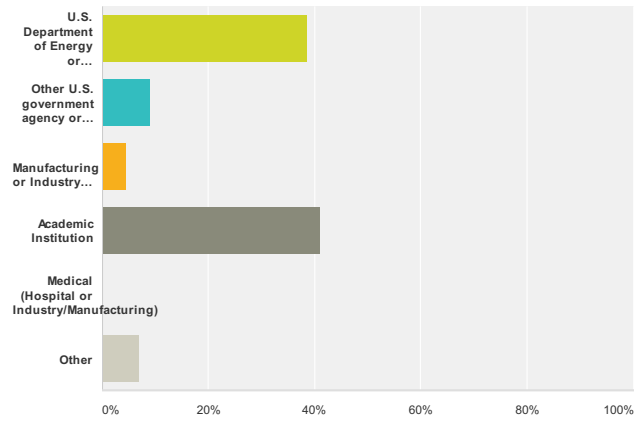


# Laser Safety Performance Metrics

## Q1 Affiliation:

Answered: 44 Skipped: 0

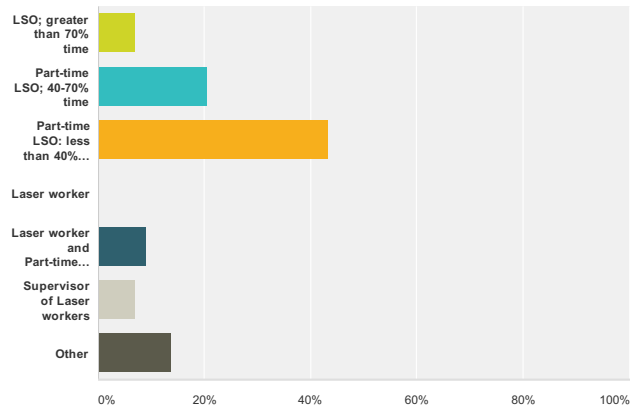


Answer Choices	Responses	Count
U.S. Department of Energy or DOE facility	38.64%	17
Other U.S. government agency or military	9.09%	4
Manufacturing or Industry (non-medical)	4.55%	2
Academic Institution	40.91%	18
Medical (Hospital or Industry/Manufacturing)	0%	0
Other	6.82%	3
<b>Total</b>		<b>44</b>

# Laser Safety Performance Metrics

## Q2 Laser-related job function: (Choose one answer that is the best match)

Answered: 44 Skipped: 0

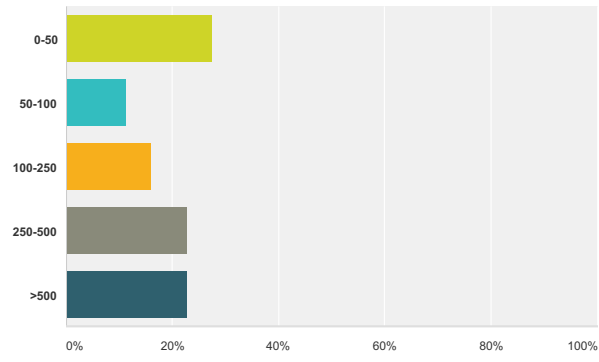


Answer Choices	Responses	Count
LSO; greater than 70% time	6.82%	3
Part-time LSO; 40-70% time	20.45%	9
Part-time LSO; less than 40% time	43.18%	19
Laser worker	0%	0
Laser worker and Part-time LSO	9.09%	4
Supervisor of Laser workers	6.82%	3
Other	13.64%	6
<b>Total</b>		<b>44</b>

# Laser Safety Performance Metrics

Q3 Approximate number of laser operators at your institution/facility (or in your area of responsibility):

Answered: 44 Skipped: 0

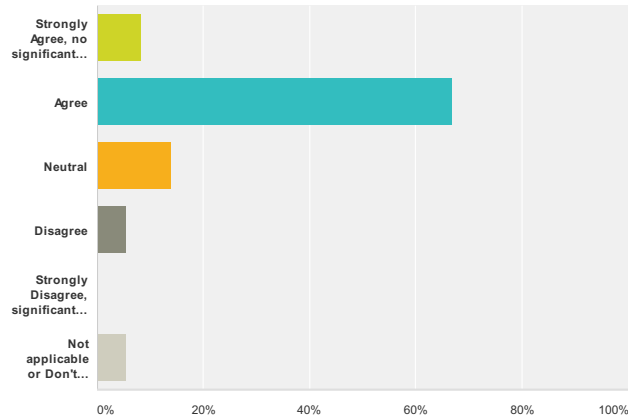


Answer Choices	Responses	
0-50	27.27%	12
50-100	11.36%	5
100-250	15.91%	7
250-500	22.73%	10
>500	22.73%	10
<b>Total</b>		<b>44</b>

# Laser Safety Performance Metrics

**Q4 Laser Safety Supervisors** are those who have line management responsibilities for safe laser operations in their lab. They must provide good site-specific On-the-Job Training, and do a good job managing and overseeing safe laser operations in their laser lab. They should visit the lab regularly and interact with laser operators, observing and discussing their work. How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, laser safety supervisors perform their job functions well no significant improvements are needed to reduce risk of a laser injury incident.

Answered: 36 Skipped: 8

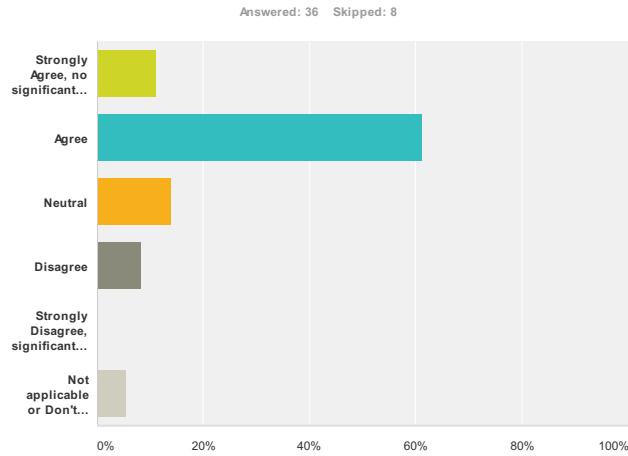


Answer Choices	Responses
Strongly Agree, no significant improvements are needed	8.33% 3
Agree	66.67% 24
Neutral	13.89% 5
Disagree	5.56% 2
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

#	Additional comments:	Date
1	Largely agree but always looking for ways to do better	9/3/2013 4:41 PM
2	Most supervisors are outstanding at this while a handful may need slight improvements	9/3/2013 3:01 PM
3	Laser system owners are responsible for providing the site specific OJT	9/3/2013 11:39 AM
4	There is ALWAYS room for Improvement	9/3/2013 8:37 AM

