IFCC SURVEY 2017: PROTEIN ELECTROPHORESIS AND SERUM FREE LIGHT CHAINS

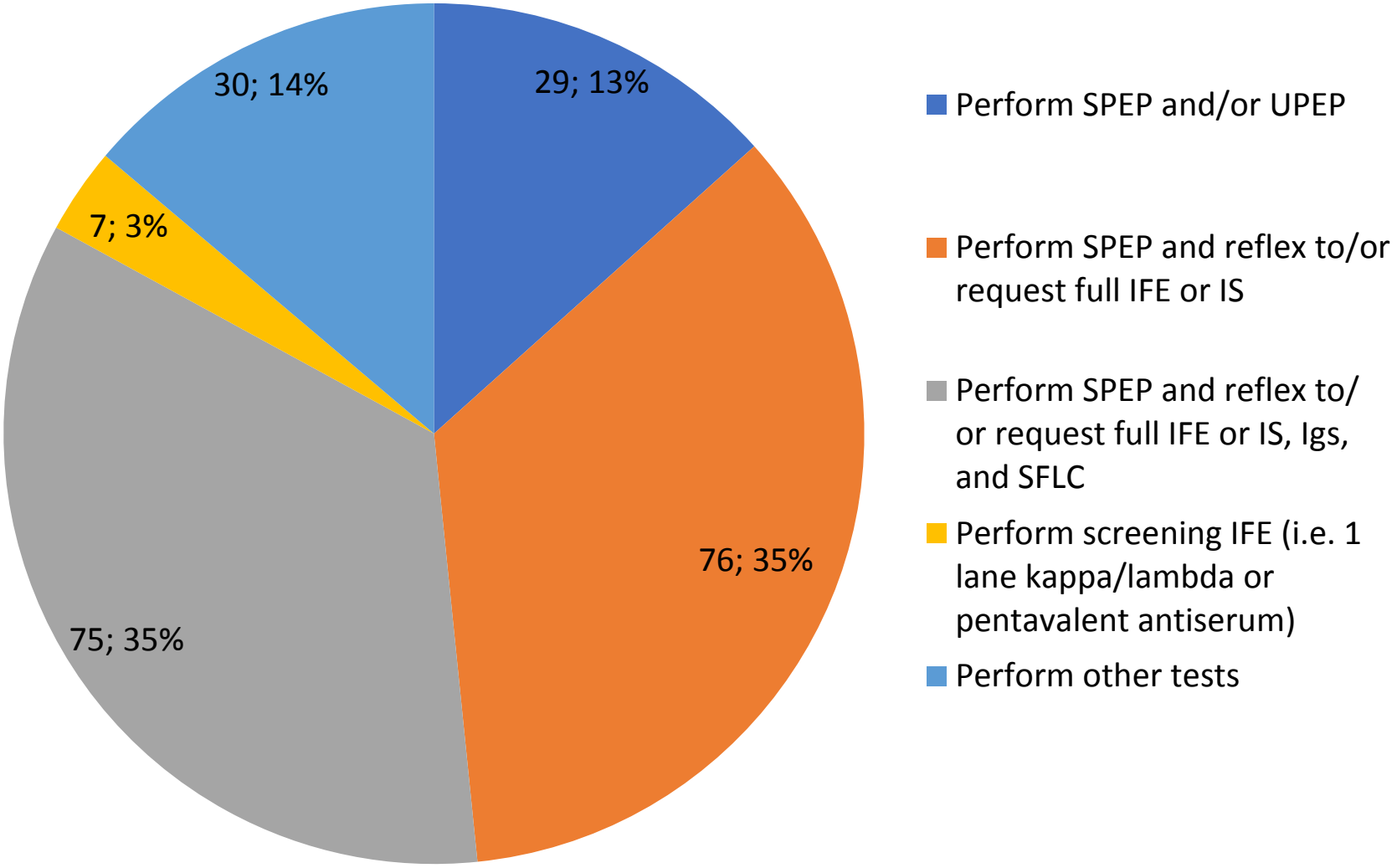
10 countries

217 laboratories

Data from 10 Countries (217 laboratories)

- Italy N=83
- The Netherlands N=22
- Sweden N=15
- The United Kingdom N=42
- United States of America N=6
- Australia & New Zealand N=27
- Croatia N=6
- Japan N=5
- Switzerland N=6
- Turkey N=5

Q1: If you are asked to screen for a monoclonal gammopathy, which of the following describe best your laboratory procedure?

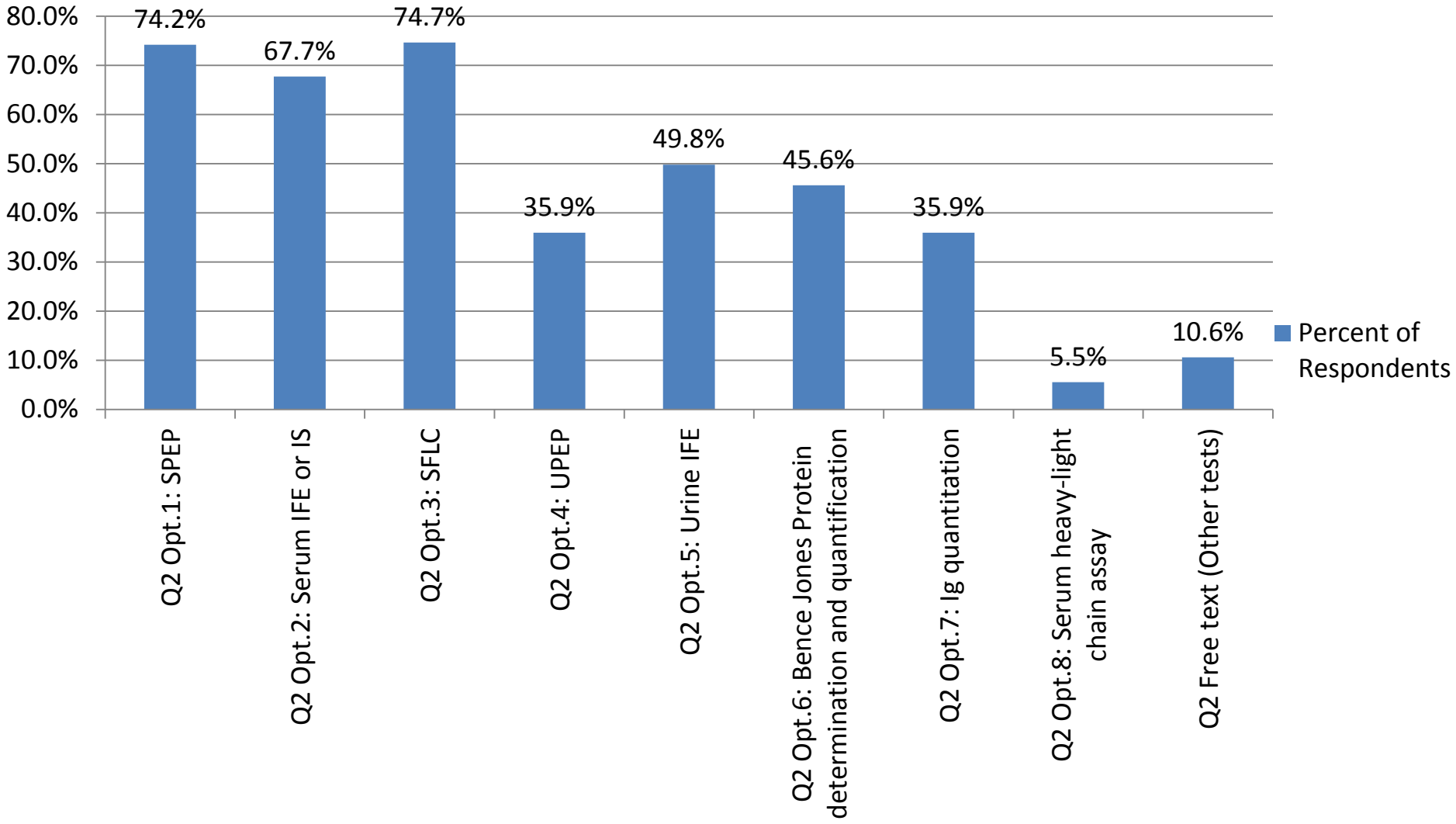


Q1: **If you are asked to screen for a monoclonal gammopathy, which of the following describe best your laboratory procedure?**

1	Perform SPEP and/or UPEP
2	Perform SPEP and reflex to/or request full IFE or IS
3	Perform SPEP and reflex to/ or request full IFE or IS, Igs, and SFLC
4	Perform screening IFE (i.e. 1 lane kappa/lambda or pentavalent antiserum)
5	Perform other tests

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/ NZ	CROATIA	JAPAN	SWITZER LAND	TURKEY	Grand Total
1	8		5	8	1	**2**		4	1		**29**
2	36	6	6	9	1	**13**	2	1		2	**76**
3	33	6	3	10	4	**9**	3		4	3	**75**
4	2	4				**1**					**7**
Other	4	6	1	15		**2**	1		1		**30**

Q2: What tests are used in your institution to diagnose AL amyloidosis cases? Select all that apply.



Q2: **What tests are used in your institution to diagnose AL amyloidosis cases? Select all that apply.**

Count of Q2 Opt.1: SPEP

Count of Q2 Opt.2: Serum IFE or IS

Count of Q2 Opt.3: SFLC

Count of Q2 Opt.4: UPEP

Count of Q2 Opt.5: Urine IFE

Count of Q2 Opt.6: Bence Jones Protein determination and quantification

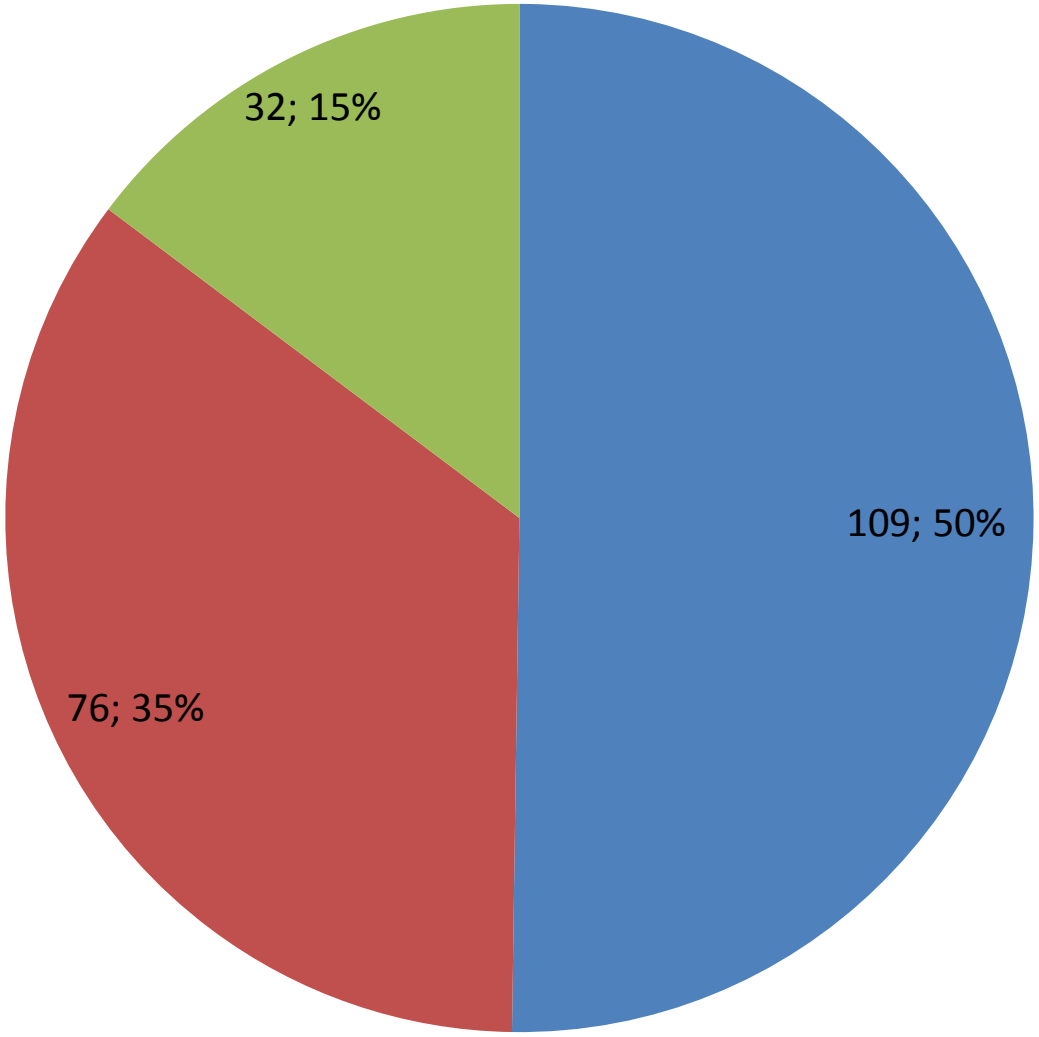
Count of Q2 Opt.7: Ig quantitation

Count of Q2 Opt.8: Serum heavy-light chain assay

Count of Q2 Free text (Other tests)

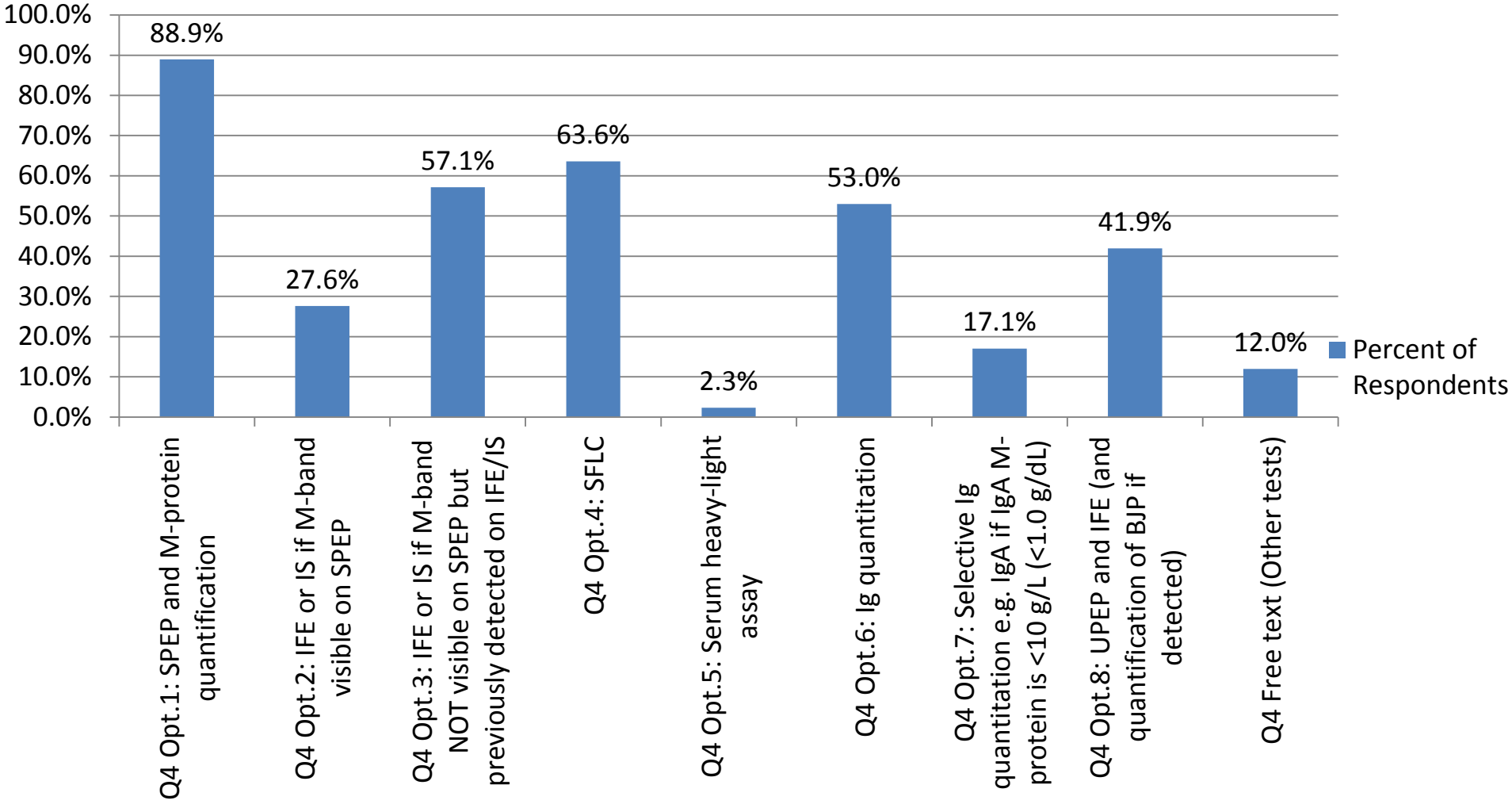
Options	ITALY	NETHERLANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/NZ	CROATIA	JAPAN	SWITZERLAND	TURKEY	Grand Total
1	52	15	13	36	6	**25**	3	4	3	4	**161**
2	60	17	9	19	6	**22**	2	4	3	5	**147**
3	60	16	9	32	4	**24**	4	5	6	2	**162**
4	17	9	8	20	5	**13**		3	1	2	**78**
5	39	11	6	18	6	**16**	2	4	2	4	**108**
6	43	11	8	14	2	**11**	1	2	4	3	**99**
7	19	8	9	23	2	**6**	2	3	2	4	**78**
8	6	2	1					1	2		**12**
Other	5	5	3	4		**3**	1	1	1		**23**

Q3: How do you offer this laboratory diagnostic in your Institution?



