concluded, however, that contamination from within presented a more likely scenario because less drug must be present to cause a false positive: "only a source of drugs, a plausible transfer mechanism to the skin, and binding of the drugs to the skin need occur." *Id.* A co-author of one of these studies — Dr. Frederick Smith — also has apparently become a prominent expert witness on the subject of sweat patches, see, e.g., [Snyder, 187 F.Supp.2d at 57](#); [Zubeck, 248 F.Supp.2d at 897-899](#), and submitted an expert report on Alfonso's behalf in the instant motion.

In the past year, challenges to the sweat patch have continued to be brought in the courts and have met with a range of results. In *Zubeck*, the court rejected the defendant's claims of contamination and revoked her supervised release. [248 F.Supp.2d at 899](#). By contrast, in *Snyder*, the court ruled that "although the sweat patch is generally reliable, it cannot be relied upon in situations where it is shown that the possibility of exterior contamination exists due to exposure to a basic solution containing drugs." [187 F.Supp.2d at 60](#). The *Snyder* court further ruled that the defendant's testimony that he resided with a crack cocaine user who used drugs in the home rendered his positive sweat patch results unreliable. *Id.*

At present, numerous probation offices continue to use the sweat patch. The United States Attorney's Office for the Northern District of New York — the district that brought the *Snyder* case noted above — has, however, discontinued the usage of the sweat patch as an institutional matter, according to the Government. 11/1/02 Tr. at 29-30. Moreover, the United States Attorney's Office for the District of Nevada — in which the *McLemore* case was brought — no longer relies in court on positive sweat patch results unless there is substantial corroborating evidence of a defendant's drug use. Bazelon, *Testing Testing*, at 49; see also 11/1/02 Tr. at 30. PharmChem's contract with the Administrative Office expires in August of 2003; it is not yet clear whether it will be renewed. Bazelon, *Testing Testing*, at 49.

C. Alfonso's Sweat Patch Results

In January 2002, Alfonso switched from random urinalysis to the sweat patch mode of drug testing. 10/25/02 Tr. at 40-41; *see also* Memorandum from Judith Oxford to Magistrate Judge Alexander (April 29, 2002) (marked as Exhibit C). At that time, Oxford instructed him to report to Pretrial Services on a weekly basis to have his patch removed and to have a new patch applied. 10/24/02 Tr. at 25-26. According to Oxford's reports to Magistrate Judge Alexander, however, Alfonso often failed to report on a weekly basis for removal of his patch, resulting in patches that were partially [199*199](#) detached by the time they were removed and therefore compromised. For example, Alfonso wore one patch from February 11, 2002 to February 26, 2002; by the time he had it removed, it was being secured with scotch tape. Memorandum from Judith Oxford to Magistrate Judge Alexander (June 19, 2002) (marked as Exhibit O).

On April 29, 2002, Oxford sent a memorandum to Magistrate Judge Alexander, describing Alfonso's non-compliance and stating that Alfonso had worn the patch placed on his arm on April 8, 2002 until April 25, 2002, at which point the "patch was almost completely off his arm and exposed to the air ... and [could not] be tested." Memorandum from Judith Oxford to Magistrate Judge Alexander (April 29, 2002). Oxford further reported that Alfonso was given a urine test on April 25, 2002, which was negative. *Id.* On May 31, 2002, Oxford advised Magistrate Judge Alexander that this patch had, in fact, tested positive for the cocaine metabolite BE. Memorandum from Judith Oxford to Magistrate Judge Alexander (May 31, 2002).

On June 12, 2002, the Government moved — based upon this evidence — to revoke Alfonso's supervised pretrial release. At the June 19, 2002 hearing on this motion, Magistrate Judge Alexander had before her two positive sweat patch results for Alfonso. The first result — which this Court marked as Exhibit F — came from the above-described sweat patch that Alfonso had worn from April 8, 2002 to April 25, 2002. This patch yielded a positive result for the metabolite BE in the amount of 24 nanograms, but did not yield a result for cocaine because the quantity was insufficient for testing. 11/1/02 Tr. at 18. In addition, at the time of the hearing Magistrate Judge Alexander also had before her a new positive sweat patch result that this Court marked as Exhibit G. This patch was worn by Alfonso from May 17, 2002 to May 28, 2002; it yielded a positive result for cocaine in an amount higher than 100 nanograms, but was below the cut-off level for the metabolite BE (that is, below 10 nanograms). *Id.* at 20; *see also* Memorandum from Judith Oxford to Magistrate Judge Alexander (June 19, 2002). At the conclusion of that hearing, Magistrate Judge Alexander did not revoke Alfonso's bail but instead imposed additional conditions upon him.