# Laser Safety Performance Metrics

**Q5 Laser Safety Supervisors are those who have line management responsibilities for safe laser operations in their lab. They must provide good site-specific On-the-Job Training, and do a good job managing and overseeing safe laser operations in their laser lab. They should visit the lab regularly and interact with laser operators, observing and discussing their work How well do you agree with the following statement? Laser safety supervisors at my institution/facility that I am familiar with perform their job functions well; no significant improvements are needed to reduce risk of a laser injury incident.**



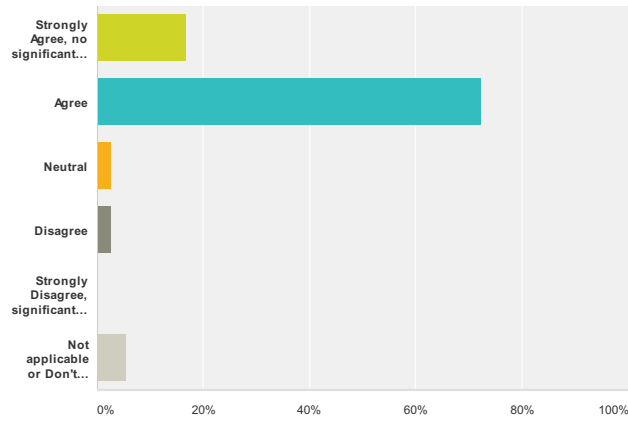
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	11.11% 4
Agree	61.11% 22
Neutral	13.89% 5
Disagree	8.33% 3
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

#	Additional comments:	Date
1	See above	9/3/2013 4:41 PM
2	We can always improve.	9/3/2013 3:24 PM
3	Program is set up well but individual performance may vary.	9/3/2013 11:39 AM
4	I would state that the key words here are the laser safety supervisors that I am "familiar" with. I know of other laser safety supervisors who are not as diligent.	9/3/2013 11:11 AM
5	Some supervisors are very good; others not so much. So hard to give a generalized answer.	9/3/2013 9:52 AM
6	It is not known how often they independently do this; the LSOs visit the LCAs at least every six months and generally find few observable issues.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q6 Available equipment and laser lab configuration: How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, these are good and are effective; no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 36 Skipped: 8



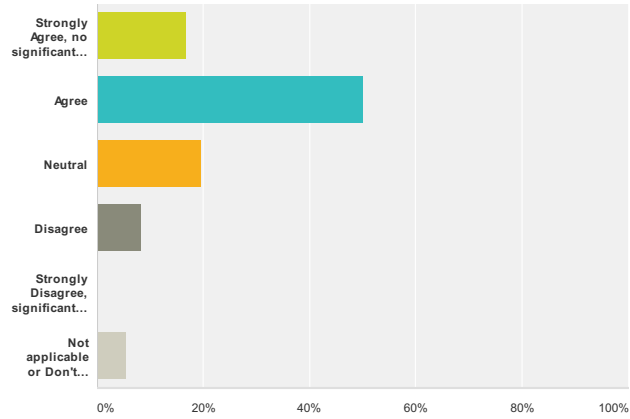
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	16.67% 6
Agree	72.22% 26
Neutral	2.78% 1
Disagree	2.78% 1
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

#	Additional comments:	Date
1	In fact many workers (and visitors) find out laser labs rules overbearing.	9/3/2013 11:11 AM
2	availability of equipment and or funds to provide safety measures? If so I would answer neutral as there is always a cost benefit issue involved.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q7 Available equipment and laser lab configuration: How well do you agree with the following statement? Within the laser labs at your facility/institution that you are familiar with, these are good and are effective; no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 36 Skipped: 8



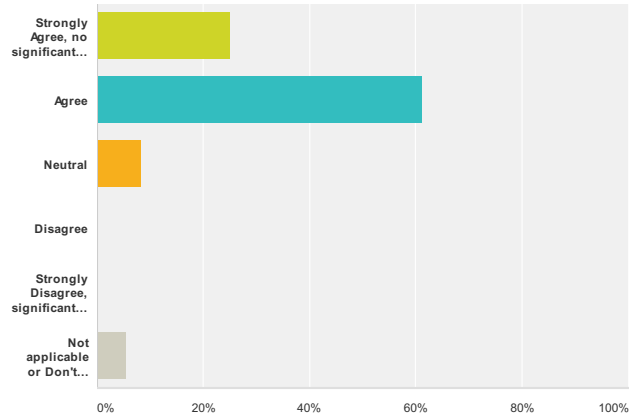
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	16.67% 6
Agree	50% 18
Neutral	19.44% 7
Disagree	8.33% 3
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

#	Additional comments:	Date
1	We can always improve.	9/3/2013 3:24 PM
2	see comments for question 6	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q8 Engineering Controls (such as interlocks, safety shutters, barriers and Class 1 enclosures): How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, these are well done and are effective no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 36 Skipped: 8



Answer Choices	Responses
Strongly Agree, no significant improvements are needed	25% 9
Agree	61.11% 22
Neutral	8.33% 3
Disagree	0% 0
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

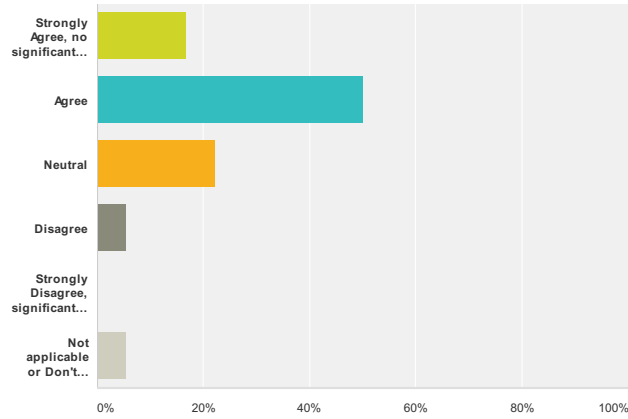
#	Additional comments:	Date
1	Barrier in some areas could be improved; these are usually balanced with access issues.	9/2/2013 8:36 AM



# Laser Safety Performance Metrics

**Q9 Engineering Controls (such as interlocks, safety shutters, barriers and Class 1 enclosures): How well do you agree with the following statement? Within the laser labs that you are familiar with at your institution/facility, these are well done and are effective; no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 36 Skipped: 8



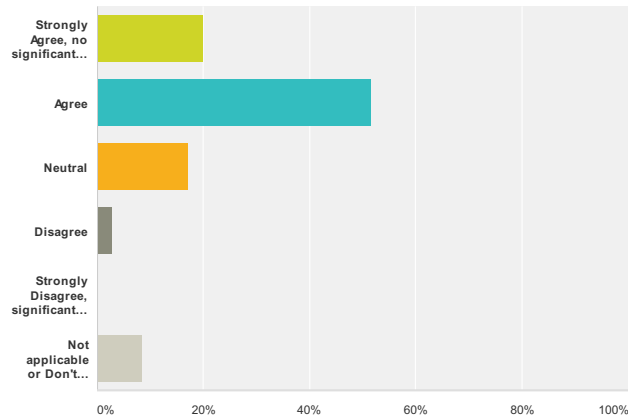
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	16.67% 6
Agree	50% 18
Neutral	22.22% 8
Disagree	5.56% 2
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.56% 2
<b>Total</b>	<b>36</b>