- All tests are orderable as standalone assays. Abnormalities are identified and laboratory will automatically add on additional tests if appropriate (reflex).
- All tests are orderable as standalone assays. Abnormalities are identified and laboratory will suggest additional tests if appropriate.
- Tests offered as a panel (i.e. screening for monoclonal gammopathy) and laboratory decides which tests to perform.

Q4: What tests are used in your institution to follow-up a treated myeloma case with the M-protein migrating in the gamma fraction? Select all that apply.



Q4: **What tests are used in your institution to follow-up a treated myeloma case with the M-protein migrating in the gamma fraction? Select all that apply.**

Count of Q4 Opt.1: SPEP and M-protein quantification

Count of Q4 Opt.2: IFE or IS if M-band visible on SPEP

Count of Q4 Opt.3: IFE or IS if M-band NOT visible on SPEP but previously detected on IFE/IS

Count of Q4 Opt.4: SFLC

Count of Q4 Opt.5: Serum heavy-light assay

Count of Q4 Opt.6: Ig quantitation

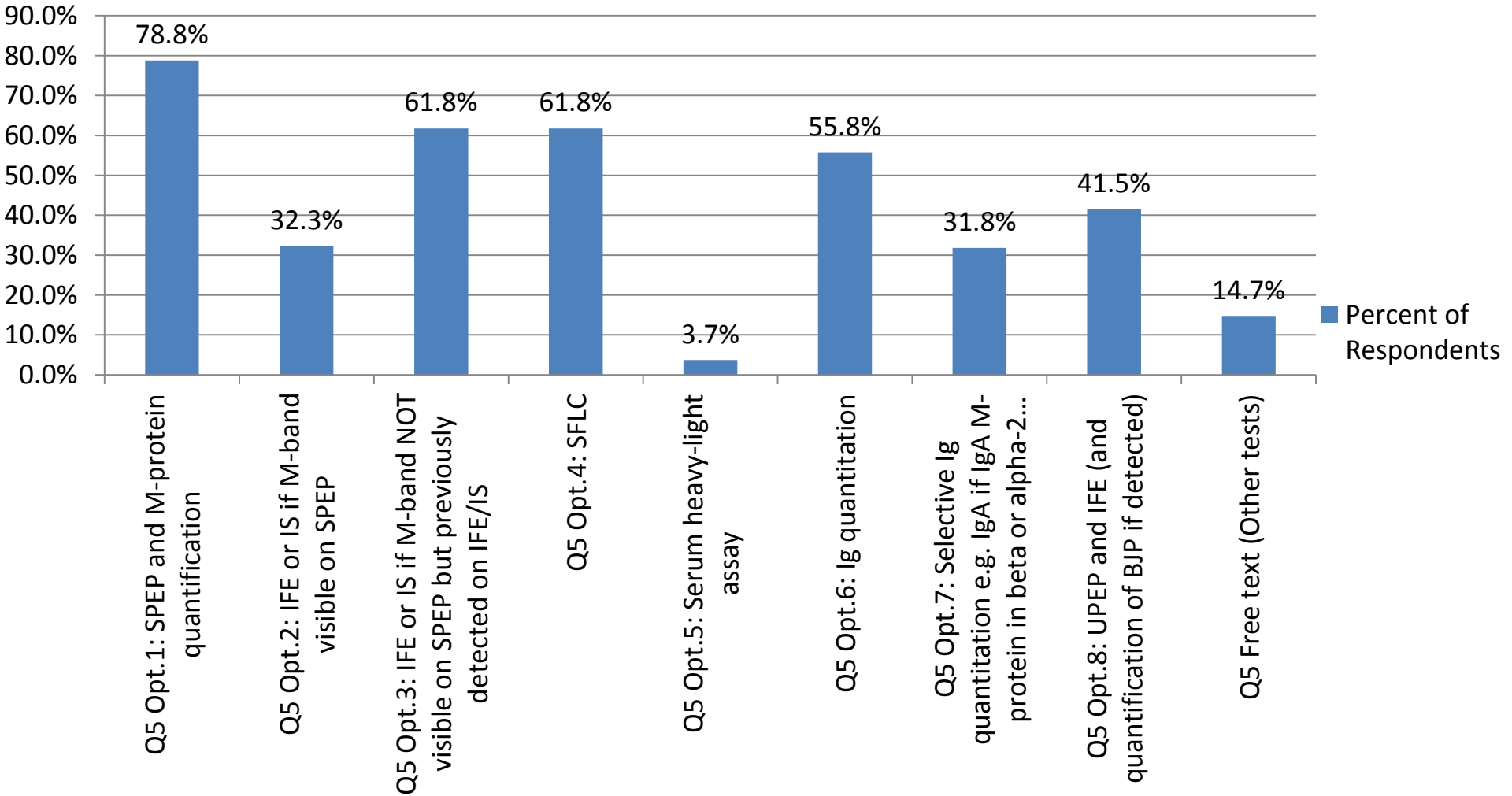
Count of Q4 Opt.7: Selective Ig quantitation e.g. IgA if IgA M-protein is <10 g/L (<1.0 g/dL)

Count of Q4 Opt.8: UPEP and IFE (and quantification of BJP if detected)

Count of Q4 Free text (Other tests)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/ NZ	CROATIA	JAPAN	SWITZER LAND	TURKEY	Grand Total
1	71	21	14	40	5	**24**	4	4	6	4	**193**
2	33	4	2	2	2	**5**	2	3	3	4	**60**
3	48	11	7	22	4	**19**	3	3	4	3	**124**
4	56	11	7	29	4	**17**	4	4	5	1	**138**
5	1							1	3		**5**
6	34	13	12	25	3	**14**	5	4	2	3	**115**
7	14	3	4	7	1	**3**		1	2	2	**37**
8	40	6	9	12	3	**9**	2	5	2	3	**91**
Other	8	3	2	5		**4**	2		2		**26**

Q5: What tests are used in your institution to follow-up a treated myeloma case with the M-protein migrating in the beta or alpha-2 fraction? Select all that apply.



Q5: **What tests are used in your institution to follow-up a treated myeloma case with the M-protein migrating in the beta or alpha-2 fraction? Select all that apply.**

Count of Q5 Opt.1: SPEP and M-protein quantification

Count of Q5 Opt.2: IFE or IS if M-band visible on SPEP

Count of Q5 Opt.3: IFE or IS if M-band NOT visible on SPEP but previously detected on IFE/IS

Count of Q5 Opt.4: SFLC

Count of Q5 Opt.5: Serum heavy-light assay

Count of Q5 Opt.6: Ig quantitation

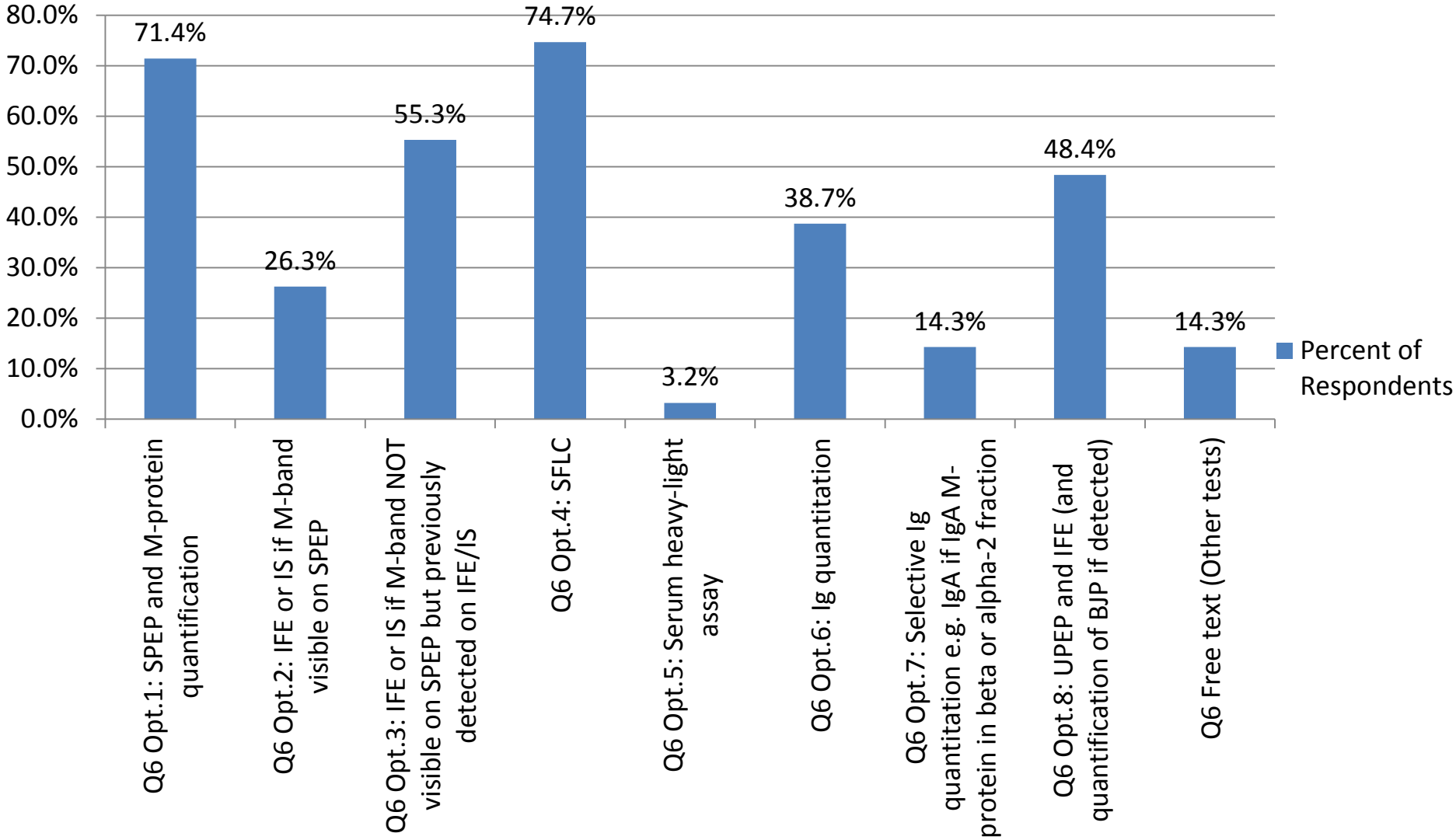
Count of Q5 Opt.7: Selective Ig quantitation e.g. IgA if IgA M-protein in beta or alpha-2 fraction

Count of Q5 Opt.8: UPEP and IFE (and quantification of BJP if detected)

Count of Q5 Free text (Other tests)

Options	ITALY	NETHERLANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/NZ	CROATIA	JAPAN	SWITZERLAND	TURKEY	Grand Total
1	56	17	13	40	3	**24**	4	5	6	3	**171**
2	36	5	3	3	2	**8**	2	3	4	4	**70**
3	52	13	8	24	4	**19**	3	3	4	4	**134**
4	52	12	6	29	4	**16**	4	4	4	3	**134**
5	2	1						1	4		**8**
6	35	14	12	26	4	**16**	5	3	2	4	**121**
7	28	10	5	10	3	**7**	1	1	3	1	**69**
8	42	5	7	13	2	**9**	2	5	3	2	**90**
Other	9	4	3	6		**6**	2		2		**32**

Q6: What tests are used in your institution to follow-up a treated AL amyloidosis case? Select all that apply



Q6: **What tests are used in your institution to follow-up a treated AL amyloidosis case? Select all that apply**

Count of Q6 Opt.1: SPEP and M-protein quantification

Count of Q6 Opt.2: IFE or IS if M-band visible on SPEP

Count of Q6 Opt.3: IFE or IS if M-band NOT visible on SPEP but previously detected on IFE/IS

Count of Q6 Opt.4: SFLC

Count of Q6 Opt.5: Serum heavy-light assay

Count of Q6 Opt.6: Ig quantitation

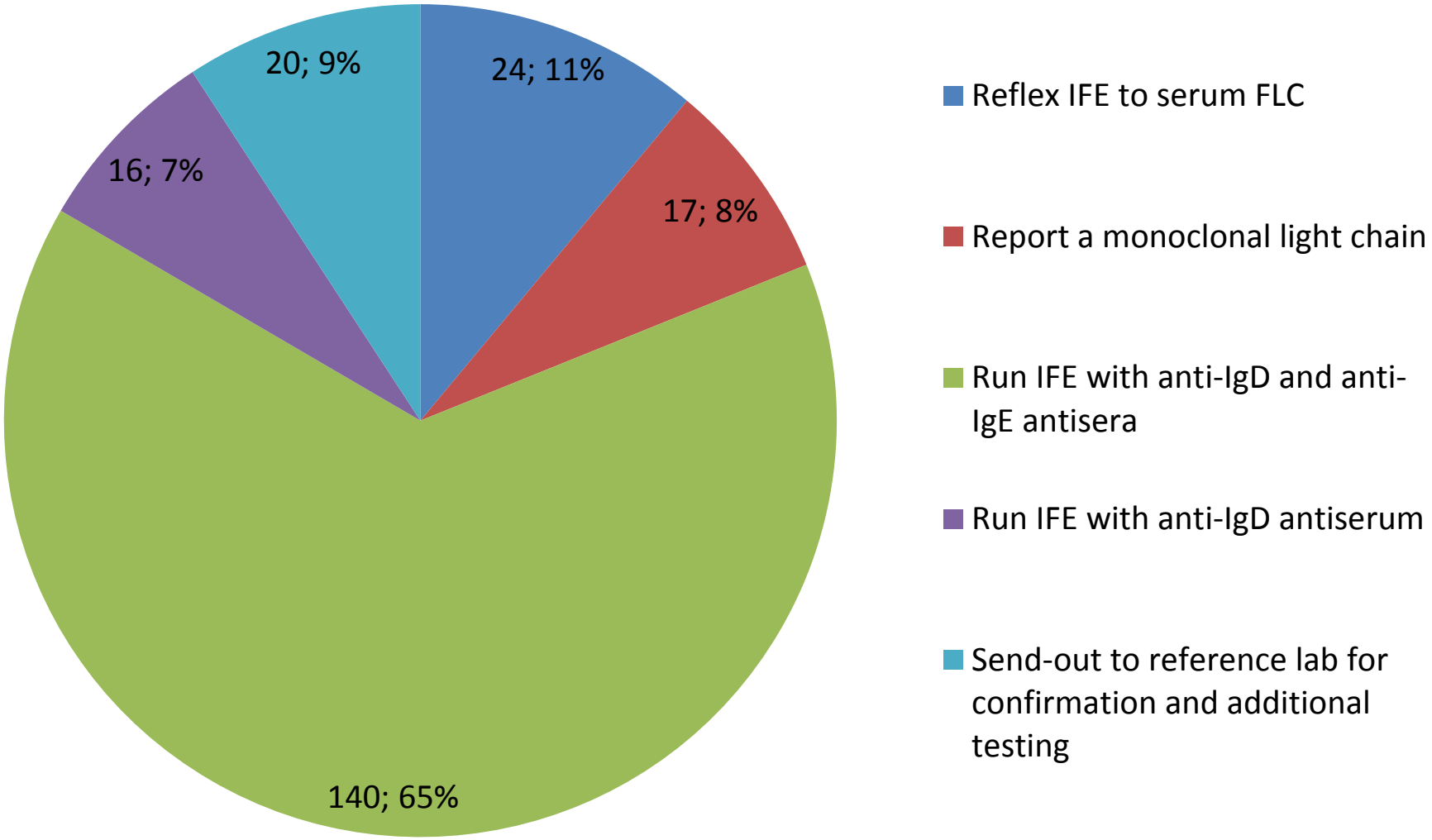
Count of Q6 Opt.7: Selective Ig quantitation e.g. IgA if IgA M-protein in beta or alpha-2 fraction