The Government subsequently moved again to revoke Alfonso's pretrial release, based, among other things, on two additional positive sweat patch results, which this Court has marked as Exhibits H and I. The sweat patch marked as Exhibit H was worn by Alfonso from May 28, 2002 to June 10, 2002; it yielded positive results for both cocaine and the metabolite BE in excess of the threshold level, that is, in excess of 10 nanograms. 11/01/02 Tr. at 24. The sweat patch marked as Exhibit I was worn by Alfonso from June 17, 2002 to June 24, 2002; it yielded a positive result for cocaine, but a result for BE that was below the threshold level. *Id.* at 25. Thus, at Magistrate Judge Alexander's hearing on this motion on July 24, 2002, she had a total of four

positive sweat patch results: tests F, G, H, and I. At the conclusion of the hearing, as noted above, Magistrate Judge Alexander revoked Alfonso's release and detained him.

At the time of Magistrate Judge Alexander's hearing, two additional sweat patch results were pending from patches that Alfonso had worn between June 17 and June 24, and between July 9 and July 16. *Id.* at 25. Those results subsequently both came back positive for cocaine, but below the threshold level for the metabolite BE; at the hearing before this Court, they were marked as Exhibits J and K. *Id.* at 25, 51. Thus, in total, this Court had six positive sweat patch results for Alfonso — Exhibits [200*200](#) F, G, H, I, J, and K — before it at the time of its hearing.

D. Alfonso's Claims of Contamination

Alfonso consistently asserted that the six positive sweat patch results are not due to his own recent use of cocaine; indeed, he testified on the stand that the last time he had used cocaine was approximately three-and-a-half years prior to July 2002. 11/1/02 Tr. at 4. In support of this assertion, Alfonso points out that he underwent a urine drug test on April 25, 2002 at Oxford's direction, and that the test was negative (although the sweat patch worn from April 8, 2002 to April 25, 2002 subsequently yielded a positive result); he subsequently asked to return to urinalysis, a request that Oxford denied. 10/25/02 Tr. at 44. Alfonso further testified that after learning in July of the additional positive sweat patch results, he voluntarily went to a laboratory for a blood test. *Id.* at 45. The laboratory report, dated July 23, 2002, states that no drugs were detected in Alfonso's blood; it was marked by this Court as Exhibit S.

Alfonso identified two potential sources that may have led to contamination of his patch: (1) his residence in a house formerly occupied by a drug user; and (2) his contact with his wife, an exotic dancer. Alfonso further asserted that the inconsistent protocol followed by the various pretrial service officers who applied his patches resulted in a failure to clean sufficiently the area on his arm where the patches were placed, thus permitting the patches to become contaminated.

1. Sources of Contamination

Alfonso posited that his patch might have become contaminated with drug residue as a result of his residence at 31 Russell Street in Fall River, Massachusetts. Alfonso testified before this Court that he moved with his family into this house in approximately the first week in May, 2002, and that he spent significant time during April cleaning the house. *Id.* at 47. Alfonso further testified that the person who had previously lived in the house was a drug user, claiming that he became aware of this once he began cleaning. In support of this claim, Alfonso produced a letter from his landlord, Geraldine Kempf, which was marked as Exhibit A at the Court's hearing. In this letter, Kempf stated that the prior resident of the house "had druggies living with her, [and] also did many drug [sic] herself. This is why I had to evict her. Because I live in Pennsylvania Mr. Alfonso got rid of a lots [sic] of junk that was left behind. When they were cleaning they came across many needles and the [sic] such."