#	Additional comments:	Date
1	No significant. But there are always little things to improve on. With day to day use of systems, operators always come up with suggestions for improvement.	9/3/2013 3:24 PM
2	Although the laser supervisors, with which I have spoken, are highly competent, the support budget for safety equipment has not always been sufficient.	9/3/2013 7:42 AM
3	see comments for question 8	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q10 Standard Operating Procedure (SOP) document: this is prepared by laser safety supervisors and is used for initial training, as a reference for safe operating procedures, and for documenting laser hazards and controls and safety requirements. How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, the SOP document accomplishes these goals well; no significant improvements to the SOP are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



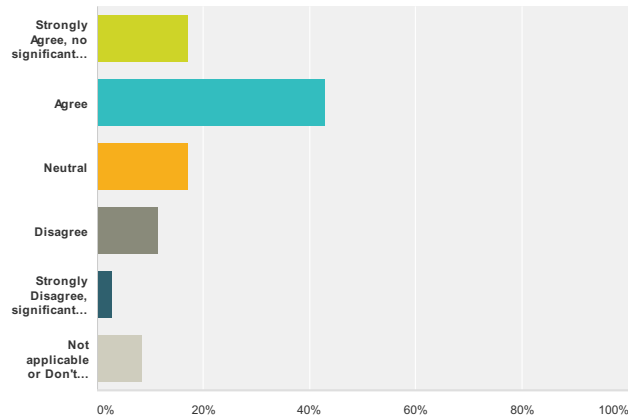
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	20% 7
Agree	51.43% 18
Neutral	17.14% 6
Disagree	2.86% 1
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	8.57% 3
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	Some may say there is too much	9/3/2013 11:39 AM
2	These can always be improved; probably the most common issue is actually doing following each precaution/caveat stated in the SOP.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q11 Standard Operating Procedure (SOP) document: this is prepared by laser safety supervisors and is used for initial training, as a reference for safe operating procedures, and for documenting laser hazards and controls and safety requirements. How well do you agree with the following statement? Within the laser labs in which you are familiar at your institution/facility, the SOP document accomplishes these goals well; no significant improvements to the SOP are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



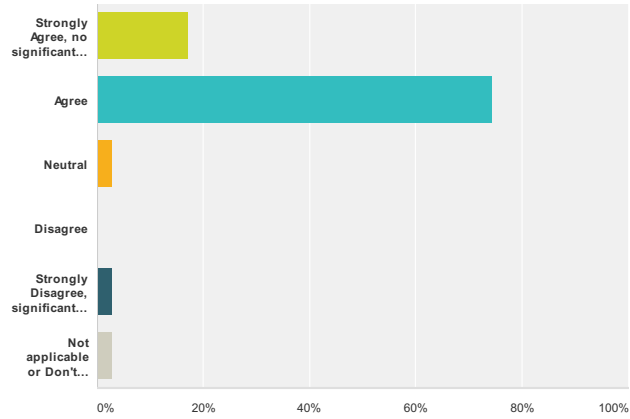
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	17.14% 6
Agree	42.86% 15
Neutral	17.14% 6
Disagree	11.43% 4
Strongly Disagree, significant improvements are needed	2.86% 1
Not applicable or Don't Know	8.57% 3
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	Some are outstanding while others are just boiler plate language and even others are too large and hard to digest.	9/3/2013 3:01 PM
2	There is always room for improving procedures.	9/3/2013 11:39 AM
3	Our laser program is relatively new and I have not evaluated individual SOPs	9/3/2013 7:42 AM
4	There are some lab supervisors who need much more oversight and encouragement in writing and implementing stronger SOPs than others, though they all agree to its value.	9/3/2013 5:51 AM
5	see comments for question 10	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q12 Practicing safe laser procedures: How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, laser operators work safely, adhering to safe practices. No significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



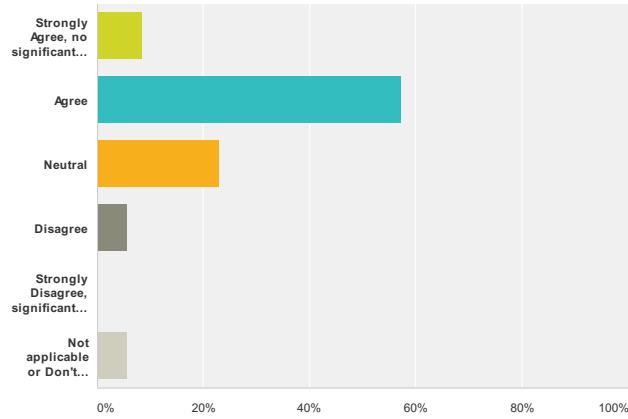
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	17.14% 6
Agree	74.29% 26
Neutral	2.86% 1
Disagree	0% 0
Strongly Disagree, significant improvements are needed	2.86% 1
Not applicable or Don't Know	2.86% 1
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	Researchers watch out for each other	9/3/2013 11:39 AM
2	This again is related to my comments to question 10.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q13 Practicing safe laser procedures: How well do you agree with the following statement? Within the laser labs you are familiar with at your institution/facility, laser operators work safely, adhering to safe practices. No significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



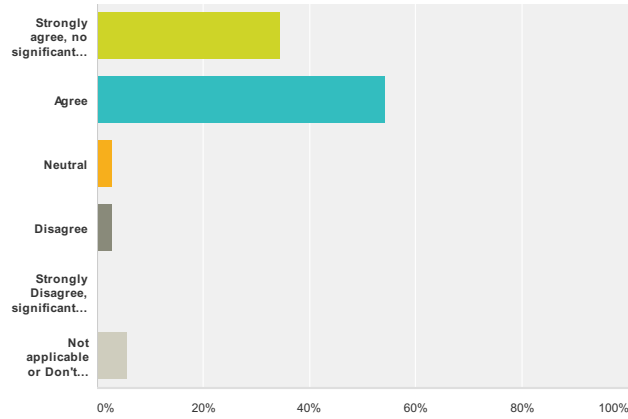
Answer Choices	Responses
Strongly Agree, no significant improvements are needed	8.57% 3
Agree	57.14% 20
Neutral	22.86% 8
Disagree	5.71% 2
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.71% 2
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	Largely agree but always concerns over small minority	9/3/2013 4:41 PM
2	Would be strongly agree if not for second-hand knowledge of a worker cutting corners	9/3/2013 3:01 PM
3	As in most research organizations, we have a few unique personalities that present there own challenges.	9/3/2013 11:39 AM
4	see answer for question 12	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q14 Laser eyewear requirements and available laser eyewear: How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, these are implemented well and are effective, and it is easy to comply with the laser eyewear requirements; no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