Count of Q6 Opt.8: UPEP and IFE (and quantification of BJP if detected)

Count of Q6 Free text (Other tests)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/ NZ	CROATIA	JAPAN	SWITZER LAND	TURKEY	Grand Total
1	54	15	12	37	4	**22**	2	3	2	4	**155**
2	29	6	2	5	1	**4**	1	3	2	4	**57**
3	49	11	7	22	5	**17**	2	2	2	3	**120**
4	60	19	8	33	5	**20**	4	5	6	2	**162**
5	3			1				1	2		**7**
6	21	8	10	24	2	**10**	3	2	1	3	**84**
7	12	3	4	7		**2**	1	1	1		**31**
8	48	9	8	14	5	**10**	1	5	1	4	**105**
Other	13	2	5	4		**4**	1		2		**31**

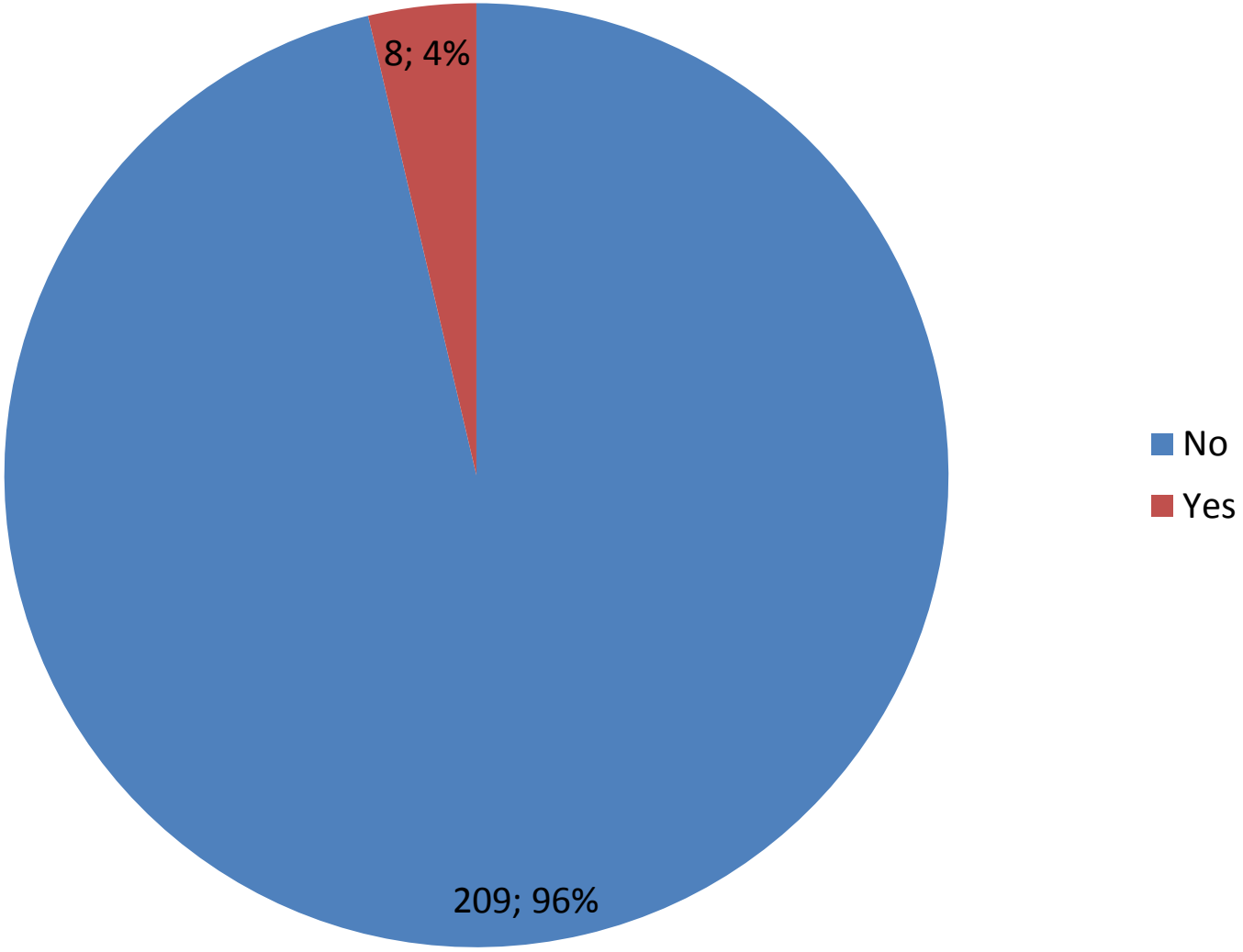
Q7: Once a light chain (kappa or lambda) is identified on serum IFE or IS without a corresponding heavy chain for the first time, with no available history, what is the next step?



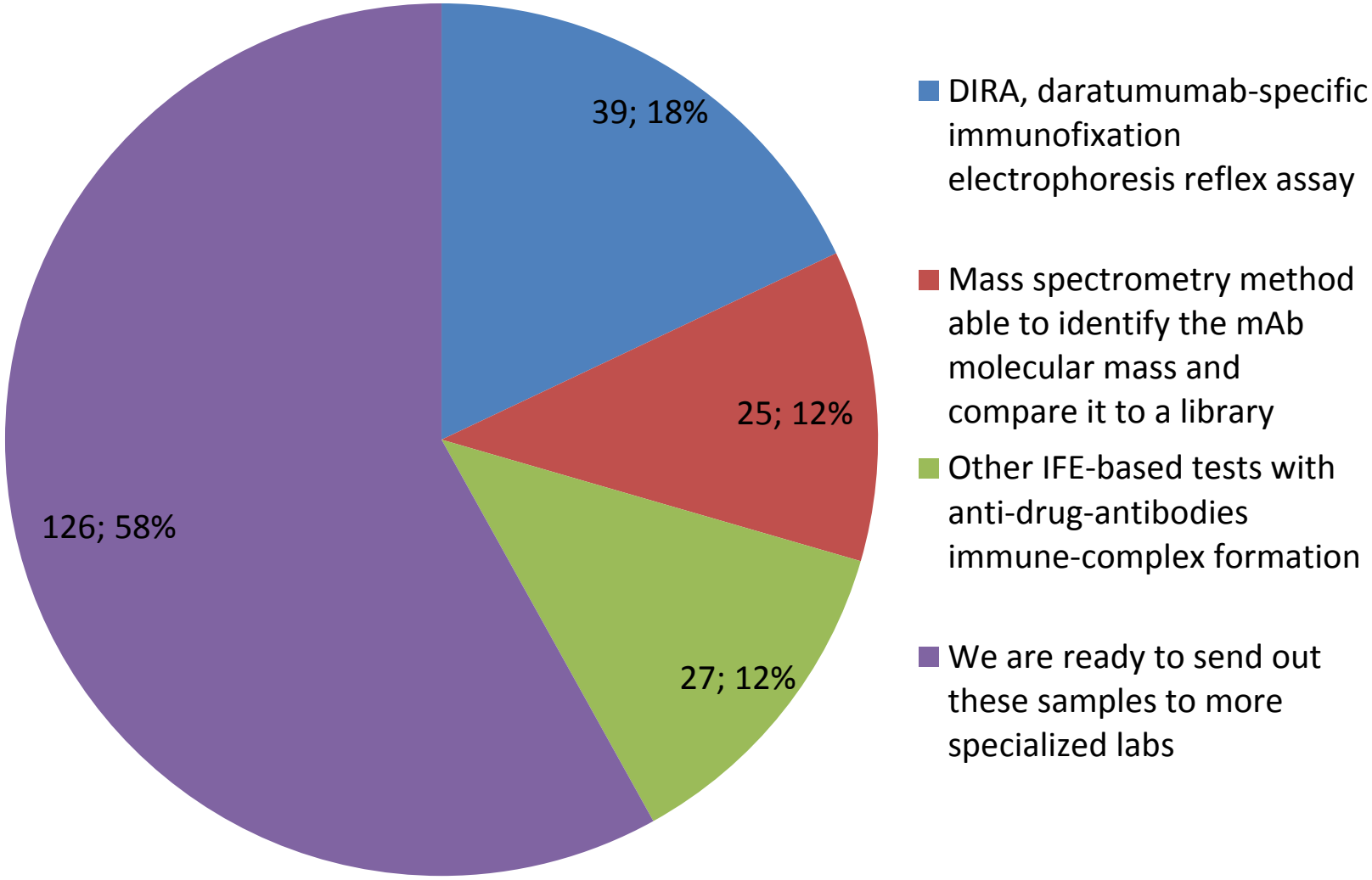
Options	Q7: **Once a light chain (kappa or lambda) is identified on serum IFE or IS without a corresponding heavy chain for the first time, with no available history, what is the next step?**
1	Reflex IFE to serum FLC
2	Report a monoclonal light chain
3	Run IFE with anti-IgD and anti-IgE antisera
4	Run IFE with anti-IgD antiserum
5	Send-out to reference lab for confirmation and additional testing

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	7	3	2	2	2	**1**	3	2	1	1	**24**
2	5	2	2	4			2	1	1		**17**
3	61	14	7	26	3	**22**			3	4	**140**
4	5	3	2	2		**2**		2			**16**
5	5		2	8	1	**2**	1		1		**20**

Q8: Do you perform any routine testing to distinguish between an endogenous M-protein and a therapeutic mAb?



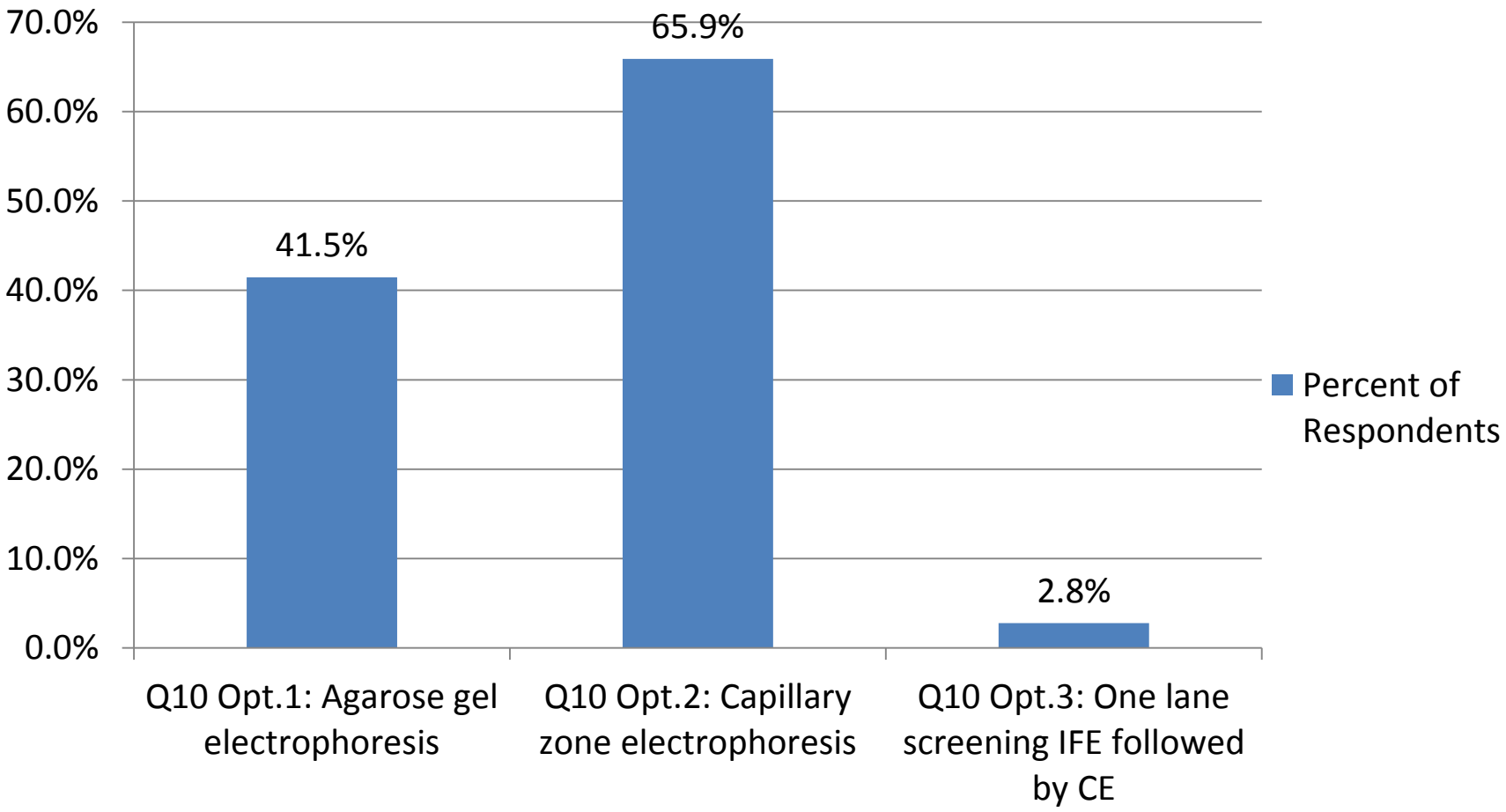
Q9: Which method do you use (or think will be able to use in the future) to detect this interference?



