

**Exposure to Blood Beyond the
Hands
and Reporting Practices
among those who
Draw Blood**

Survey Conducted by

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Preface

During September-October 2008, DenLine Uniforms, Inc., Quincy, IL conducted a nationwide survey among individuals employed drawing blood.

The objective(s) of the study were as follows:

- 1- To determine if blood from a patient splashes beyond the hand area, contacting the employee's skin, eyes, mouth or mucous membranes, or personal clothing, making this application subject to OSHA Directive CPL 02-02.069, mandating as part of this standard the use of PPE Lab Coats.
- 2- Further, to learn in instances where blood does splash beyond the hand area, the Causal Factor(s) so as to determine if all these causal factor(s) may be eliminated by instituting engineering and work practices to eliminate the potential for, as well as actual contact with blood as found under Definitions 29 CFR 1910.1030(b)-6 for Occupational Exposure.

Methodology...

The survey was announced in September 2008 issue of PT-STAT!, an e-newsletter published by the *Center for Phlebotomy Education*. This monthly publication reaches over 7,000 opt-in subscribers, all of whom are healthcare professionals, most are either phlebotomists, or have phlebotomy responsibility. Readers of this publication have interest in expanding their knowledgebase of their chosen profession.

In addition, the survey was accessed using a link from the *DenLine Uniforms, Inc.* web site www.denline-uniforms.com.

To capture the information, a self-administered questionnaire was developed using a combination of closed end and open end questions. The survey was designed to complete in about 15 minutes.

Survey participants were told their information provided would be strictly confidential, and only used as input to our study. Those who completed the survey self-selected...that is, they voluntarily choose to participate and were never contacted.

As an incentive to complete the questionnaire, respondents who included their name and contact information were offered a chance to win a token incentive. After the survey period ended, one winner was randomly selected and awarded the token incentive.

Sample Size and Composition...

Individuals 18 years old or older who have experience and are employed drawing blood were invited to participate.

A total of 180 surveys were completed.

Those who completed the survey were all involved in drawing blood as part or all of their job responsibility. Some 67.8% of the survey participants said they are Phlebotomists, 10.0% Medical/Clinical Technologists, 9.4% Medical/Clinical Technicians.

Participants averaged 14.3 years experience drawing blood.

Respondents employed by Hospitals and Medical Clinic/Physician Offices comprise 87.2% of the sample.

Geographically, respondents from all across the country participated, with the largest respondent group being from the Midwest (42.8%). Some 22.8% of the respondents surveyed are from the Northeast, with the balance of 34.5% almost equally distributed between the Southeast, Southwest and Northwest.

As to the statistical reliability of the data reported herein, the sample size of 180 respondents yields a margin of error of $\pm 7.22\%$ at the 95% confidence level.

Results of the survey are reported on the pages that follow.

Summary Findings

Demographics of Survey Participants...

- O A total of 180 respondents participated by completing a self-administered questionnaire.
- O As to Type Employer for whom they work, 121 (67.2%) are employed by a Hospital, 36 (20.0 %) employed by a Medical Clinic or Physicians Office, and 13 (7.2%) an Independent Laboratory.
- O- Regarding Type Employment...some 67.8% say they are employed as a Phlebotomist, Phlebotomy Manager, or Phlebotomy with Other Responsibilities in their Titles. Some 10.0% of those interviewed are Medical/Clinical Technologists, and 9.4% are Medical/Clinical Technicians. Medical Assistants are 3.9% of sample, Laboratory Management 2.8%, with the balance (6.1%) being Nurses, CLS, or Other Titles. All respondents interviewed indicated they draw blood.
- O- As to Geographic Representation of survey participants, some 77 (42.8%) were from the Midwest, and 41 (22.8%) were from the Northeast. Some 25 (13.9%) were from the Southwest, 21 (11.7%) from the Southeast, and 16 (8.9%) from the Northwest.

Respondents Use of Protective Lab Coats and Jackets when drawing blood...

- O- Slightly more than 8 in 10 (81.1%) of all respondents surveyed wear a Protective Lab Coat or Jacket when drawing blood.
- O- Among the 146 (81.1% of total sample) who wear Protective Coats or Jackets, 94 (64.4%) say they wear a fluid resistant coat. Another 41 (28.1%) said they wear a Polyester/Cotton Coat...with the balance of 11 surveyed (7.5% of sample) saying they Do Not Know the Fabric Composition.
- O- The high percent (81.1%) of those surveyed using Protective Lab Coats or Jackets is evidence that Management, Safety, or Employees have seen sufficient exposure/risk in blood draw applications to warrant this level of protection.

Years Experience Drawing Blood....

- O- The average years experience drawing blood among those surveyed is 14.3 years.

Estimated Times that Blood Splashed beyond the Hand Area....

O- Respondents were asked if they ever experienced blood splashing beyond the hand area during the years they have been drawing blood. About 3 in 4 (74.4%) said they have had one or more such experiences.

O- The 134 who said they have experienced blood splash go beyond the hand area estimated they have experienced a total of 920 such incidents...an average of 6.9 per respondent .