Alfonso also asserted that his sweat patch may have become contaminated as a result of his contact with his wife, who works as an exotic dancer. In fact, Oxford testified that Alfonso told

her that he "had sex with his wife and he believed that his wife used cocaine," and asked her whether "if he was having sex with somebody and they were using cocaine that would possibly trigger a positive test for him." 10/24/02 Tr. at 28-29. Alfonso, however, has disputed that he ever told Oxford that his wife actually used cocaine. He testified that he simply asked Ms. Oxford whether he could "have gotten a positive test from sex," explaining that because his wife works as a dancer, he believed that her skin might have become contaminated with money that contained cocaine residue, perhaps by "sitting on somebody's lap [that] might have had coke money on it." 11/1/02 Tr. at 5-7.

2. Administration of the Patch

Alfonso further argues that the Pretrial Services officers in this District who were involved in the application of his patch followed an inconsistent protocol that 201*201 failed to prevent contamination of the patch from drug residue. Indeed, the testimony adduced at trial indicated not only that the officers within this District did not uniformly follow the same protocol, but also that there is a troubling lack of clarity as to the optimal protocol for application of the patch.

At the hearing before this Court, Oxford — who trains the Pretrial Services officers in this District as to the application of the sweat patches — described the procedure that she teaches as follows:

[W]hat we would do is we would take an alcohol swab — actually, you would put on, in the video the PharmChem suggests or recommends that you wear rubber gloves, latex gloves. So, you would put your latex gloves on, you would clean a surface area on the person's arm, and you would scrub rigorously so that you could take off the first layer of skin cells so that it would make a nice seal. Then they ask you to do it a second time as well. So there's two alcohol pads that you use and you clean it again. In fact, if it still appears that there's skin cells there or dirt, then they continue to ask you to clean with that alcohol pad until the surface is clean.

After that you let it dry for 60 to 90 seconds....

And then you make sure that the patch is completely dry. You unseal the patch, and you, there's a sticky layer, you take that off and you put it, you ask the person to make a muscle so that the skin will be taut, and you place the patch on the arm and then go around with your finger several times around the clear face to help the adhesive stick. Then after that is stuck you peel of the outer layer of the patch, throw that away and then the patch is secured.

10/24/02 Tr. at 40-41.

Because Alfonso is male, and because Pretrial Services officers of the same sex apply sweat patches to defendants in this District, Oxford herself did not apply the sweat patch to Alfonso. *Id.* at 20. Thus, this Court also heard the testimony of the two Pretrial Services officers who actually applied the sweat patch to Alfonso: Thomas O'Brien ("O'Brien") and Joshua Ulrich ("Ulrich"). This testimony revealed deviations from the procedure described by Oxford. For example, in contrast to Oxford's testimony that she instructs Pretrial Services officers to clean defendants' arms with alcohol pads before applying the patch, O'Brien testified that he typically asks the defendant himself to clean his own arm with an alcohol swab. 10/25/02 Tr. at 10. Ulrich

similarly testified that although he sometimes wipes the defendant's arm with the alcohol pad himself, "[i]f the defendant does it right there in front of me, I'm satisfied that it's done in a manner that's going to, you know, achieve that objective then generally I let the defendant do it." *Id.* at 33. Moreover, Ulrich testified that — in direct contrast to Oxford's testimony that the recommended procedure is for the Pretrial Services officer to wear rubber or latex gloves — he does not wear rubber gloves at any point during the application of the patch. *Id.* at 32.

Alfonso's description of the cleaning procedure is consistent with that described by O'Brien and Ulrich. He testified that although "a few people would use gloves ... for the most part they wouldn't use gloves." *Id.* at 42. In addition, he testified that he was always asked to clean his arm himself, with little instruction: "As the officer was putting the pad inside of the plastic bag, I would, he would slide the box over of alcohol swabs and say clean your arm. I would take out an alcohol swab and I would, I would try to get the outline of the dirt or the glue, what would be around the patch, I would try to just take that off." *Id.* at 41. He further [202*202](#) testified that no one ever instructed him to clean his entire forearm, stating that "[a]ll I would do is just clean the glue mark off of it... [and then] blow on my arm until it would be dry enough." *Id.* at 41-42.