Options	Q9: **Which method do you use (or think will be able to use in the future) to detect this interference?**
1	DIRA, daratumumab-specific immunofixation electrophoresis reflex assay
2	Mass spectrometry method able to identify the mAb molecular mass and compare it to a library
3	Other IFE-based tests with anti-drug-antibodies immune-complex formation
4	We are ready to send out these samples to more specialized labs

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	16	7	3	4	1	**6**	1		1		**39**
2	8		2	4	1	**3**		2	2	3	**25**
3	13	3		5		**2**	1	1		2	**27**
4	46	12	10	29	4	**16**	4	2	3		**126**

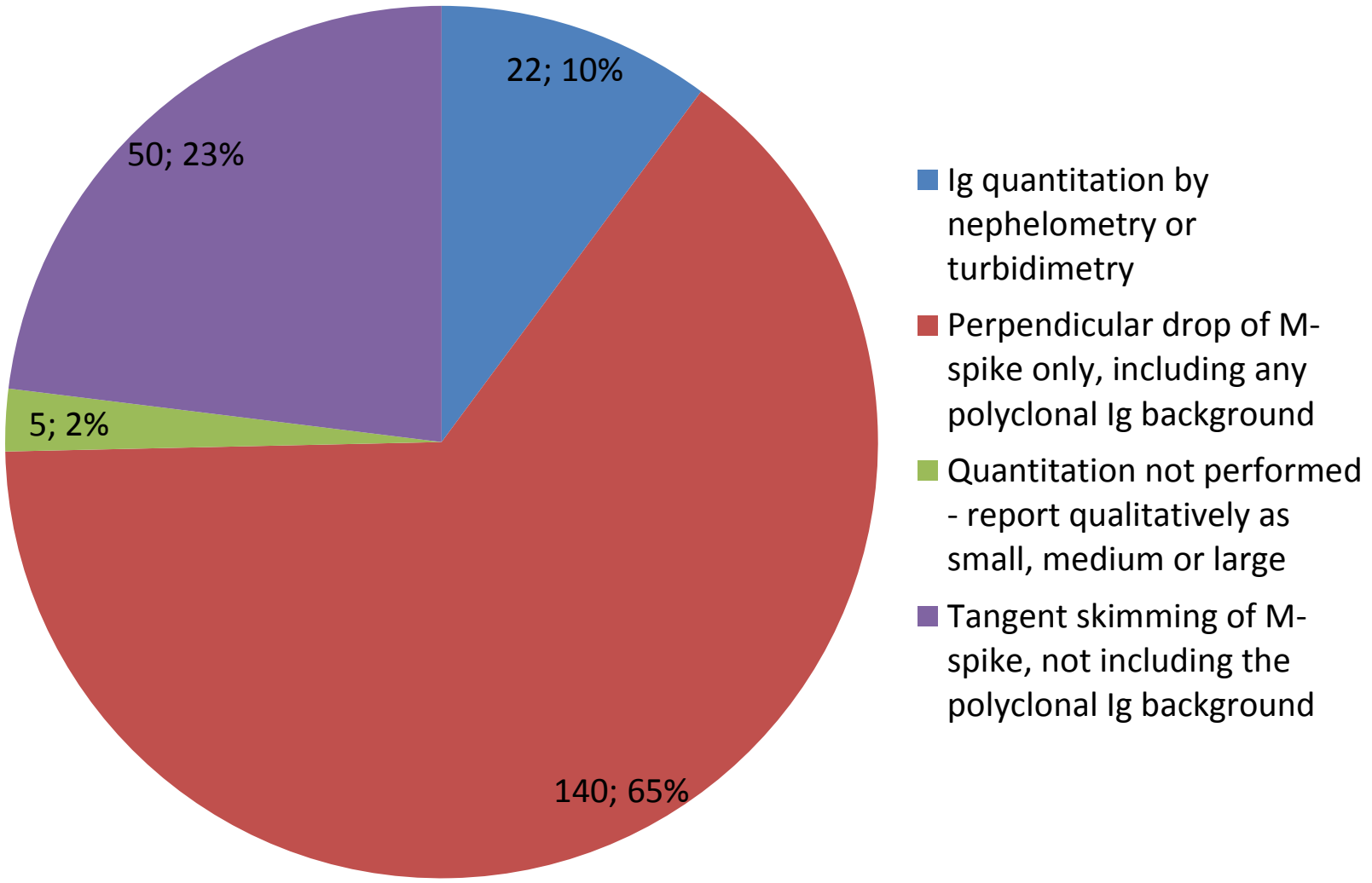
Q10: What methods do you use for SPEP? (select all that apply)



Options	Q10: **What methods do you use for SPEP? (select all that apply)**
1	Count of Q10 Opt.1: Agarose gel electrophoresis
2	Count of Q10 Opt.2: Capillary zone electrophoresis
3	Count of Q10 Opt.3: One lane screening IFE followed by CE

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	11	17	12	17	4	**16**	3	4	2	4	**90**
2	75	6	4	34	2	**10**	3	2	4	3	**143**
3	1	1	1			**1**		2			**6**

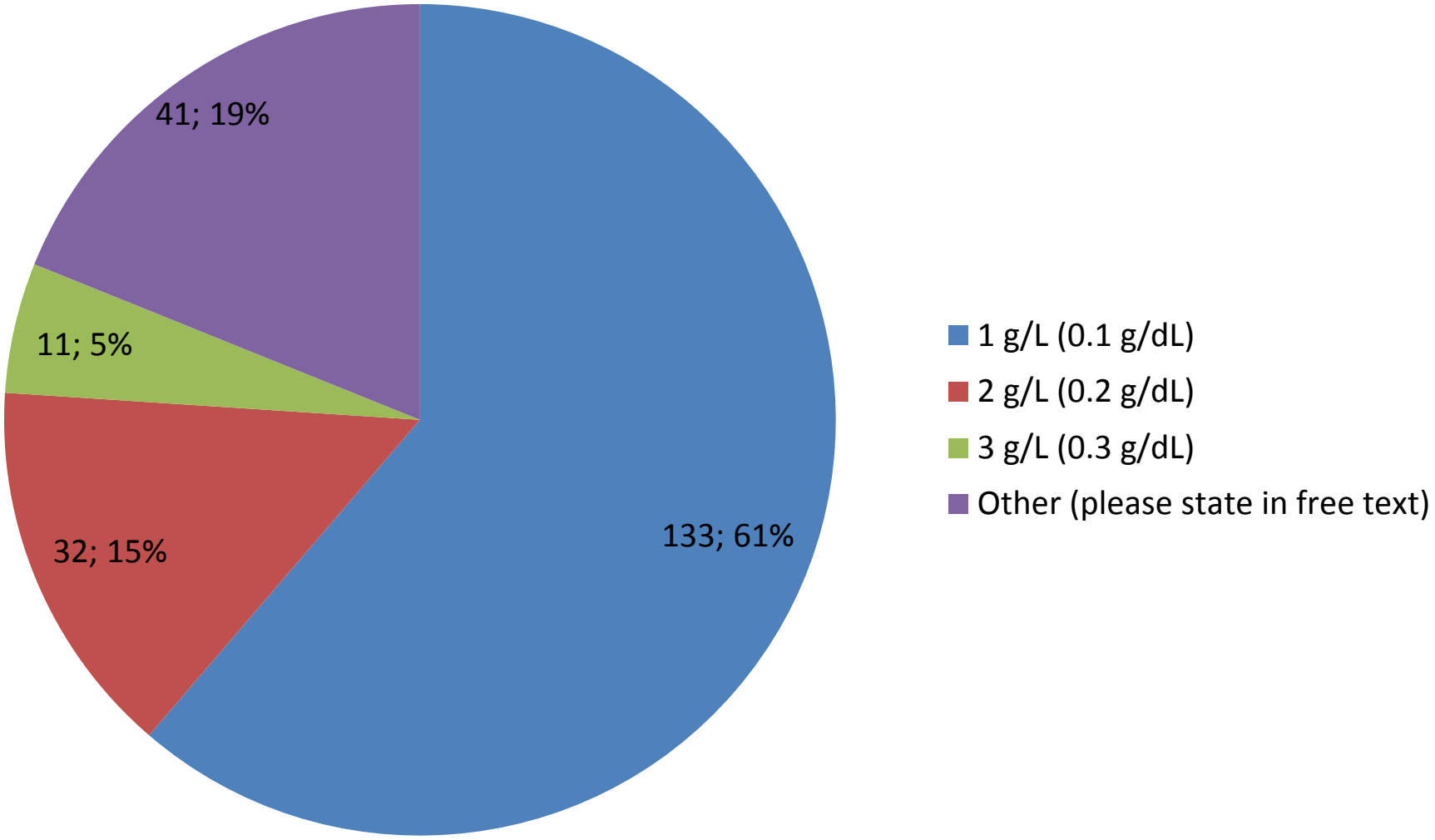
Q11: How do you currently quantitate the M-protein migrating in the gamma fraction?



Options	Q11: **How do you currently quantitate the M-protein migrating in the gamma fraction?**
1	Ig quantitation by nephelometry or turbidimetry
2	Perpendicular drop of M-spike only, including any polyclonal Ig background
3	Quantitation not performed - report qualitatively as small, medium or large
4	Tangent skimming of M-spike, not including the polyclonal Ig background

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	4		8			**2**	3	4		1	**22**
2	67	11		36	4	**19**	1		2		**140**
3	1				1		1	1		1	**5**
4	11	11	7	6	1	**6**	1		4	3	**50**

Q12: What is your method's limit of detection of an M-protein migrating in the gamma fraction on a low polyclonal Ig background of less than 5 g/L (0.5 g/dL). Select one concentration.



Q12: **What is your method's limit of detection of an M-protein migrating in the gamma fraction on a low polyclonal Ig background of less than 5 g/L (0.5 g/dL). Select one concentration.**

1 g/L (0.1 g/dL)

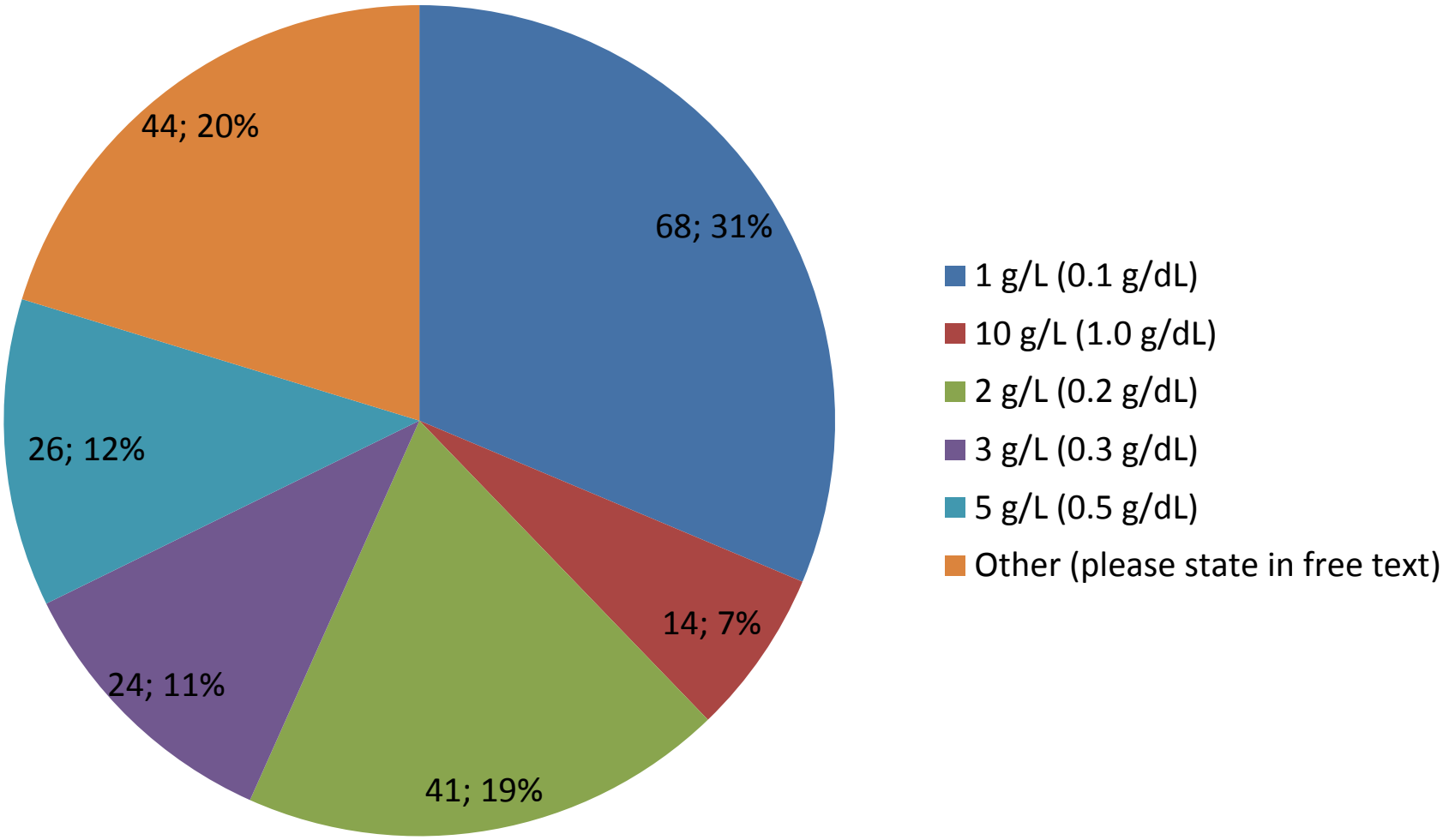
2 g/L (0.2 g/dL)

3 g/L (0.3 g/dL)

Other (please state in free text)

Conc. (g/L)	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	55	13	10	24	5	**19**	3	1	2	1	**133**
2	15	2		8	1	**4**				2	**32**
3	3			4				1	1	2	**11**
Other	10	7	5	6		**4**	3	3	3		**41**

Q13: What is your method's limit of detection of an M-protein migrating in the gamma fraction on an elevated polyclonal Ig background of greater than 20 g/L (2.0 g/dL). Select one concentration



Q13: **What is your method's limit of detection of an M-protein migrating in the gamma fraction on an elevated polyclonal Ig background of greater than 20 g/L (2.0 g/dL). Select one concentration.**

1 g/L (0.1 g/dL)

10 g/L (1.0 g/dL)

2 g/L (0.2 g/dL)

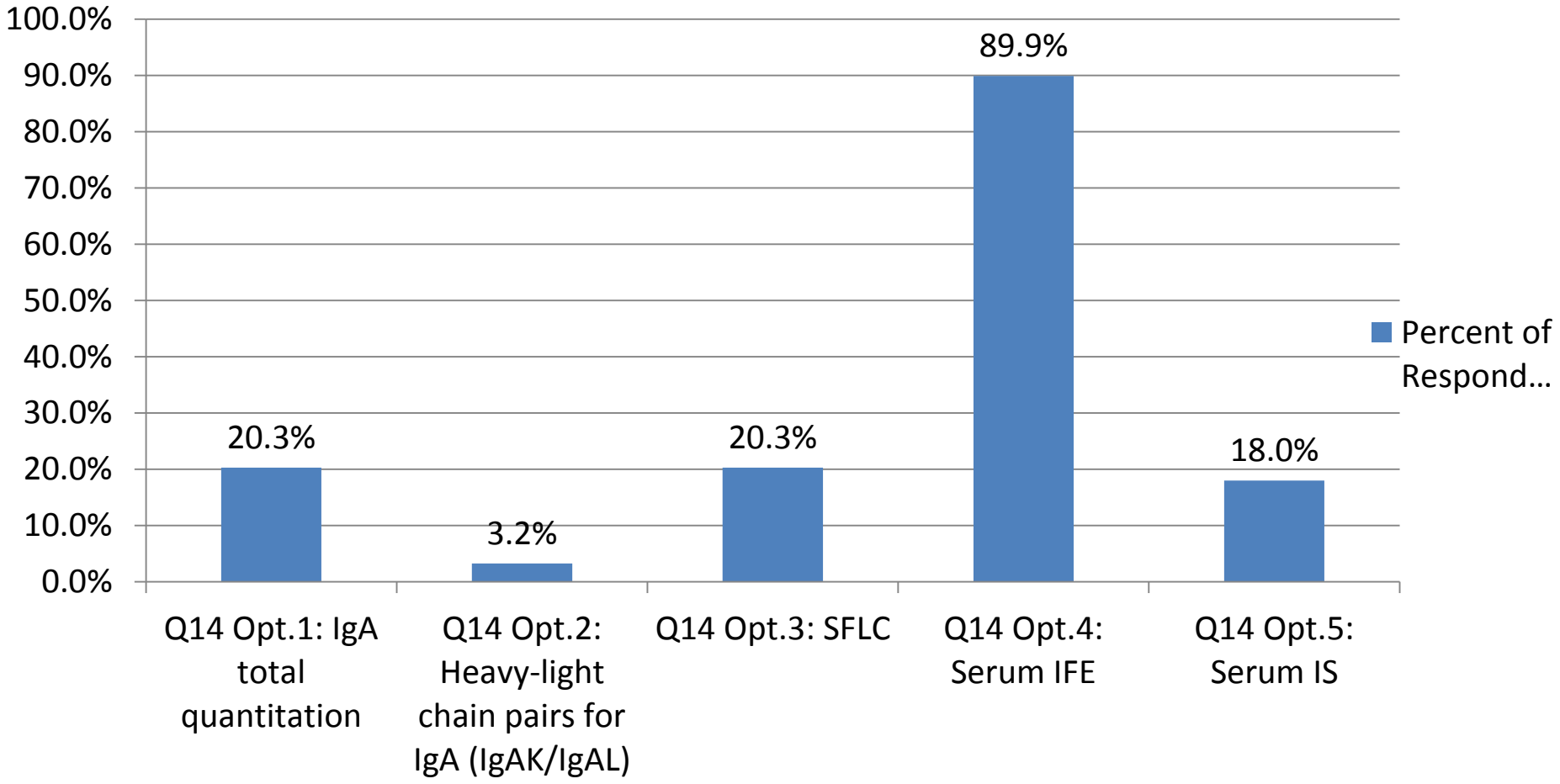
3 g/L (0.3 g/dL)