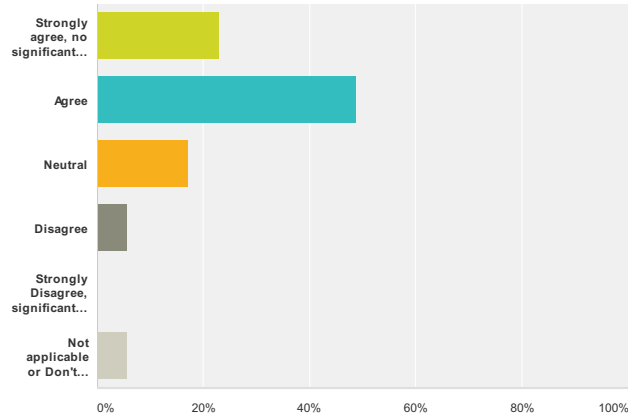
Answer Choices	Responses
Strongly agree, no significant improvements are needed	34.29% 12
Agree	54.29% 19
Neutral	2.86% 1
Disagree	2.86% 1
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.71% 2
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	so dark cant see the floor well.	9/3/2013 3:24 PM
2	This may be an area which could use more inquiry . We rarely get comments that eyewear is an impediment to performing work but we don't always ask the question ourselves of the users	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q15 Laser eyewear requirements and available laser eyewear: How well do you agree with the following statement? Within the laser labs which you are familiar with at your institution/facility, these are implemented well and are effective, and it is easy to comply with the laser eyewear requirements; no significant improvements are needed to reduce risk of a laser injury incident.**

Answered: 35 Skipped: 9



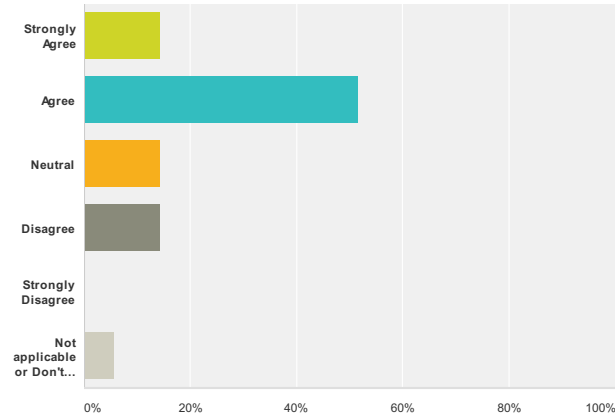
Answer Choices	Responses
Strongly agree, no significant improvements are needed	22.86% 8
Agree	48.57% 17
Neutral	17.14% 6
Disagree	5.71% 2
Strongly Disagree, significant improvements are needed	0% 0
Not applicable or Don't Know	5.71% 2
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	Challenge is getting eyewear replaced when it gets scratched or otherwise impairs vision.	9/3/2013 11:39 AM
2	see comments for question 14.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q16 Laser eyewear practices (Part 1): How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? Within the laser labs in which you work, laser eyewear requirements are always adhered to. I am not aware of laser operators intentionally or mistakenly violating a laser eyewear requirement.**

Answered: 35 Skipped: 9



Answer Choices	Responses
Strongly Agree	14.29% 5
Agree	51.43% 18
Neutral	14.29% 5
Disagree	14.29% 5
Strongly Disagree	0% 0
Not applicable or Don't Know	5.71% 2
<b>Total</b>	<b>35</b>

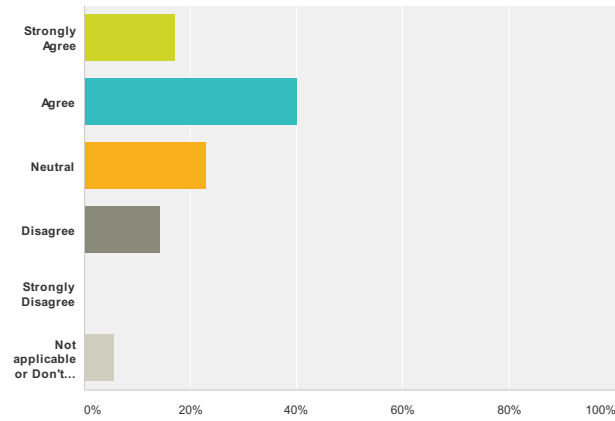
#	Additional comments:	Date
1	Entry into LCAs w/o eyewear has been picked up - not deliberate violation	9/3/2013 4:41 PM
2	I do know of some laser operators who temporarily remove their eyewear in order to see test equipment screens more clearly. This is especially so if the eyewear covers a range of wavelengths.	9/3/2013 11:11 AM
3	This has relevance to previous comments for question 12	9/2/2013 8:36 AM



# Laser Safety Performance Metrics

**Q17 Laser eyewear practices (Part 1): How well do you agree with the following statement? Within the laser labs which you are familiar with at your institution/facility, laser eyewear requirements are always adhered to. I am not aware of laser operators intentionally or mistakenly violating a laser eyewear requirement.**

Answered: 35 Skipped: 9



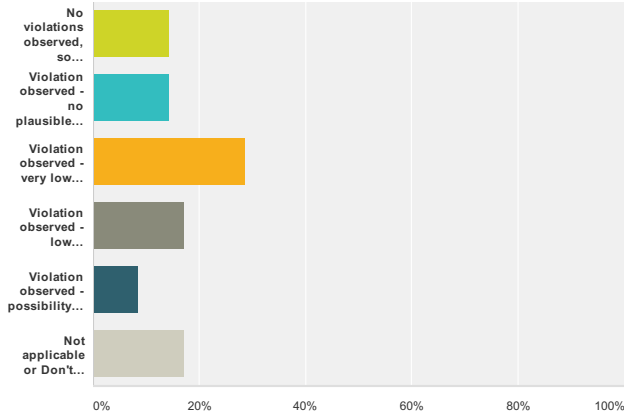
Answer Choices	Responses	
Strongly Agree	17.14%	6
Agree	40%	14
Neutral	22.86%	8
Disagree	14.29%	5
Strongly Disagree	0%	0
Not applicable or Don't Know	5.71%	2
<b>Total</b>		<b>35</b>

#	Additional comments:	Date
1	PPE is a serious business at this lab.	9/3/2013 3:24 PM
2	Second hand knowledge of individual who may have not been wearing laser eyewear during an alignment prevents strongly agree. This was taken care of immediately by discussing the importance of laser eyewear. Have not heard of this occurring since it happened approximately 3 years ago.	9/3/2013 3:01 PM
3	It is difficult to agree with such an absolute statement "always adhered to" because we know that "always" can't be met.	9/3/2013 11:39 AM
4	see 16	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q18 Laser Eyewear Practices (Part 2):** How would you expect laser operators at your institution/facility to answer on agreeing with the following statement? If a laser eyewear requirement has been observed to be violated, whether intentional or by mistake, estimate the potential for a hazardous exposure of the most severe violation observed.