O- The study results provides compelling evidence that employees drawing blood not only have the potential for the contact of blood, but have a history of experiencing splashes of blood, thus become subject to the OSHA Directive CPL 02-02.069.

Applicable OSHA Definitions and Mandate...

OHS A CPL 02-02.069 under Definitions 29 CFR 1910.1030(b)-6 for Occupational Exposure, defines the term "reasonably anticipated contact" to include the potential for contact as well as actual contact with blood or OPIM .

Section D. Methods of Compliance-29 CFR 1910.1030 (d) sets forth the method by which employers must protect their employees from the hazards of bloodborne pathogens and comply with the standard...with section 12. Personal Protective Equipment- Paragraph (d) (3) stating *When there is occupational exposure, PPE must be provided at no cost to the employee to prevent blood or OPIM from passing through to, or contacting the employee's work or street clothes, undergarments, skin, eyes, mouth, or other mucous membranes* .

Causal Factor(s) for Blood Splashing beyond the Hand Area...

O- The 134 Survey participants who experienced blood going beyond the hand area were next asked to provide up to three (3) reasons for this occurring. The most frequent mentions of those surveyed were as follows:

Patient Movement Issues (36.6% Mention) ... with Combative/Non-Cooperative Patient being (19.4%), Patient Movement/Jerking (13.4%), and Patient Trauma (3.7%).

Drop/Spill/Leak while Handling/Transferring Blood -Syringe, Tubes, Container, etc. (34.3% Mention)...explained as dropped tube, syringe full of blood, spilled during transferring, lost control of device, etc.

Blood Draw Procedure /Technique Issues (29.1% Mention) ...described as distractions, pulling needle out too soon, pulled back too far on needle, pulled plunger out of syringe, needle came out of vein during blood draw, tourniquet not fully off, forgot to pull tube off the hub before pulling out needle, emergency situation/rushing, not pulling tube off the butterfly before removing, insertion problems, etc..

Equipment/Device Failure Issues (28.4% Mention) ... such as defect in vacutainer, defective tube holder, butterfly lure separated from syringe, malfunctioning vacutainer tube or syringe, leaky butterfly, leaking hub, pipette and serum separation, faulty blood collection set, adapter broken, etc.

Needle Drips/Spatter (24.6% Mention)...with most instances involving blood dripping from end of butterfly needle after removal, blood spray from needle during insertion, etc.

Blood Issues (20.9% Mention) ... caused by unique attributes of the patient, vein size, thinness of blood, clotting issues, etc.

Fingerstick as well as **Needle Guard/Capping Issues** were only mentioned by slightly less than 1 in 10 as being factor(s) causing blood to splash beyond the hand area

OSHA 29 CFR 1910.1030(d)-2 requires the employer to institute engineering and work practices controls as the primary means of eliminating exposure, however, it becomes apparent from the respondent comments (see verbatim comments grouped by causal factor) that a large percentage of the incidents will remain OSHA compliance issues due the variability and unpredictable nature of each blood splash.

This study finding helps explain why 81.1% of all 180 respondents who completed the survey wear lab coats when drawing blood...and about 2 of 3 (64.4%) that wear coats use Fluid Resistant.

Reporting Practices.....

O- Nearly 7 in 10 (68.9%) of the survey participants said their employer maintains a record of blood splash incidents, including causal factors...while almost 1 in 3 (31.1%) said they do not.

O- Some 101 of the 180 survey participants (56.1%) say they *Always Report* Blood Splash Issues.

O- On the other hand, 79 of the 180 respondents (43.9%) *Do Not Always Report* incidents, with 3 in 10 (30.0%) either saying they *Never Report* or *Only Sometimes Report* such incidents.

Reasons those who Do Not Always Report incidents gave for not reporting

The two most frequent reasons given for not always reporting included:

Only Report if Blood Contacts Skin/Mucous Membranes/Abraded Skin/ or Needlestick (42.0% Mention) ...with the need to report defined by the respondents in two different ways...those who said they only report if blood contacts the skin, eyes, mouth or other mucous membranes...while others said they only report if blood comes into contact with an open cut or wound in the skin along with eyes, mouth or other mucous membranes.

No Need to Report/Protection Provided by Lab Coat (33.3% Mention) ... with this mention resulting from the fact that 81.1% of all respondents interviewed wear a protective lab coat, the majority of which were Fluid Resistant. From the comments, respondents see no need to report if blood only contacts the lab coat...that is, they view the coat as having served its purpose.

Other mentions given by about 1 in 5 or more respondents include:

Policy/Risk Comment (19.8% Mention) ...with no employer reporting policy in place for most of these respondents.

Perception of Risk/Exposure Involved (17.3% Mention) ...with 14 of 51 who commented saying they are not concerned if blood contacts them...essentially seeing no harm being done.

Comments made by about 1 in 10 respondents who do not report pertain to:

Treatment of Areas Contacted by Blood (use soap and water, saniwipes, etc.)

Time to Report and Paperwork Involved (with the concern being the amount of time it takes, and impact the reporting will have if they do report).

Concerns over the Employee Image if Reported (with comments of being *embarrassed...manager making me feel incompetent...afraid of getting into trouble...and employer always thinking it's the phlebotomist's fault, never the equipment.*)