5 g/L (0.5 g/dL)

Other (please state in free text)

Conc. (g/L)	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	AUS/ NZ	CROATIA	JAPAN	SWITZER LAND	TURKEY	Grand Total
1	26	8	10	5		**14**		2	2	1	**68**
10	7			1	1		2		1	2	**14**
2	14	3	3	11	2	**6**	1			1	**41**
3	12	2	1	5	1	**1**			1	1	**24**
5	15	2		6		**2**		1			**26**
Other	9	7	1	14	2	**4**	3	2	2		**44**

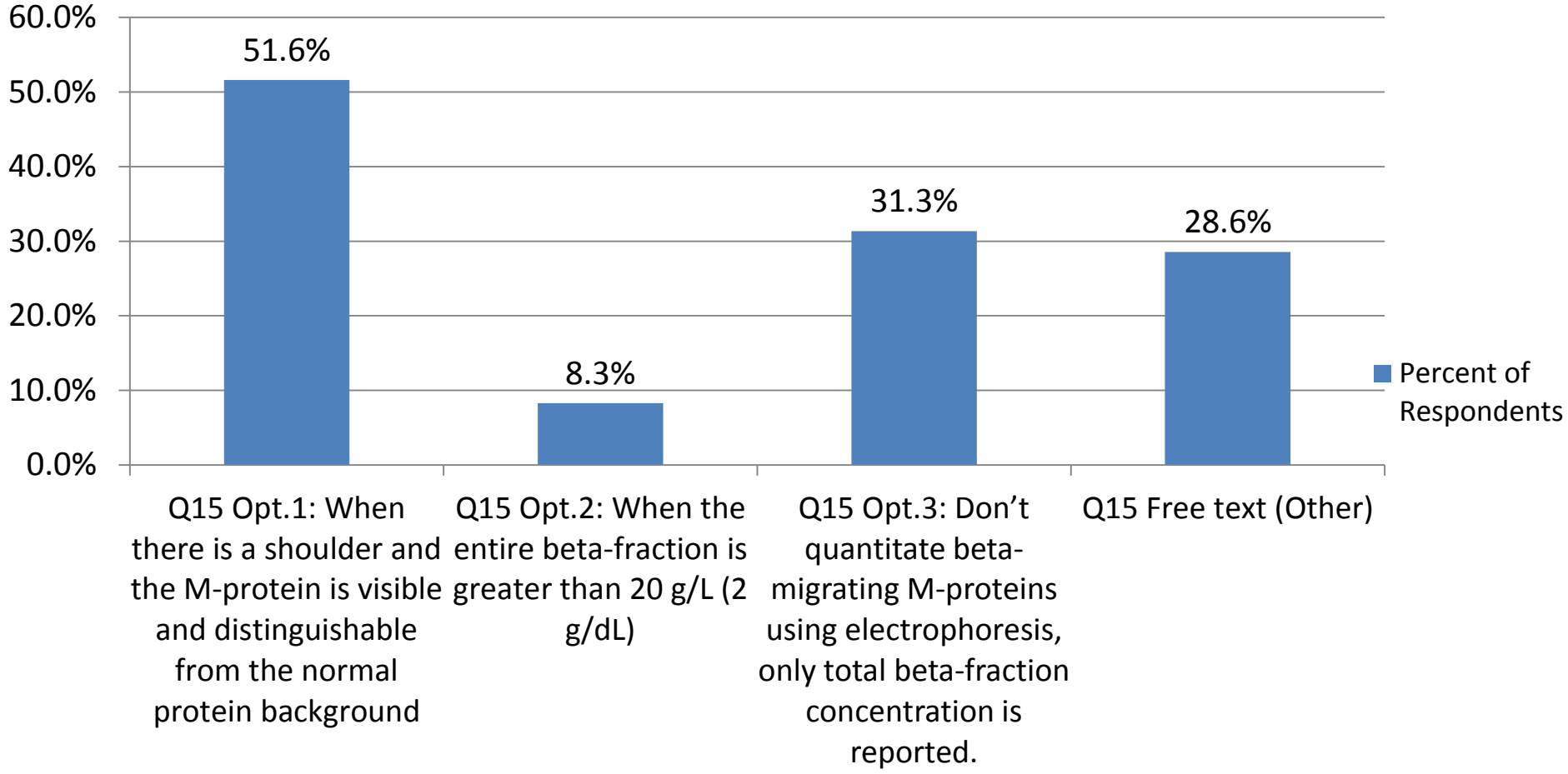
Q14: If beta or alpha-2 fraction is increased or abnormal, but not enough for you to quantitate it, and a monoclonal gammopathy is suspected, what are the next tests that you would suggest to be performed? Select all that apply.



Options	Q14: **If beta or alpha-2 fraction is increased or abnormal, but not enough for you to quantitate it, and a monoclonal gammopathy is suspected, what are the next tests that you would suggest to be performed? Select all that apply.**
1	Count of Q14 Opt.1: IgA total quantitation
2	Count of Q14 Opt.2: Heavy-light chain pairs for IgA (IgAK/IgAL)
3	Count of Q14 Opt.3: SFLC
4	Count of Q14 Opt.4: Serum IFE
5	Count of Q14 Opt.5: Serum IS

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	11	8	3	7	1	**6**	2	2	2	2	**44**
2	2							1	3	1	**7**
3	17	7	1	8	1	**5**	1	2	2		**44**
4	77	17	14	36	6	**25**	5	5	5	5	**195**
5	19	2	2	10	1	**2**		2	1		**39**

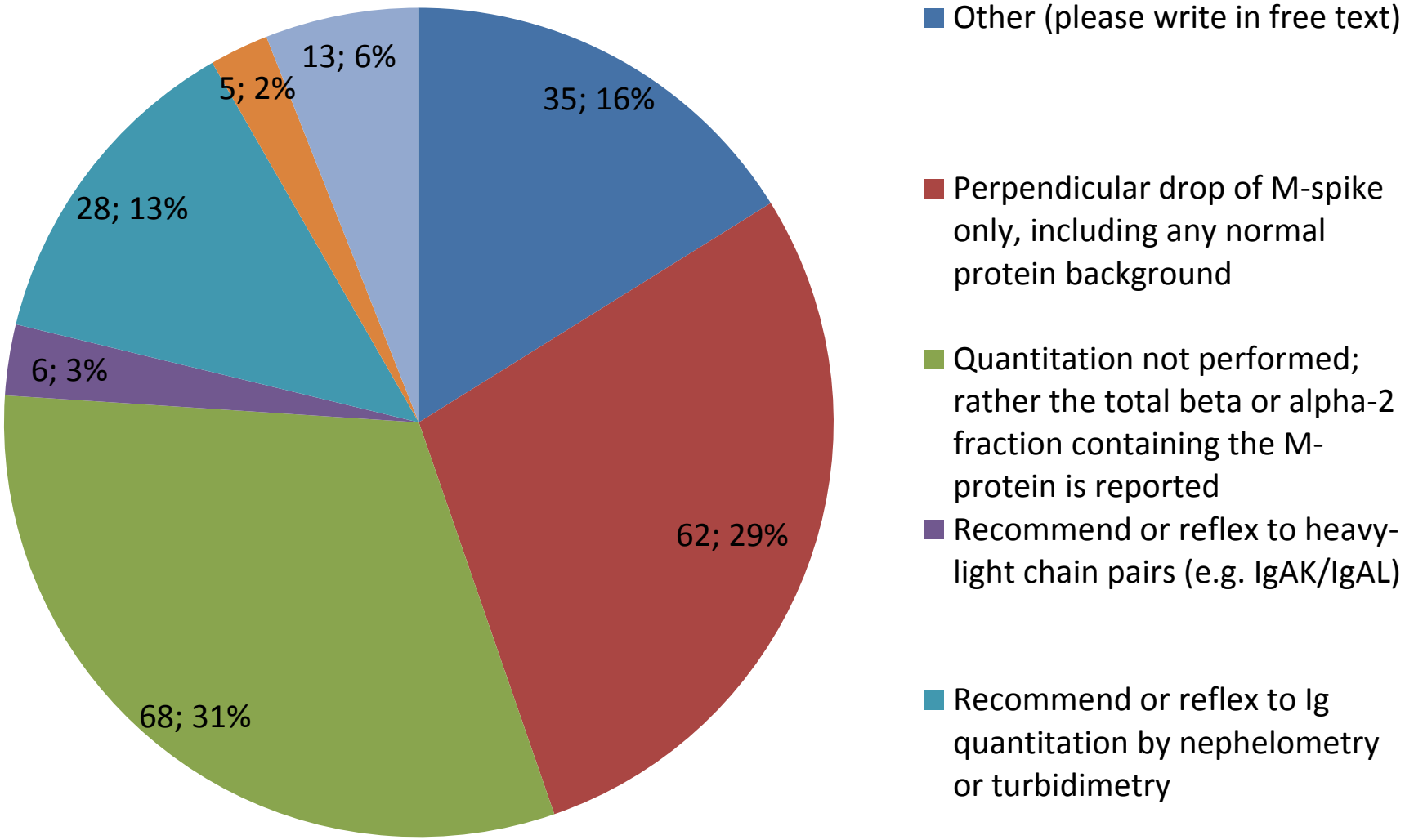
Q15: When do you quantitate the beta-fraction or beta-1 and beta-2 fractions? Select all that apply



Options	Q15: **When do you quantitate the beta-fraction or beta-1 and beta-2 fractions? Select all that apply.**
1	Count of Q15 Opt.1: When there is a shoulder and the M-protein is visible and distinguishable from the normal protein background
2	Count of Q15 Opt.2: When the entire beta-fraction is greater than 20 g/L (2 g/dL)
3	Count of Q15 Opt.3: Don't quantitate beta-migrating M-proteins using electrophoresis, only total beta-fraction concentration is reported.
Other	Count of Q15 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	55	6	4	27	1	**10**	2	1	3	3	**112**
2	8	2	1	3	1			1		2	**18**
3	23	10	2	5	2	**13**	3	5	2	3	**68**
Other	8	8	11	23	3	**7**	1		1		**62**

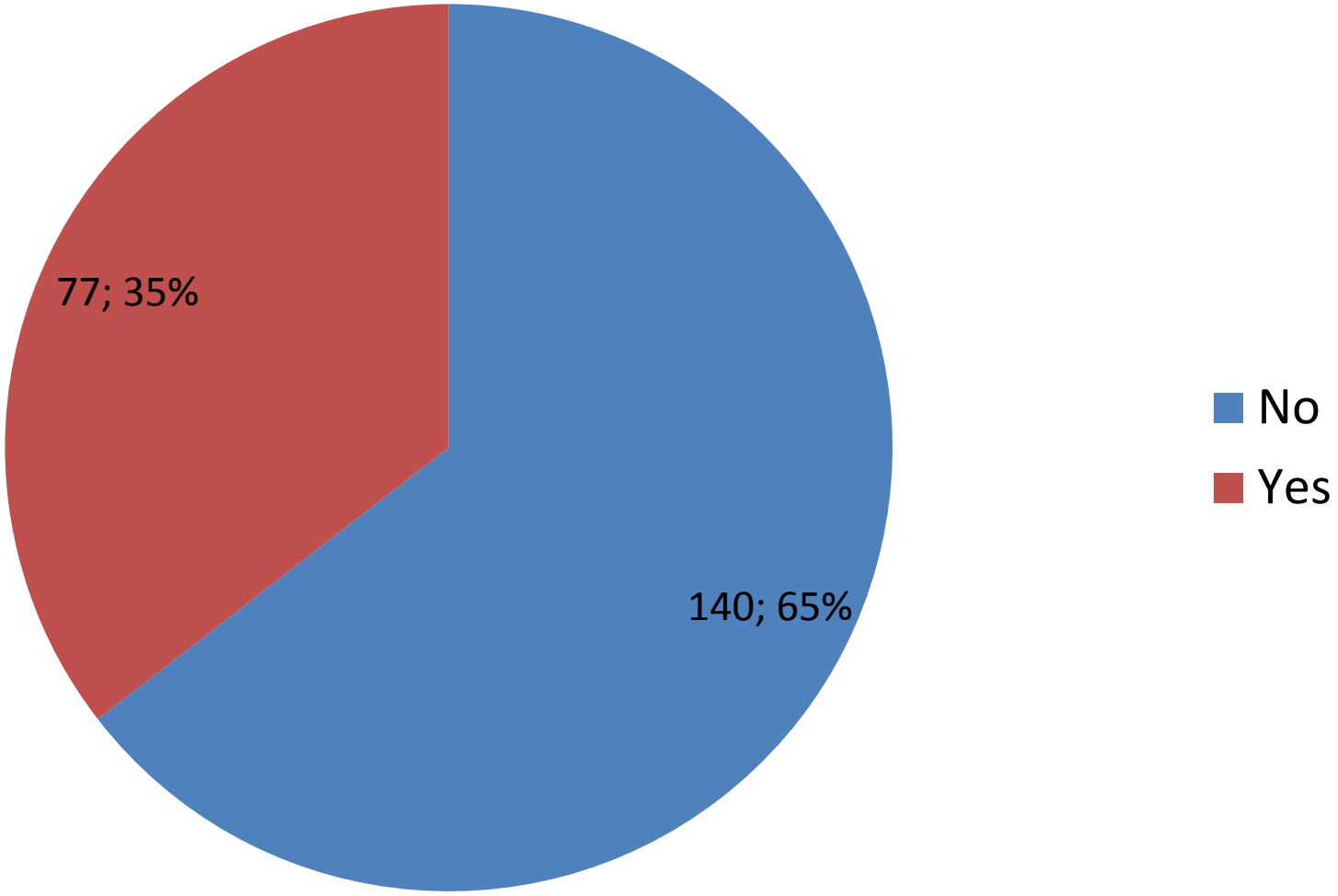
Q16: How do you quantify M-proteins overlapping normal proteins in the beta and alpha-2 fractions when the M-protein is not clearly separated?