Answered: 35 Skipped: 9



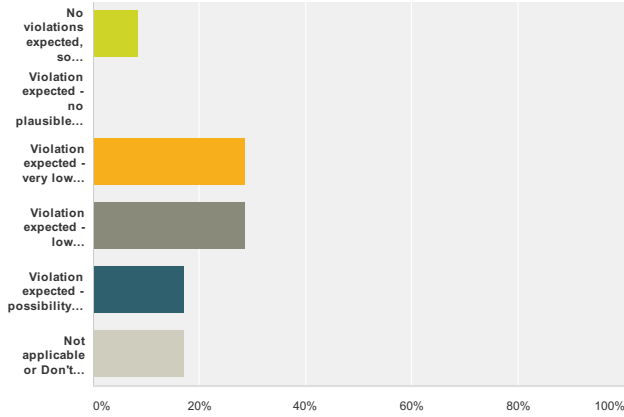
Answer Choices	Responses
No violations observed, so no related possibility for hazardous exposure	14.29% 5
Violation observed - no plausible possibility for hazardous exposure	14.29% 5
Violation observed - very low possibility (<<1%) for hazardous exposure	28.57% 10
Violation observed - low possibility (< 2%) for hazardous exposure	17.14% 6
Violation observed - possibility existed (>2%) for hazardous exposure	8.57% 3
Not applicable or Don't Know	17.14% 6
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	There was one time when two different types of eyewear were available for two different systems in the same room. Now the unused system is LOTOed and its PPE is removed from the PPE rack.	9/3/2013 3:24 PM
2	I would not know how to calculate the percentage possibility of an event occurring under these circumstances.	9/3/2013 11:11 AM
3	Excluding accidents where we believe/know the MPE was exceeded, this is difficult to answer. The LSOs have not seen violations, but how common is irregular use of eyewear is difficult to actually determine.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q19 Laser Eyewear Practices (Part 2):** How well do you agree with the following statement? If a laser eyewear requirement were to be violated in a laser lab you are familiar with at your institution/facility, whether intentional or by mistake, estimate the potential for a hazardous exposure of the most severe violation expected.

Answered: 35 Skipped: 9



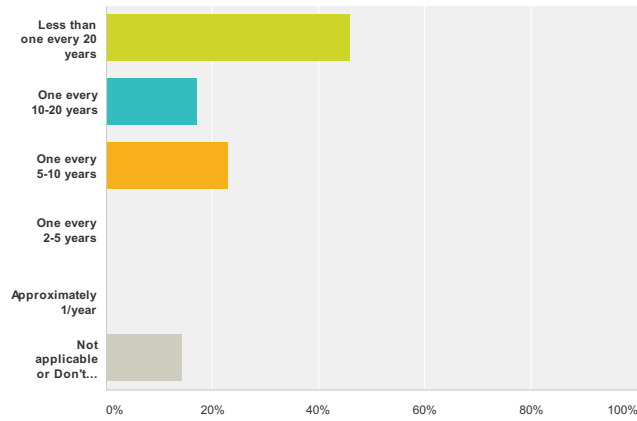
Answer Choices	Responses
No violations expected, so no related possibility for hazardous exposure	8.57% 3
Violation expected - no plausible possibility for hazardous exposure	0% 0
Violation expected - very low possibility (<1%) for hazardous exposure	28.57% 10
Violation expected - low possibility (< 2%) for hazardous exposure	28.57% 10
Violation expected - possibility exists (>2%) for hazardous exposure	17.14% 6
Not applicable or Don't Know	17.14% 6
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	In my institution, I am only allowed to visit labs when invited. Obviously they adhere to this when I assist in inspections or reviews (they are prepared)	9/4/2013 11:42 AM
2	We have numerous other safeguards in place to reduce the likelihood of a hazardous exposure.	9/3/2013 11:11 AM
3	see answer for 18	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q20 Frequency of laser eye injuries at your institution/facility: How would you expect laser operators at your institution/facility to answer the following question? For every 100 laser operators at your institute/facility – what is your best estimate for how often a single eye injury may occur from a laser accident to any of these laser operators?**

Answered: 35 Skipped: 9



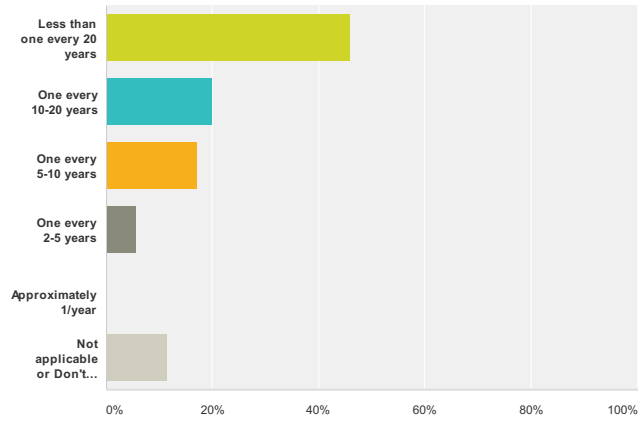
Answer Choices	Responses	
Less than one every 20 years	45.71%	16
One every 10-20 years	17.14%	6
One every 5-10 years	22.86%	8
One every 2-5 years	0%	0
Approximately 1/year	0%	0
Not applicable or Don't know	14.29%	5
<b>Total</b>		<b>35</b>

#	Additional comments:	Date
1	We have not had a laser related eye injury whilst we have been in operation.	9/3/2013 11:11 AM

# Laser Safety Performance Metrics

**Q21 Frequency of laser eye injuries at your institution/facility: How would do you answer the following question? For every 100 laser operators at your institute/facility – what is your best estimate for how often a single eye injury may occur from a laser accident to any of these laser operators?**

Answered: 35 Skipped: 9



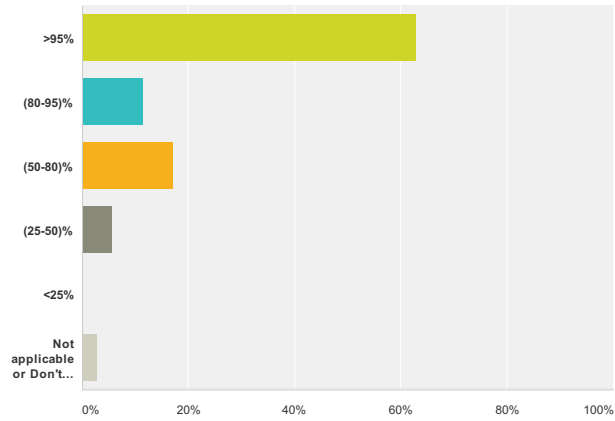
Answer Choices	Responses	
Less than one every 20 years	45.71%	16
One every 10-20 years	20%	7
One every 5-10 years	17.14%	6
One every 2-5 years	5.71%	2
Approximately 1/year	0%	0
Not applicable or Don't know	11.43%	4
<b>Total</b>		<b>35</b>