Interestingly enough, the procedure that Oxford herself described for application of the sweat patch is inconsistent with the procedure advocated by the Administrative Office. Although Oxford described the cleaning procedure as simply involving alcohol pads, the Administrative Office's May 3, 2001 memorandum to all Chief Pretrial Services and Probation Officers explicitly stated that "the best approach when applying a sweat patch is to have the *offender wash the area where the patch is to be applied with soap and water* before the officer wipes the skin with an isopropanol (alcohol swab)" (emphasis added). Memorandum from the Administrative Office to Chief Probation Officers and Chief Pretrial Officers (May 3, 2001). Further compounding the confusion is that the PharmChem patch itself (marked as Exhibit L) explicitly states on its face: "Use isopropyl alcohol skin preparation to clean skin and allow skin to dry completely prior to patch application (DO NOT USE SOAP)." As such, it is entirely unclear to this Court — and, presumably, to those charged with applying the sweat patch — whether soap and water should in fact be used to reduce further any risk of contamination. One thing that *is* clear is that neither O'Brien nor Ulrich used soap or water in the process of cleaning Alfonso's skin prior to the application of his sweat patch; both of them testified that they never do so, and Alfonso similarly testified that soap and water was never used. 10/25/02 Tr. at 20, 33, 42.

E. Analysis

As an initial matter, it is important to identify the standard for revoking Alfonso's pretrial release. At the hearing before this Court, both the Government and Alfonso stated that the standard was whether Alfonso's drug use could be proved by a fair preponderance of the evidence. 10/24/02 Tr. at 4. In fact, the applicable standard is even lower. Although a preponderance of the evidence standard was indeed applied in the above-noted cases involving sweat patch results — namely, *Stumpf*, *Zubeck*, and *Snyder* — those cases all arose in the context of the revocation of supervised release after imprisonment. *See* 18 U.S.C. § 3583(e)(3) (stating that the court may "revoke a term of supervised release ... if the court ... finds by a preponderance of the evidence

that the defendant violated a condition of supervised release"); [Stumpf, 54 F.Supp.2d at 973](#); [Zubeck, 248 F.Supp.2d at 897](#); [Snyder, 187 F.Supp.2d at 57](#).

The instant motion with respect to Alfonso, however, arises in the context of the revocation of pretrial release. The applicable standard is even more favorable to the Government when, as here, the allegation is that the defendant committed a crime while on pretrial release. The standard, in relevant part,¹³¹ is simply whether there is "probable cause to believe that the person has committed a Federal, State, or local crime while on release" and whether "there is no condition or combination of conditions of release that will assure that the person will not flee or pose a danger to the safety of any other person or the community." An affirmative finding on the first prong helps lead to an affirmative finding on the second prong: once there is probable cause to believe that the person "committed a Federal, State, or local felony, a rebuttable presumption arises that no condition or combination of conditions will assure that the person will not pose a danger to the safety of any other person or the community." 18 U.S.C. § 3148(b). *See also United States v. Rivera, 104 203*203 F.Supp.2d 159 (D.Mass.2000) (Gorton, J.)* (holding that blood test of defendant, who was out on pretrial release, indicated that he had been smoking marijuana; as such, "probable cause exist[ed] to believe that [the defendant] violated state law by possessing marijuana when he used it," there was reason to believe that the defendant was "unlikely to abide by any condition or combination of conditions of release," and the defendant's release should therefore be revoked).

As such, the Government's motion to revoke Alfonso's pretrial release fundamentally presented the question of whether there was probable cause to believe that Alfonso had used cocaine while out on release. In applying a preponderance of the evidence standard on the basis of the parties' representations, therefore, this Court employed an analysis that was even more favorable to Alfonso than was warranted. *See, e.g., United States v. Kin-Hong, 110 F.3d 103, 120-21 (1st Cir.1997)* ("The probable cause standard does not even require that the government make its showing by a preponderance of the evidence.").

That established, the Court now proceeds to discuss why it concluded that there was probable cause to believe that Alfonso used cocaine while on pretrial release — indeed, why it ruled that a fair preponderance of the evidence supported that charge.

As noted above, at the Court's hearing on this motion, it received expert reports from both Dr. Leo Kadehjian (on behalf of the Government), marked as Exhibit P, and from Dr. Frederick Smith (on behalf of Alfonso), marked as Exhibit U. Dr. Smith opined that Alfonso's patch may well have become compromised as a result of his residence and his contact with his wife and further opined that the "sweat patch application and removal procedures, both as recommended and as applied in this case," were not adequate to prevent contamination of the patch. Smith Expert Report ¶ 5. Dr. Kadehjian, on the other hand, asserted that there is not adequate scientific support for the notion that a sweat patch could become contaminated through any of the means described by Alfonso and further stated that Alfonso's negative urine and blood tests were not inconsistent with the positive sweat patch results, in that urine and blood tests provide information about a much narrower period of time. Kadehjian Expert Report ¶¶ 7-8.