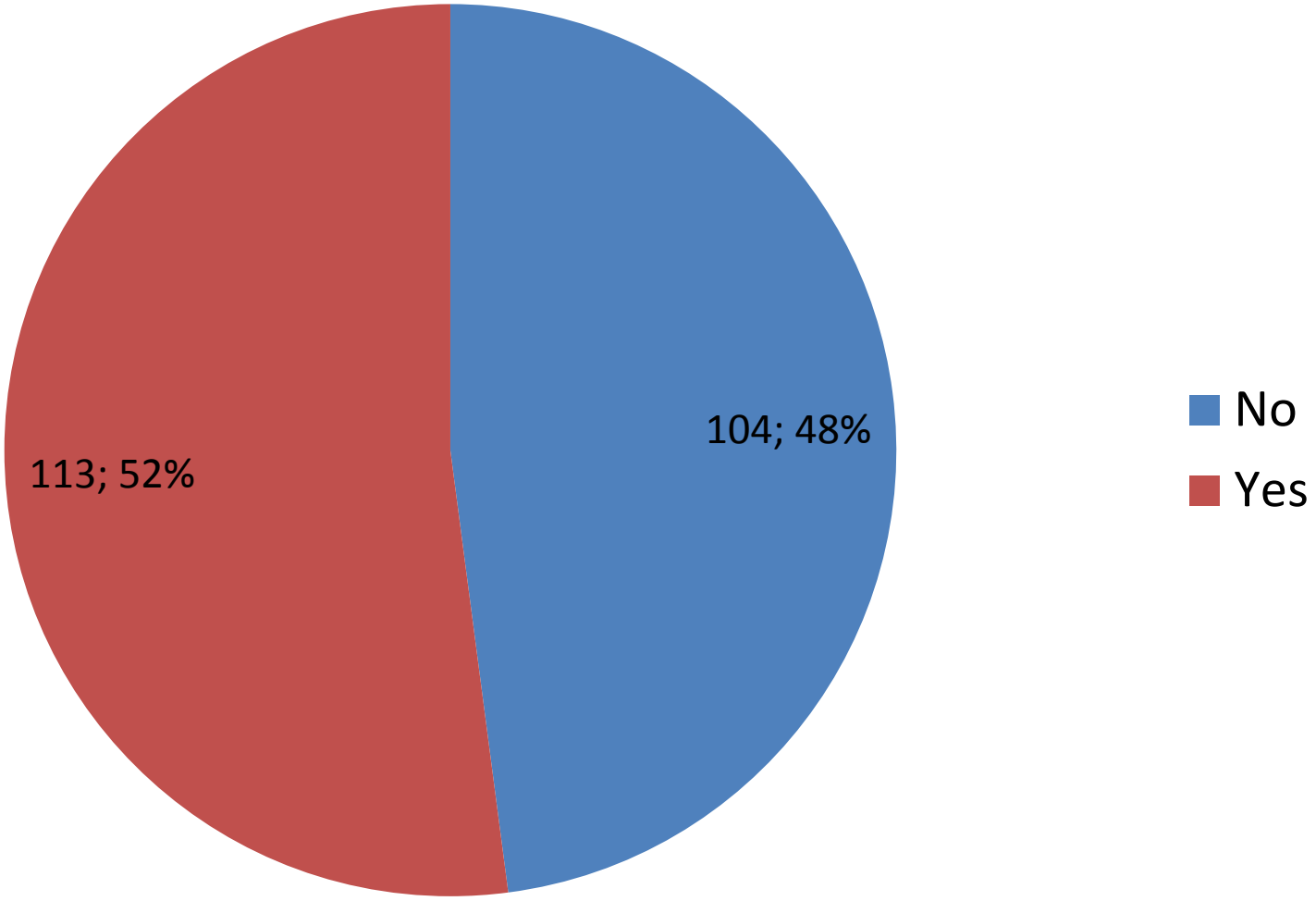
Options	Q16: **How do you quantify M-proteins overlapping normal proteins in the beta and alpha-2 fractions when the M-protein is not clearly separated?**
1	Other (please write in free text)
2	Perpendicular drop of M-spike only, including any normal protein background
3	Quantitation not performed; rather the total beta or alpha-2 fraction containing the M-protein is reported
4	Recommend or reflex to heavy-light chain pairs (e.g. IgAK/IgAL)
5	Recommend or reflex to Ig quantitation by nephelometry or turbidimetry
6	Recommend SFLC
7	Tangent skimming of M-spike, not including the normal protein background

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	6	3	9	8	3	**3**	1		1	1	**35**
2	30	1		25	1	**5**					**62**
3	33	6		4	1	**15**	4	5			**68**
4	3								3		**6**
5	7	11	3	1	1	**3**				2	**28**
6	1		1	1						2	**5**
7	3	1	2	3		**1**	1		2		**13**

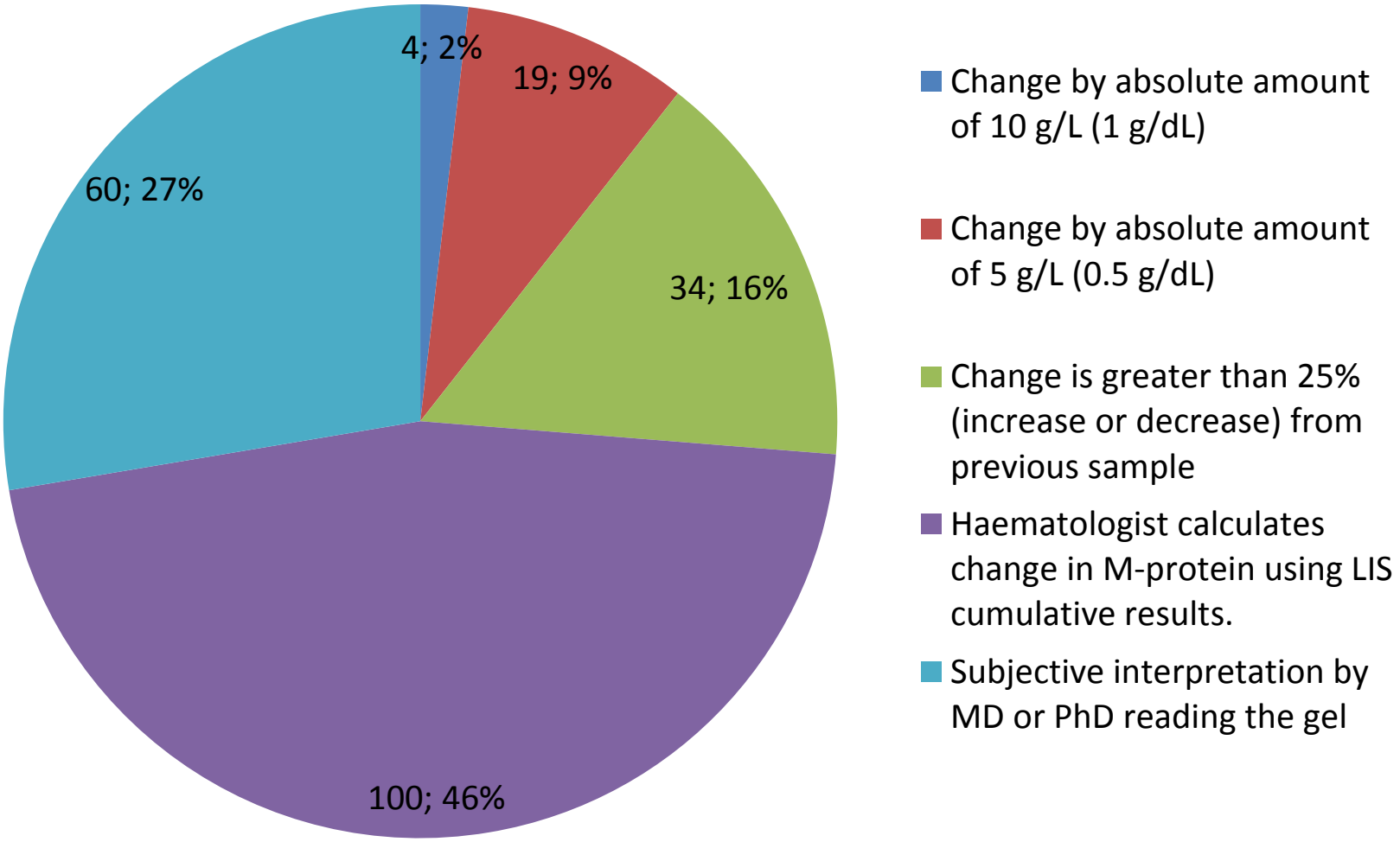
Q17: Does your institution conduct a periodic ‘gating’ challenge among operators to assess variation in M-protein quantitation?



Q18: Do you report quantitative electrophoretic result changes comparing to previous measurements on the same patient?



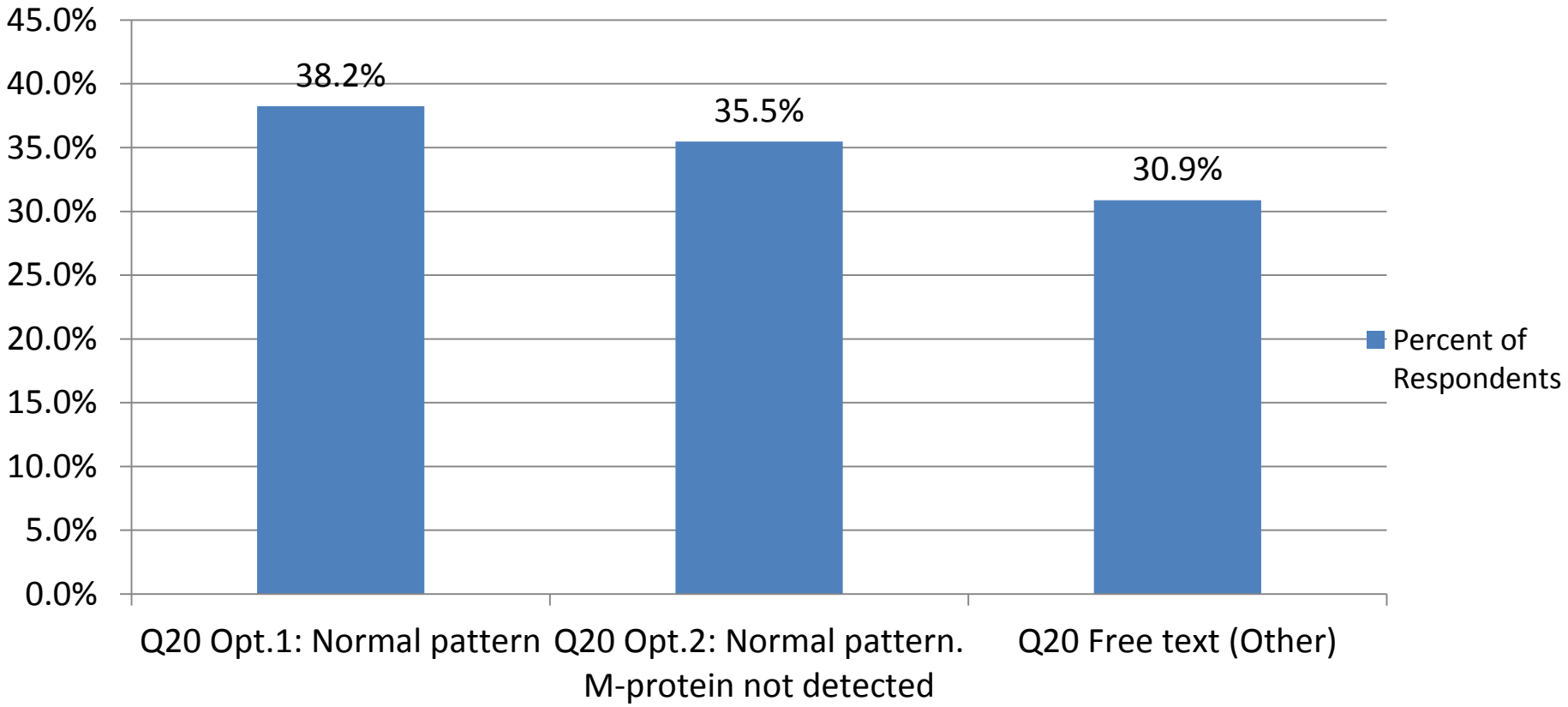
Q19: If yes, when do you consider an M-protein change significant?



Options	Q19: **If yes, when do you consider an M-protein change significant?**
1	Change by absolute amount of 10 g/L (1 g/dL)
2	Change by absolute amount of 5 g/L (0.5 g/dL)
3	Change is greater than 25% (increase or decrease) from previous sample
4	Haematologist calculates change in M-protein using LIS cumulative results.
5	Subjective interpretation by MD or PhD reading the gel

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	2				1			1			**4**
2	6			7	1	**2**	1	1	1		**19**
3	14	1	4	5	1	**3**			3	3	**34**
4	41	14	5	19		**14**	3	2		2	**100**
5	20	7	6	11	3	**8**	2	1	2		**60**

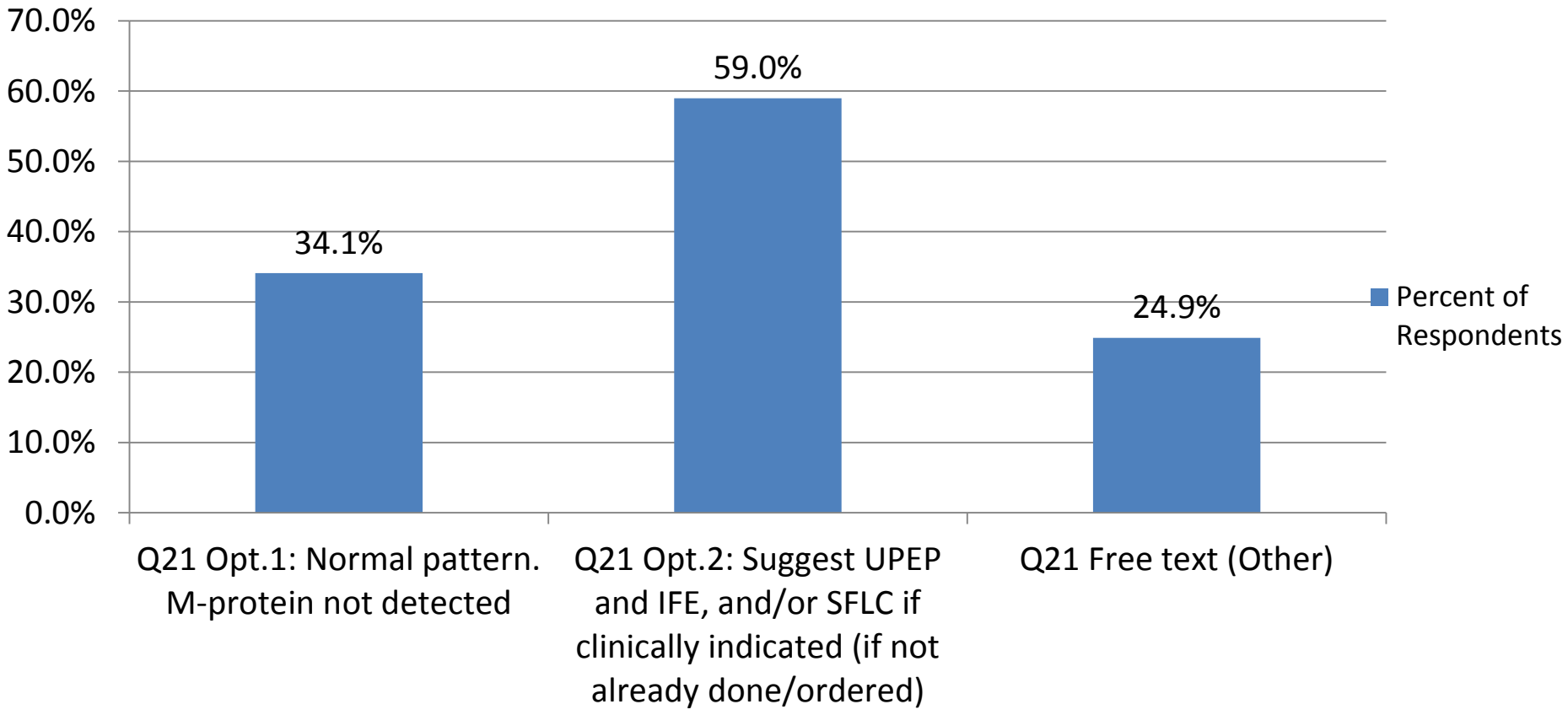
Q20: How do you report a normal serum protein electrophoresis pattern? Select all that apply



Options	Q20: **How do you report a normal serum protein electrophoresis pattern? Select all that apply**
1	Count of Q20 Opt.1: Normal pattern
2	Count of Q20 Opt.2: Normal pattern. M-protein not detected
Other	Count of Q20 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	44	7	1	8	3	**7**	4	4	2	3	**83**
2	22	9	6	16	3	**16**			3	2	**77**
Other	18	8	9	21		**7**	2	1	1		**67**