#	Additional comments:	Date
	There are no responses.	

# Laser Safety Performance Metrics

**Q22 Reporting laser eye injuries: How would you expect laser operators at your institution/facility to answer the following question? What is your best estimate of the probability that a laser eye injury at your institute/facility would be reported if it occurred?**

Answered: 35 Skipped: 9



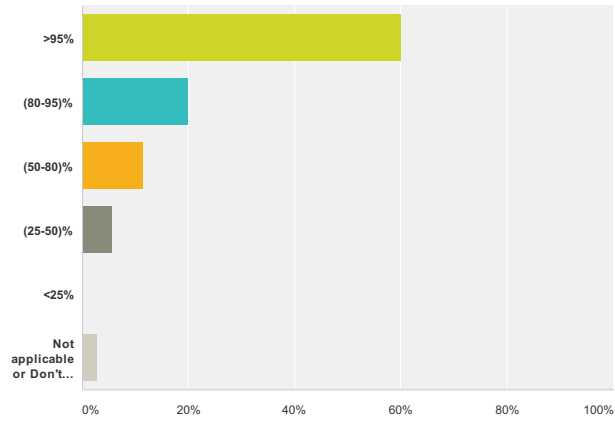
Answer Choices	Responses
>95%	62.86% 22
(80-95)%	11.43% 4
(50-80)%	17.14% 6
(25-50)%	5.71% 2
<25%	0% 0
Not applicable or Don't know	2.86% 1
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	This would be my estimate for how users would answer since one would think they would want to seek treatment following an exposure, but I may be wrong here based on apparent findings at other labs.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q23 Reporting laser eye injuries: How would do you answer the following question? What is your best estimate of the probability that a laser eye injury at your institute/facility would be reported if it occurred?**

Answered: 35 Skipped: 9



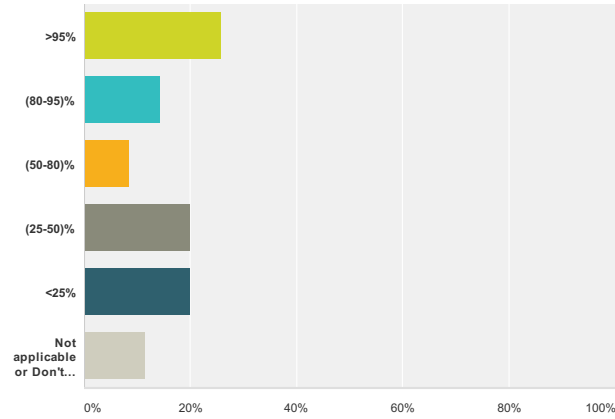
Answer Choices	Responses	
>95%	60%	21
(80-95)%	20%	7
(50-80)%	11.43%	4
(25-50)%	5.71%	2
<25%	0%	0
Not applicable or Don't know	2.86%	1
<b>Total</b>		<b>35</b>

#	Additional comments:	Date
1	My opinion is that if there is a perceived exposure, people will report it, but of course this could be wrong.	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q24 Reporting Near Misses: A Near Miss occurs when safety is compromised such that only one or no barriers are in place to prevent a laser eye injury. How would you expect laser operators at your institution/facility to answer the following question? What is your best estimate of the probability that a Near Miss laser incident at your institute/facility would be reported if it occurred?**

Answered: 35 Skipped: 9



Answer Choices	Responses	
>95%	25.71%	9
(80-95)%	14.29%	5
(50-80)%	8.57%	3
(25-50)%	20%	7
<25%	20%	7
Not applicable or Don't know	11.43%	4
<b>Total</b>		<b>35</b>

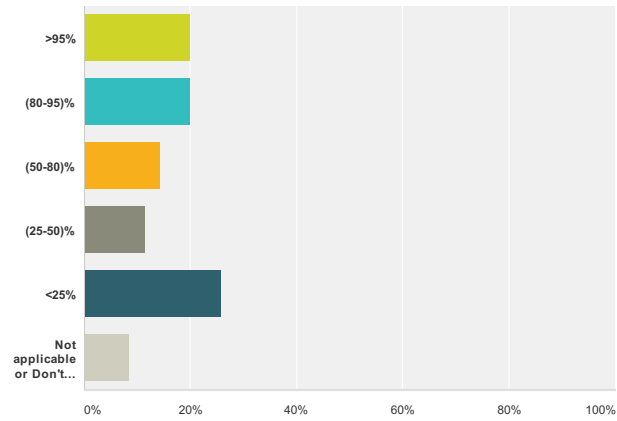
#	Additional comments:	Date
1	We have tried to ingrain a safety culture at our institution and allow anonymous reporting of any safety related incidents, no matter how small.	9/3/2013 11:11 AM
2	we have had reports of "missing barriers" but it is hard to determine how frequently this happens and how often it would be reported.	9/2/2013 8:36 AM



# Laser Safety Performance Metrics

**Q25 Reporting Near Misses: A Near Miss occurs when safety is compromised such that only one or no barriers are in place to prevent a laser eye injury. How would do you answer the following question? What is your best estimate of the probability that a Near Miss laser incident in a laser lab at your institute/facility would be reported if it occurred?**

Answered: 35 Skipped: 9



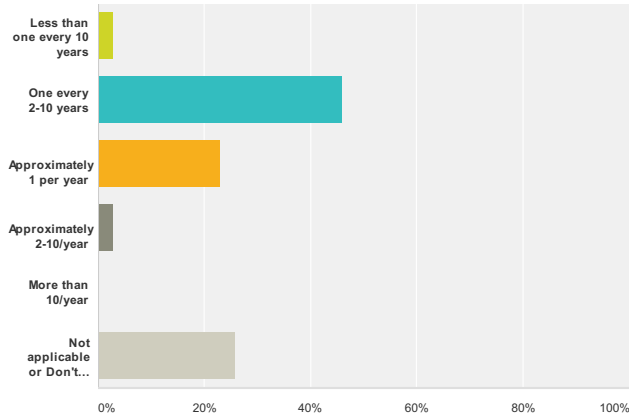
Answer Choices	Responses
>95%	20% 7
(80-95)%	20% 7
(50-80)%	14.29% 5
(25-50)%	11.43% 4
<25%	25.71% 9
Not applicable or Don't know	8.57% 3
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	see answer for 24	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q26 Frequency of Near Misses:** How would you expect laser operators at your institution/facility to answer the following question? For every 100 QLOs at your institute/facility – what is your best estimate for how often a near miss event may occur to any of these laser operators (see previous question for near miss definition)?