The Court, after reviewing Dr. Smith's studies, concluded that although they do raise questions that warrant further research, they do not undermine the reliability of sweat patches to such a degree that the Court should reject them as a general matter, particularly because those studies are limited to laboratory contexts in which solutions containing drugs were applied directly to subjects' skin. As such, the Court did not give dispositive effect to Dr. Smith's studies but instead took them into account when considering Alfonso's specific sweat patch test results: namely, positive results F, G, H, I, J, and K.

An examination of each of these results indicated that some are more probative than others. Specifically, test result F lacks reliability because — due either to the length of time the patch was worn, actual tampering with the patch, or some combination of the two — the patch was almost completely detached from Alfonso's arm by the time it was removed and tested. In fact, Oxford herself wrote in her memorandum to Magistrate Judge Alexander that the patch was so significantly compromised that it could not be tested. The Court therefore concluded that test F could not be considered in determining whether Alfonso had used cocaine. On the other hand, test H is the result that most strongly [204*204](#) indicates that Alfonso did use cocaine, in that it was positive for both cocaine and the metabolite BE in amounts exceeding the cut-off level. It is true that this sweat patch was worn by Alfonso for thirteen days, but given that it was Alfonso himself who failed to report to have it removed as scheduled, the Court has declined to disregard it on that basis. The remaining test results — I, J, and K — can be grouped together in that all of them yielded positive results in excess of the threshold level solely for cocaine.

At the close of the Court's hearing, the Court found that the aggregate of tests G, H, and I — namely, the tests (other than F, which the Court found unreliable) before Magistrate Judge Alexander at the July 24, 2002 hearing — provided an adequate basis for Magistrate Judge Alexander's conclusion that Alfonso was using cocaine and should therefore be detained. Test results J and K — which were not before Magistrate Judge Alexander, but were before this Court — further supported that conclusion. The Court therefore affirmed Magistrate Judge Alexander's revocation of Alfonso's supervised release.

The Court deems it important to note that it was the *aggregate* of positive results that provided probable cause to believe that Alfonso used cocaine while on supervised release. The Court reserves judgment as to whether test result H alone would have been sufficient. The Court further notes its concern with the general lack of clarity regarding the appropriate protocol for application of the sweat patch, particularly in light of the conflicting scientific findings as to the potential for sweat patch contamination. At a minimum, the Pretrial Services officers in this District should be following a uniform protocol in their application of the patch. In this particular instance, there were enough positive results, taken over a span of several months, to convince this Court that there was probable cause that Alfonso was using cocaine — indeed, that it was more likely than not that this had occurred. That this degree of repetition was necessary to convince the Court, however, presents a real concern in terms of the general use of the sweat patch test — a concern that, in this Court's view, need be addressed if the sweat patch is to remain in use. The costs of inaccuracy in testing are measured not only in the \$25,000 taxpayer cost per day to hold hearings in the United States district courts,^{[41](#)} but also in the intangible but far more important costs in human liberty, should a mistake be made.

III. CONCLUSION

For the foregoing reasons, the Court affirmed Magistrate Judge Alexander's order revoking Alfonso's supervised release [Docket No. 23].

[1] PharmChem has named its sweat patch the "PharmChek Drugs of Abuse Patch."

[2] In fact, Alfonso requested to switch from urinalysis to the sweat patch for precisely this reason according to the testimony of Pretrial Services Officer Judith Oxford ("Oxford"), who supervised Alfonso. *See* 10/24/02 Tr. at 25 ("Mr. Alfonso had indicated that it was difficult for him to come in for random urines because of his work situation and had asked at one point if he could have the sweat patch placed on him. So it would make it a little easier to come in once a week and he would be able to have a set day.").

[3] The complete standard is set forth *supra* 195.

[4] *See Chappee v. Commonwealth*, 659 F.Supp. 1220, 1227 n. 9 (D.Mass.1987), *rev'd on other grounds*, 843 F.2d 25 (1st Cir.1988) for the method of calculation. This figure was adjusted for inflation to 2003.