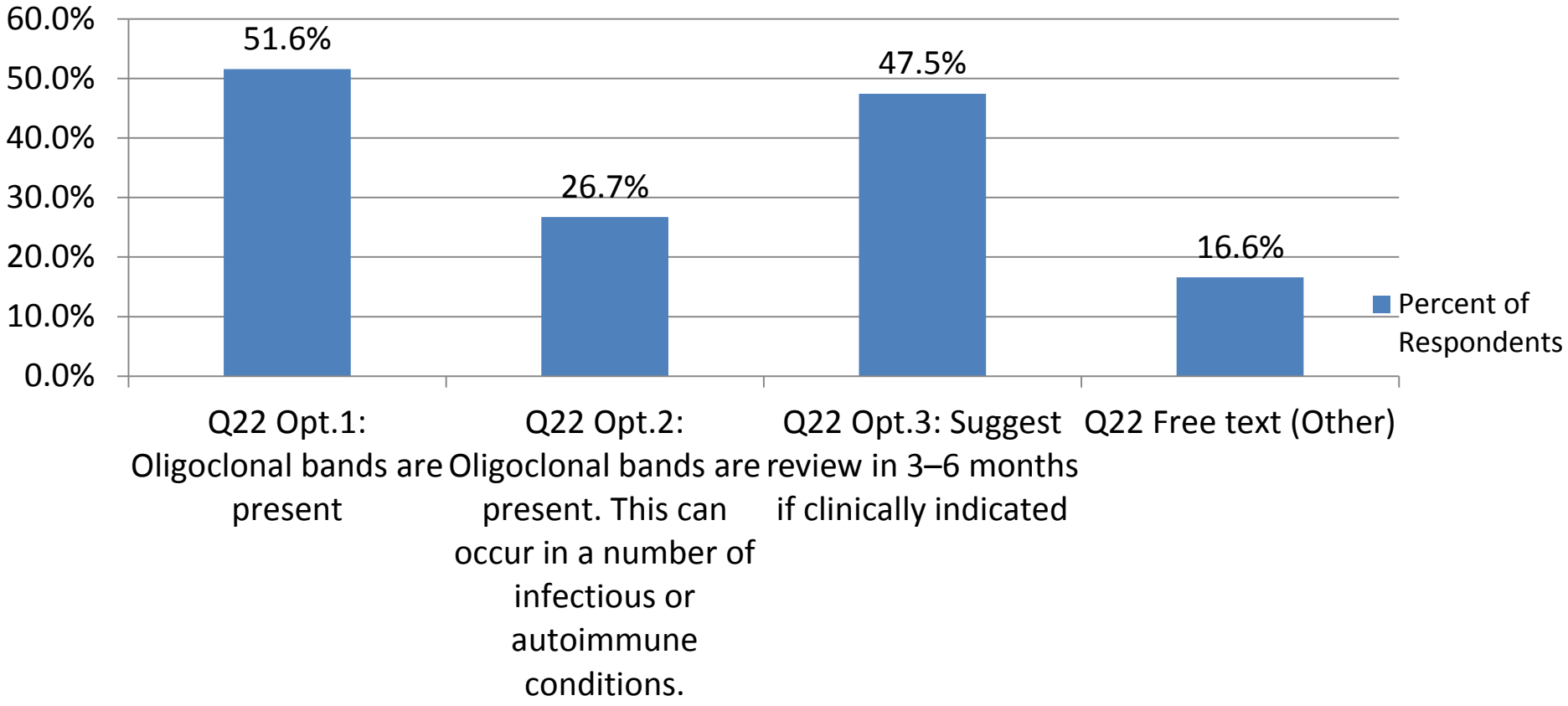
Q21: How do you interpret a normal serum protein electrophoresis pattern (if ordered as a standalone test) but the clinical context suggests suspicion of plasma cell dyscrasia? Select all that apply.



Options	Q21: **How do you interpret a normal serum protein electrophoresis pattern (if ordered as a standalone test) but the clinical context suggests suspicion of plasma cell dyscrasia? Select all that apply.**
1	Count of Q21 Opt.1: Normal pattern. M-protein not detected
2	Count of Q21 Opt.2: Suggest UPEP and IFE, and/or SFLC if clinically indicated (if not already done/ordered)
Other	Count of Q21 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	21	11	7	11	3	**13**	2	3	2	1	**74**
2	60	9	9	21	3	**13**	3	1	5	4	**128**
Other	11	10	5	17	1	**7**	1	1	1		**54**

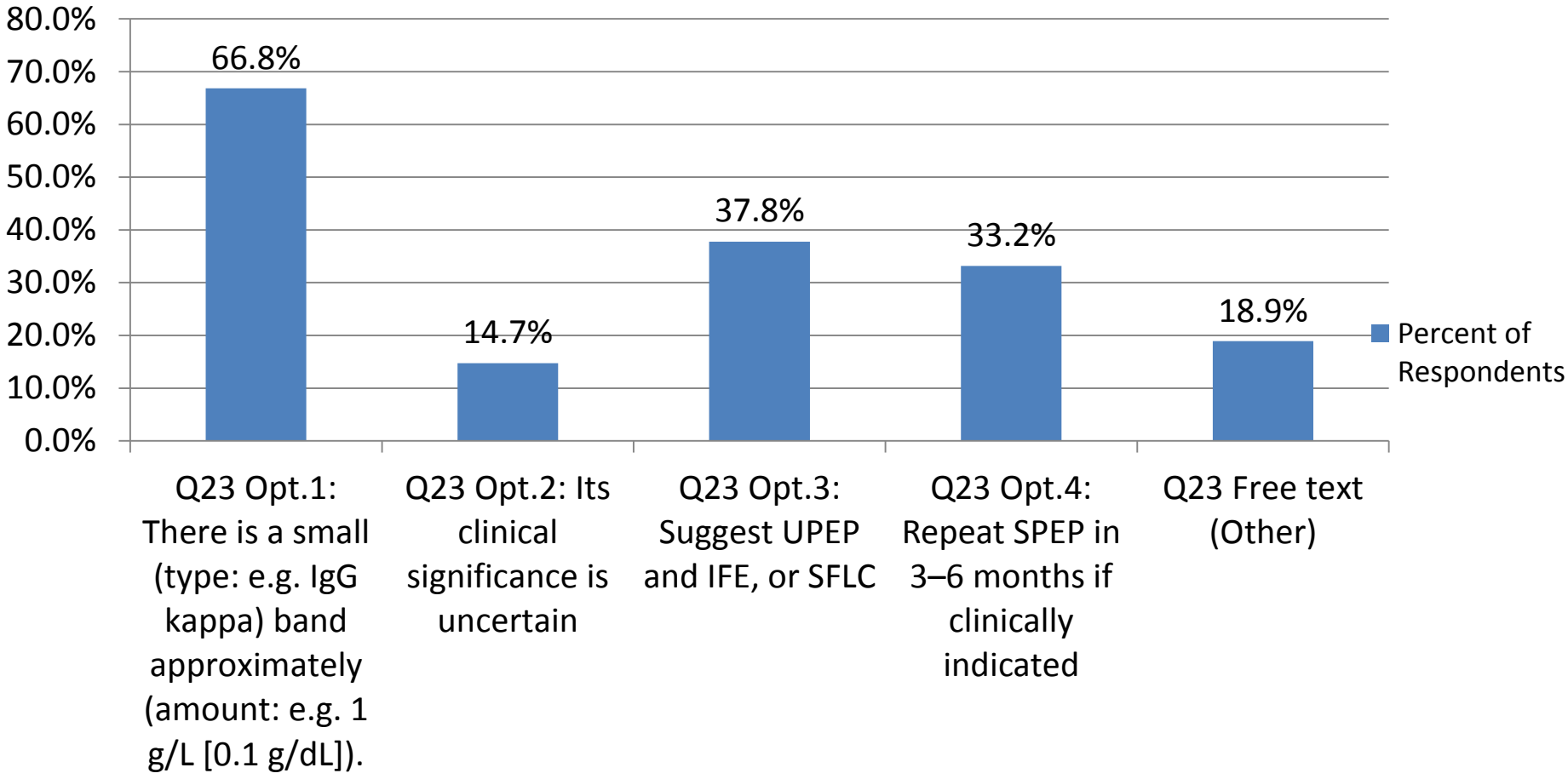
Q22: How do you report an oligoclonal banding pattern with 2 or more small bands on a polyclonal Ig background on serum protein electrophoresis? Select all that apply.



Options	Q22: **How do you report an oligoclonal banding pattern with 2 or more small bands on a polyclonal Ig background on serum protein electrophoresis? Select all that apply.**
1	Count of Q22 Opt.1: Oligoclonal bands are present
2	Count of Q22 Opt.2: Oligoclonal bands are present. This can occur in a number of infectious or autoimmune conditions.
3	Count of Q22 Opt.3: Suggest review in 3–6 months if clinically indicated
Other	Count of Q22 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	50	15	10	17	2	**7**	3	4	3	1	**112**
2	7	3	5	13	3	**19**		2	4	2	**58**
3	36	8	10	22		**19**	1	1	4	2	**103**
Other	8	4	4	12	2	**2**	2		1	1	**36**

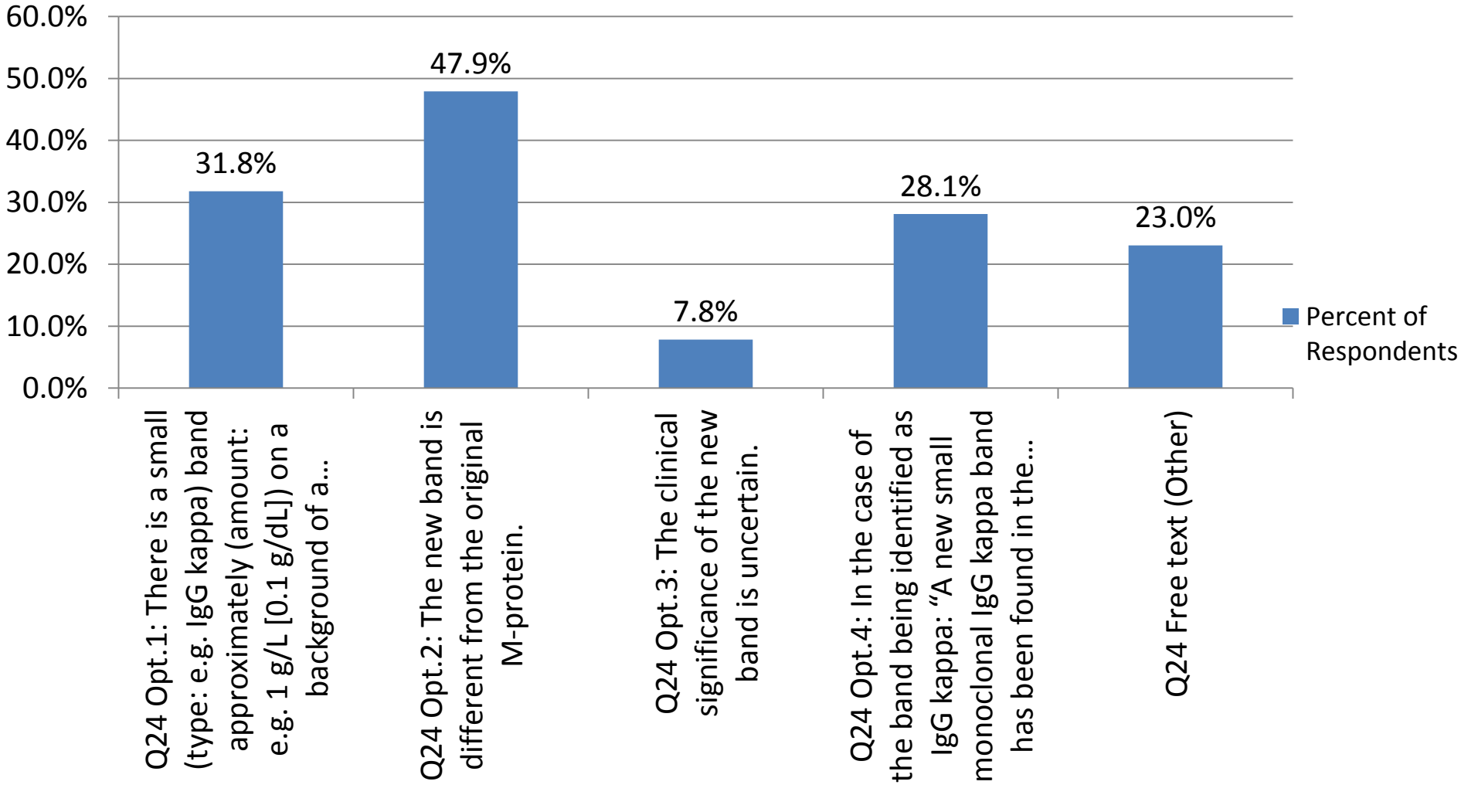
Q23: How do you report the first presentation of a small abnormal band on serum protein electrophoresis/immunofixation in a patient with no known M-protein? Select all that apply.



Options	Q23: **How do you report the first presentation of a small abnormal band on serum protein electrophoresis/immunofixation in a patient with no known M-protein? Select all that apply.**
1	Count of Q23 Opt.1: There is a small (type: e.g. IgG kappa) band approximately (amount: e.g. 1 g/L [0.1 g/dL]).
2	Count of Q23 Opt.2: Its clinical significance is uncertain
3	Count of Q23 Opt.3: Suggest UPEP and IFE, or SFLC
4	Count of Q23 Opt.4: Repeat SPEP in 3–6 months if clinically indicated
Other	Count of Q23 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	42	20	13	30	6	**24**	2	3	3	2	**145**
2		1	2	14	2	**10**		2	1		**32**
3	35	1	5	13	2	**13**	2	4	4	3	**82**
4	21	4	8	16	2	**14**	1	1	2	3	**72**
Other	9	4	4	18	2	**3**	1				**41**

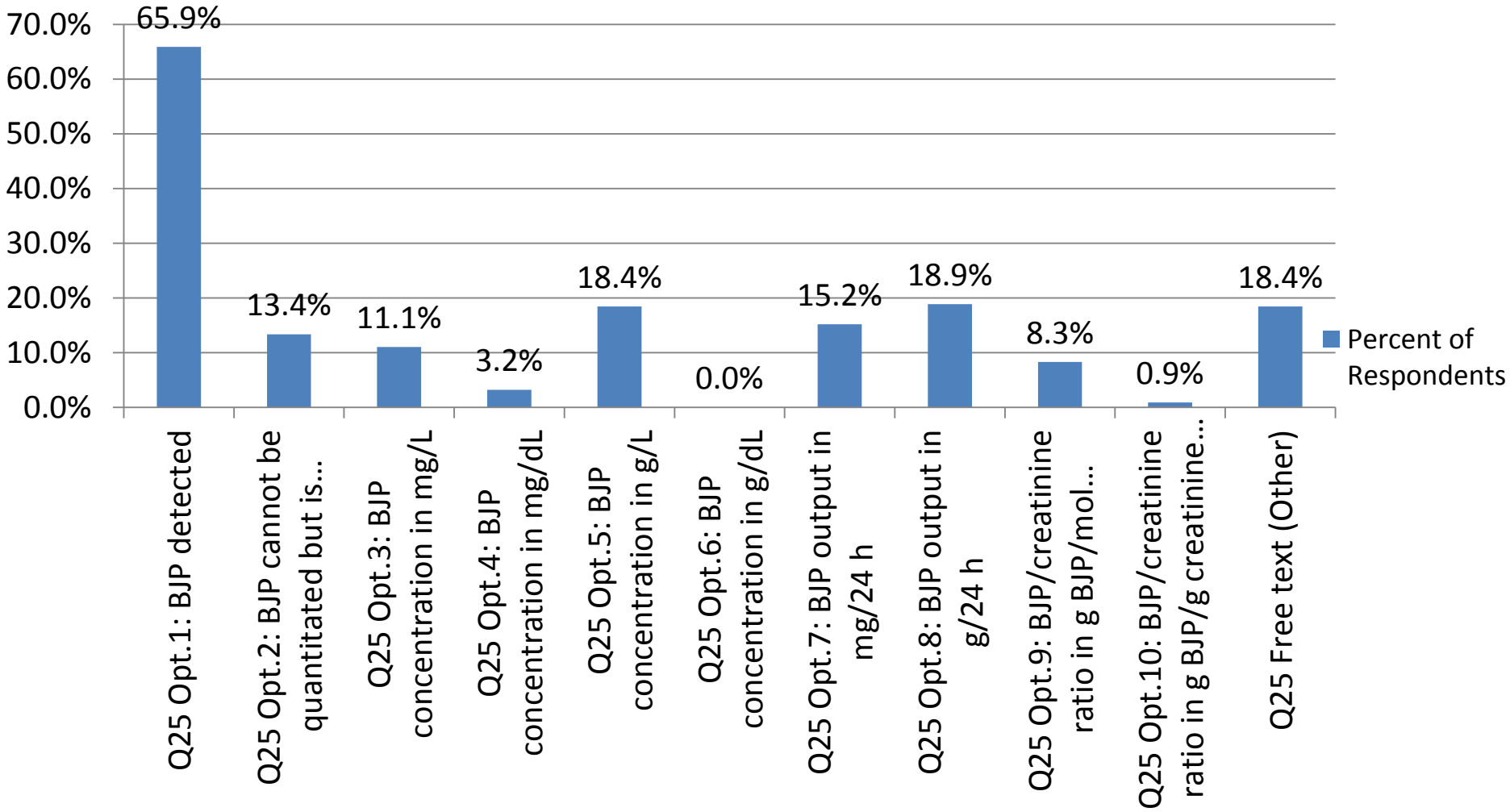
Q24: How do you report a new, small abnormal band with different electrophoretic mobility from the original M-protein in a patient with a known M-protein? Select all that apply.