Answered: 35 Skipped: 9



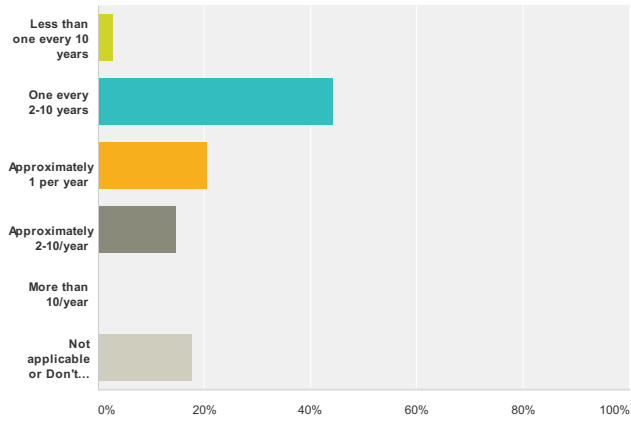
Answer Choices	Responses
Less than one every 10 years	2.86% 1
One every 2-10 years	45.71% 16
Approximately 1 per year	22.86% 8
Approximately 2-10/year	2.86% 1
More than 10/year	0% 0
Not applicable or Don't know	25.71% 9
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	This is hard to answer; it may be more frequent than is apparent to us (LSOs)	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q27 Frequency of Near Misses: How would do you answer the following question? For every 100 QLOs at your institute/facility – what is your best estimate for how often a near miss event may occur to any of these laser operators (see previous question for near miss definition)?**

Answered: 34 Skipped: 10



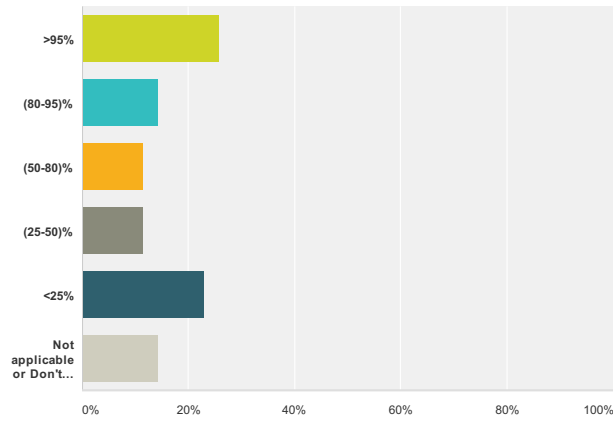
Answer Choices	Responses	
Less than one every 10 years	2.94%	1
One every 2-10 years	44.12%	15
Approximately 1 per year	20.59%	7
Approximately 2-10/year	14.71%	5
More than 10/year	0%	0
Not applicable or Don't know	17.65%	6
<b>Total</b>		<b>34</b>

#	Additional comments:	Date
1	see answer to 26	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q28 Reporting "other" Lessons Learned Events: A Lessons Learned event would include a laser injury incident or a Near Miss, but would also include "other" events where a safety control or barrier was missing and reporting the event would provide valuable information for laser personnel. How would you expect laser operators at your institution/facility to answer the following question? What is your best estimate of the probability that "other" Lessons Learned laser events at your institute/facility would be reported if they occur?**

Answered: 35 Skipped: 9



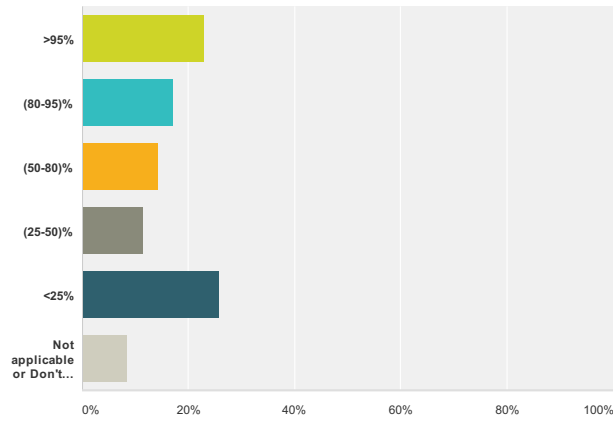
Answer Choices	Responses
>95%	25.71% 9
(80-95)%	14.29% 5
(50-80)%	11.43% 4
(25-50)%	11.43% 4
<25%	22.86% 8
Not applicable or Don't know	14.29% 5
<b>Total</b>	<b>35</b>

#	Additional comments:	Date
1	see answer to 26	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q29 Reporting "other" Lessons Learned Events: A Lessons Learned event would include a laser injury incident or a Near Miss, but would also include "other" events where a safety control or barrier was missing and reporting the event would provide valuable information for laser personnel. How would do you answer the following question? What is your best estimate of the probability that "other" Lessons Learned laser events at your institute/facility would be reported if they occur?**

Answered: 35 Skipped: 9



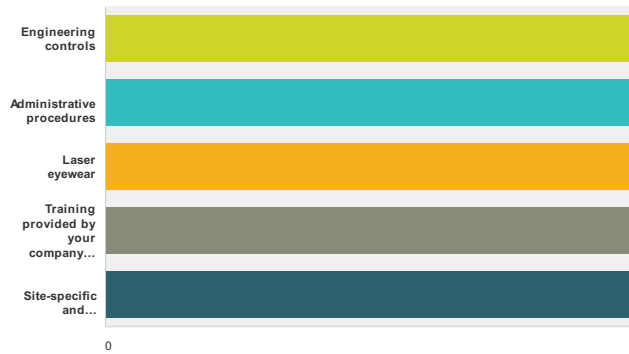
Answer Choices	Responses	
>95%	22.86%	8
(80-95)%	17.14%	6
(50-80)%	14.29%	5
(25-50)%	11.43%	4
<25%	25.71%	9
Not applicable or Don't know	8.57%	3
<b>Total</b>		<b>35</b>

#	Additional comments:	Date
1	see answer to 26	9/2/2013 8:36 AM

# Laser Safety Performance Metrics

**Q30 Effectiveness of controls.** How would you expect laser operators at your institution/facility to answer this rating question? (skip question if not applicable) Rank in order from most effective (1) to least effective (5) these safety factors that are used to reduce the risk of a laser eye injury. (Note: Engineering controls include interlocks, safety shutters, barriers and enclosures. Administrative procedures include use of temporary beam blocks checking for and blocking stray beams, using minimum intensity, etc.)

Answered: 34 Skipped: 10



	1 - Most Effective	2	3	4	5 - Least Effective	Total	Average Rating
Engineering controls	66.67% 22	24.24% 8	0% 0	6.06% 2	3.03% 1	33	1.00
Administrative procedures	3.23% 1	19.35% 6	22.58% 7	19.35% 6	35.48% 11	31	1.00
Laser eyewear	6.25% 2	43.75% 14	31.25% 10	6.25% 2	12.50% 4	32	1.00
Training provided by your company or institution	6.06% 2	0% 0	21.21% 7	36.36% 12	36.36% 12	33	1.00
Site-specific and supervisor-provided training	18.75% 6	15.63% 5	21.88% 7	34.38% 11	9.38% 3	32	1.00

#	Additional comments:	Date
	There are no responses.	

# Laser Safety Performance Metrics

**Q31 Effectiveness of controls.** For laser operations at your institution/facility, how would you answer this rating question? (skip question if not applicable) Rank in order from most effective (1) to least effective (5) these safety factors that are used to reduce the risk of a laser eye injury. (Note: Engineering controls include interlocks, safety shutters, barriers and enclosures. Administrative procedures include use of temporary beam blocks checking for and blocking stray beams, using minimum intensity, etc.)