Options	Q24: **How do you report a new, small abnormal band with different electrophoretic mobility from the original M-protein in a patient with a known M-protein? Select all that apply.**
1	Count of Q24 Opt.1: There is a small (type: e.g. IgG kappa) band approximately (amount: e.g. 1 g/L [0.1 g/dL]) on a background of a polyclonal and / or oligoclonal pattern.
2	Count of Q24 Opt.2: The new band is different from the original M-protein.
3	Count of Q24 Opt.3: The clinical significance of the new band is uncertain.
other	Count of Q24 Free text (Other)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	21	4	5	16	2	**13**	3	1	3	1	**69**
2	30	14	9	24	5	**13**		4	4	1	**104**
3	3	1		4		**8**		1			**17**
Other	18	5	1	14	2	**8**	2				**50**

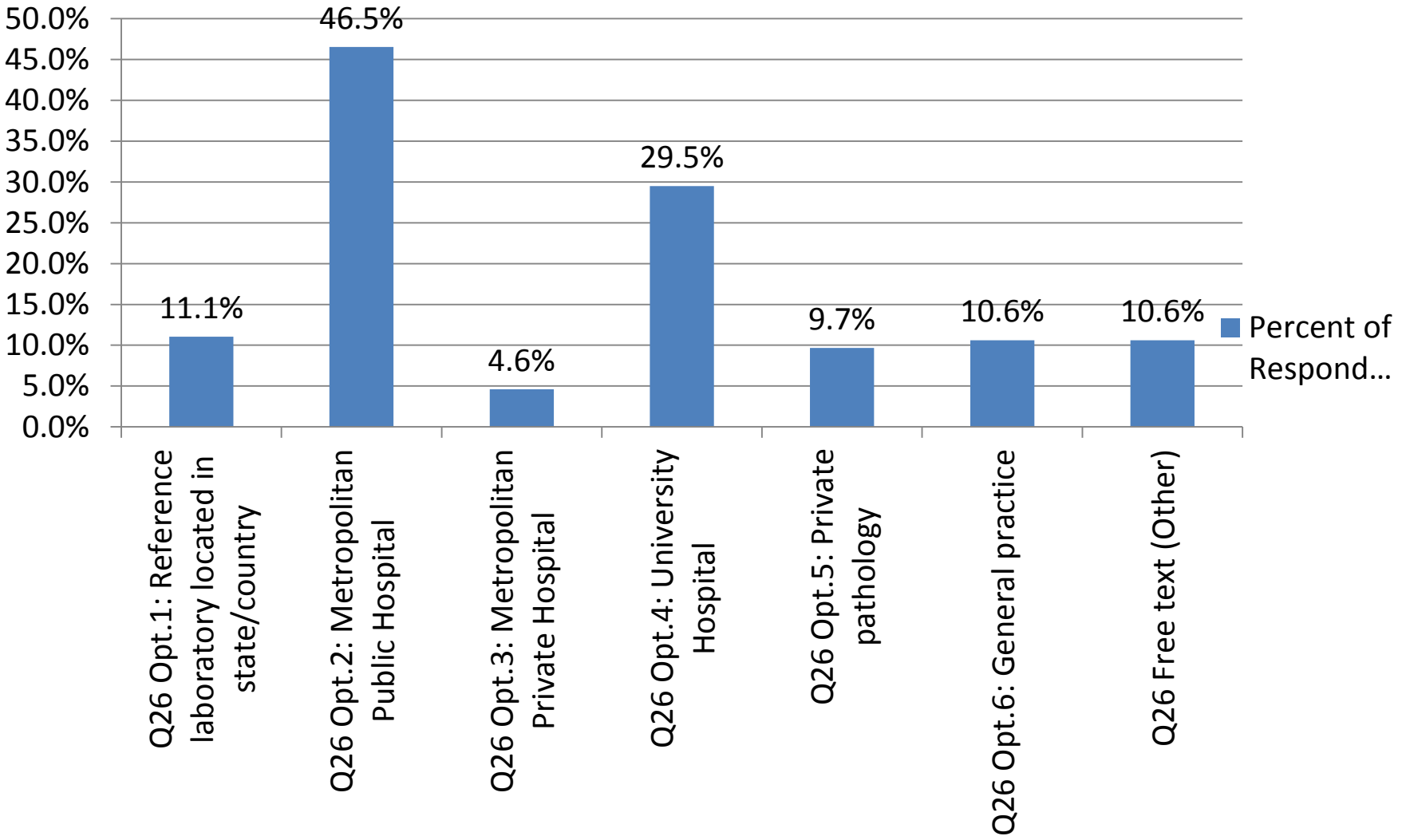
Q25: How do you report a positive kappa or lambda Bence Jones protein in random and/ or 24 hour urine collections? Select all that apply.



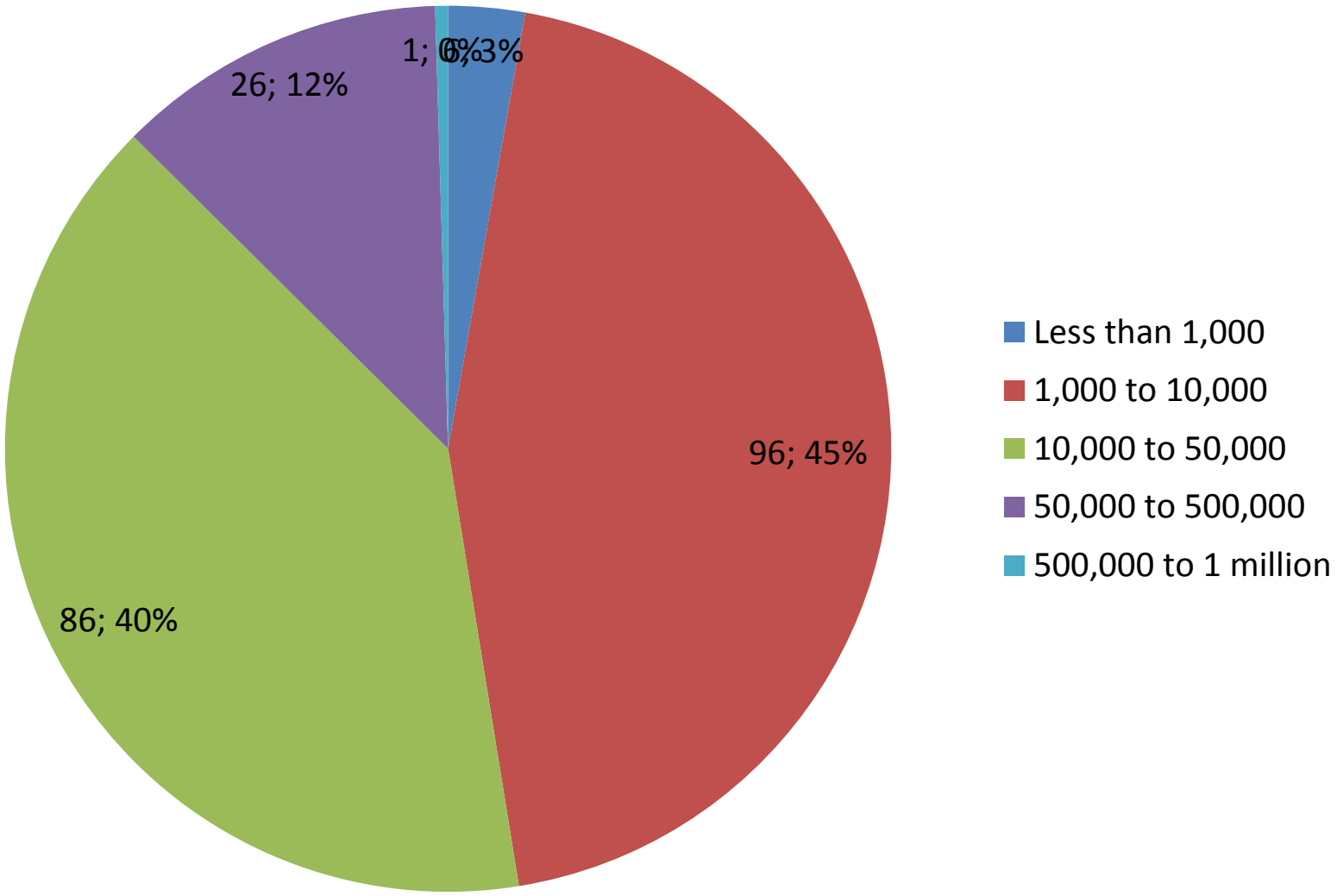
Options	Q25: **How do you report a positive kappa or lambda Bence Jones protein in random and/ or 24 hour urine collections? Select all that apply.**
1	Count of Q25 Opt.1: BJP detected
2	Count of Q25 Opt.2: BJP cannot be quantitated but is present in small or trace amounts on IFE
3	Count of Q25 Opt.3: BJP concentration in mg/L
4	Count of Q25 Opt.4: BJP concentration in mg/dL
5	Count of Q25 Opt.5: BJP concentration in g/L
6	Count of Q25 Opt.6: BJP concentration in g/dL
7	Count of Q25 Opt.7: BJP output in mg/24 h
8	Count of Q25 Opt.8: BJP output in g/24 h
9	Count of Q25 Opt.9: BJP/creatinine ratio in g BJP/mol creatinine (or mg/mmol)
10	Count of Q25 Opt.10: BJP/creatinine ratio in g BJP/g creatinine (or mg/mg)

Options	ITALY	NETHER LANDS	SWEDEN	UK	UNITED STATES OF AMERICA	**AUS/ NZ**	CROATIA	JAPAN	SWITZER LAND	TURKEY	**Grand Total**
1	56	11	8	29	4	**19**	4	3	5	4	**143**
2	8	1	1	6	1	**8**		3		1	**29**
3	6	2	8	3		**5**					**24**
4	5				2						**7**
5	1	9	2	15		**12**			1		**40**
6											
7	15	2	9	1	2	**4**					**33**
8	9	7	2	9	2	**11**			1		**41**
9	1		7	4		**5**			1		**18**
10	1							1			**2**
Other	12	5	1	11	1	**5**	3		2		**40**

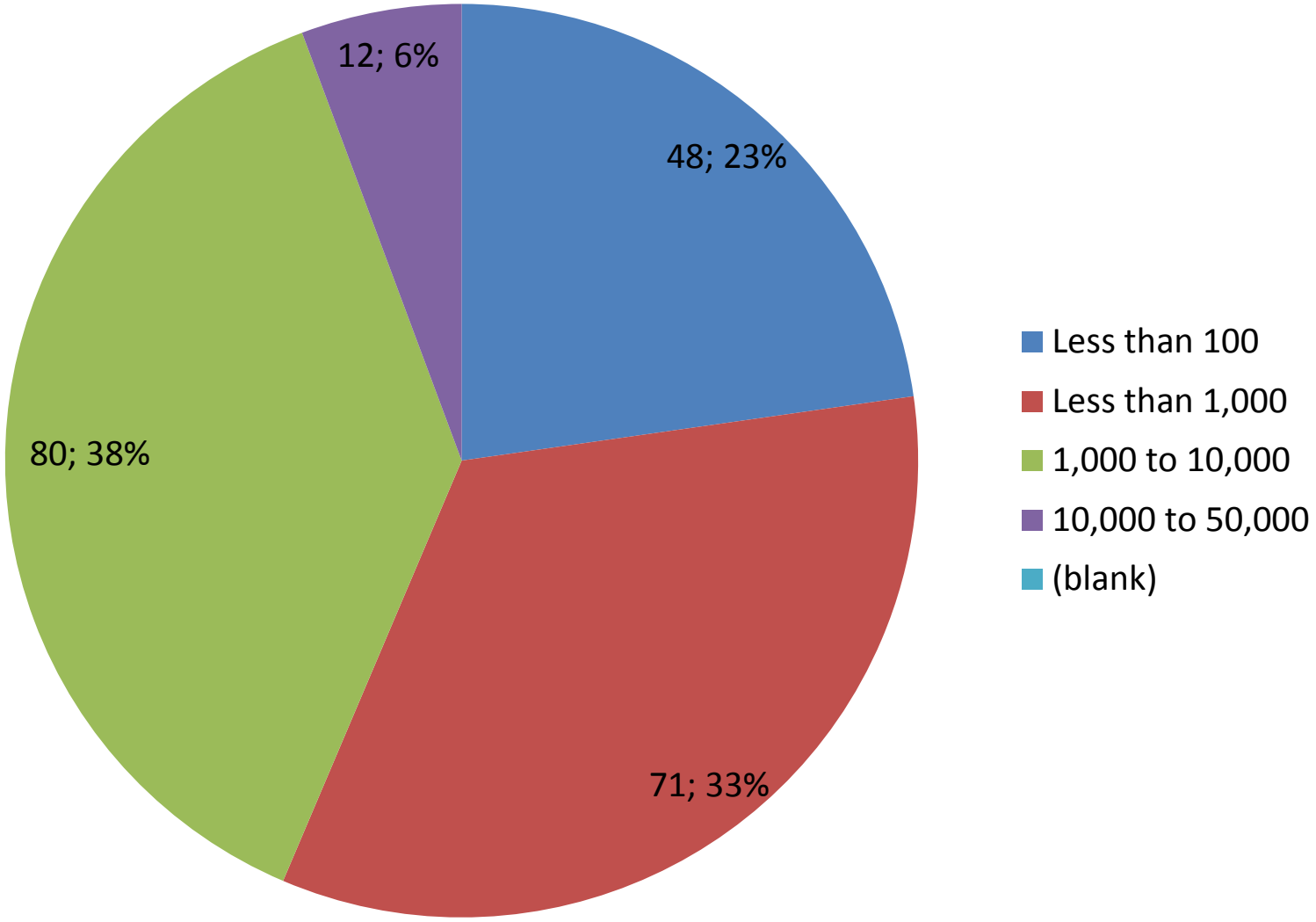
Q26: Please indicate your laboratory affiliations: Select all that apply.



Q28: Please indicate your approximate annual volume of SPEP testing



Q29: Please indicate your approximate annual volume of UPEP testing



Q30: Please indicate your approximate annual volume of SFLC (by immunoassay) testing