Answered: 33 Skipped: 11



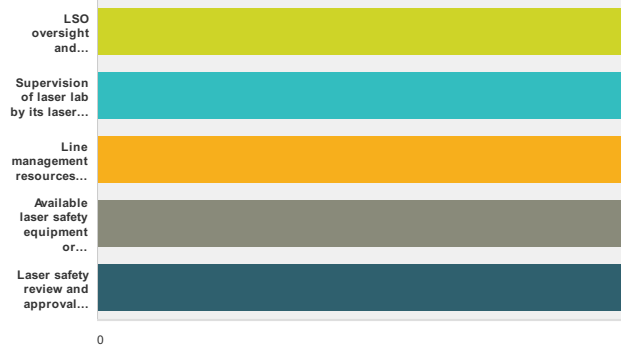
	1 - Most Effective	2	3	4	5 - Least Effective	Total	Average Rating
Engineering controls	81.25% 26	12.50% 4	3.13% 1	0% 0	3.13% 1	32	1.00
Administrative procedures	0% 0	32.26% 10	25.81% 8	16.13% 5	25.81% 8	31	1.00
Laser eyewear	6.25% 2	21.88% 7	34.38% 11	21.88% 7	15.63% 5	32	1.00
Training provided by your company or institution	3.13% 1	3.13% 1	18.75% 6	34.38% 11	40.63% 13	32	1.00
Site-specific and supervisor-provided training	12.50% 4	31.25% 10	15.63% 5	28.13% 9	12.50% 4	32	1.00

#	Additional comments:	Date
1	Usually PPE is the last resort , but in this case I think PPE is of greater value than site specific training, given that the operators are well aware of the lasers and the hazards associated with them.	9/5/2013 2:01 PM

# Laser Safety Performance Metrics

**Q32 Effectiveness of other safety factors. How would you expect laser operators at your institution/facility to answer this rating question? (skip question if not applicable) Rank in order from most effective (1) to least effective (5) these safety factors that are used to reduce the risk of a laser eye injury.**

Answered: 32 Skipped: 12



	1 - Most Effective	2	3	4	5 - Least Effective	Total	Average Rating
LSO oversight and assistance for laser safety	18.75% 6	9.38% 3	43.75% 14	15.63% 5	12.50% 4	32	1.00
Supervision of laser lab by its laser safety supervisor	23.33% 7	20% 6	13.33% 4	30% 9	13.33% 4	30	1.00
Line management resources and assistance for laser safety (either budget or personnel)	0% 0	16.67% 5	20% 6	20% 6	43.33% 13	30	1.00
Available laser safety equipment or laser facility configuration	53.33% 16	33.33% 10	3.33% 1	6.67% 2	3.33% 1	30	1.00
Laser safety review and approval process	6.90% 2	24.14% 7	20.69% 6	24.14% 7	24.14% 7	29	1.00

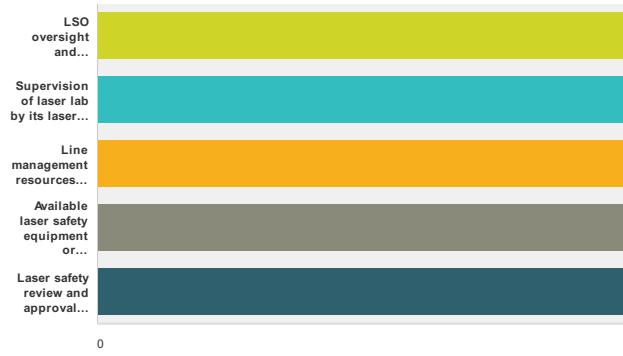
#	Additional comments:	Date
	There are no responses.	



# Laser Safety Performance Metrics

**Q33 Effectiveness of other safety factors. For laser operations at your institution/facility, how would you answer this rating question? (skip question if not applicable) Rank in order from most effective (1) to least effective (5) these safety factors that are used to reduce the risk of a laser eye injury.**

Answered: 32 Skipped: 12



	1 - Most Effective	2	3	4	5 - Least Effective	Total	Average Rating
LSO oversight and assistance for laser safety	18.75% 6	18.75% 6	28.13% 9	18.75% 6	15.63% 5	32	1.00
Supervision of laser lab by its laser safety supervisor	30% 9	30% 9	16.67% 5	13.33% 4	10% 3	30	1.00
Line management resources and assistance for laser safety (either budget or personnel)	3.45% 1	6.90% 2	13.79% 4	24.14% 7	51.72% 15	29	1.00
Available laser safety equipment or laser facility configuration	37.50% 12	28.13% 9	15.63% 5	12.50% 4	6.25% 2	32	1.00
Laser safety review and approval process	13.33% 4	20% 6	26.67% 8	26.67% 8	13.33% 4	30	1.00

#	Additional comments:	Date
	There are no responses.	

# Laser Safety Performance Metrics

## Q34 Provide any additional comments about risk for a laser injury incident

Answered: 7 Skipped: 37

#	Responses	Date
1	NA	9/6/2013 7:03 PM
2	LOs working lasers must be experienced, well trained, take their work seriously, and apply all necessary engineering, administrative, and/or PPE controls.	9/4/2013 11:18 AM
3	Biggest concern, people most at risk during set-up phases with open beam work. For normal operations access to beams above MPE prevented by engineered means.	9/3/2013 4:46 PM
4	need ANSI Z136 guidance for "laser alignment" PPE.	9/3/2013 3:24 PM
5	The greatest risk of a laser injury is likely to come from workers thinking that our laser safety standards are over burdensome. In addition there are some amongst management who wish to rush SOPs for approval without allowing time for consideration of procedures proposed.	9/3/2013 11:13 AM
6	I'm not an LSO, so this survey was not much use for me. I do believe that one of the higher risk activities is the exposure of electrical parts. Too many laser operators performing electrical work with little to no electrical safety training.	9/3/2013 7:03 AM
7	Risk I think is ultimately determined by the owner/operators commitment to safety and their translation of this info down to their staff as well as their working relationship with the LSO.	9/2/2013 8:42 AM

# Laser Safety Performance Metrics

## Q35 Provide any other additional comments

Answered: 3 Skipped: 41

#	Responses	Date
1	NA	9/6/2013 7:03 PM
2	Excellent survey. I would be interested to know how my workers would really answer the questions	9/3/2013 3:02 PM
3	The level of adherence to laser safety practices in a lab is directly related to the importance placed on it by the PI. The PI's attitudes are affected by the attitudes of the Chair, Dean and other administrators regarding safety. The importance of safety and a positive culture of safety must come from the top. The LSO is a resource and ensures the quality of the program, but he or she cannot make people safe. That has to happen at the lab level.	9/1/2013 9:28 AM