2013 CAS ALLIED HEALTH RESEARCH STUDY

Survey of Anesthesiology Chiefs – Final Report

January 2014

Association Resource Centre

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INTRODUCTION

Study Background

- Over the last number of years, there has been an increasing trend toward anesthesiologists and anesthesia assistants working together on patient cases. As the use of anesthesia assistants becomes more common, a number of questions have been raised about the working relationship between the two professions. Views from both sides are needed to paint an accurate picture.

- To address the gap in information, the Canadian Anesthesiologists' Society engaged the Association Resource Centre to conduct surveys of both Chiefs of Anesthesia (Chiefs) and Anesthesia Assistants (AA) from across Canada. The main goals of the project were to:
  - Obtain a "state of the union" with respect to AAs from both professions.
  - Obtain opinions from both professions about how the relationship should work.
  - Obtain opinions from both professions about what resources and support is needed to make the ideal situation work.
  - Compare the information from both professions to identify gaps, agreements and solutions.

- This report presents the results from the Chiefs and Anesthesiology research. Specific research questions addressed by the Chiefs research include:
  - A current profile of the Canadian landscape from a departmental aspect?
  - What is the current state in terms of availability and use of AA's?
  - What training and resources are available to AA's and are these current standards adequate?
  - Is there adequate supervision for AA's?
  - What is the state of compliance with regulations?
  - What funding is required for the AA position and where does it come from?
  - What are the differences between AA's and anesthesiologists in terms of their role?
  - How can the two professions most effectively work together?
  - What is working well and what is not under current conditions?

METHODOLOGY

- To address the research objectives, four different research components were undertaken. These include:
  - In-depth interviews with nine Chiefs of Anesthesiology
  - In-depth interviews with six Anesthesia Assistants
  - A 15 minute survey of 113 Chiefs of Anesthesiology. Chiefs were identified through CAS' member lists.
  - A 15 minute survey of 210 Anesthesia Assistants (AA). AAs were identified through CAS' member list and also through referral sampling where Chiefs and AAs were asked to forward survey invitations to AAs that they knew.

- This study is subject to the following limitations:
  - Ensuring results that are truly representative of the actual population is only possible through true random probability sampling. Given that no comprehensive "list" of AAs or Chiefs is available, random probability sampling was not possible for this study. Accordingly, no estimates of theoretical sampling error can be calculated and the results may or may not be an accurate representation of the total AA and Chief populations. The findings in this report represent the views of the Chiefs who were surveyed.
  - Results for subgroups should be interpreted with caution due to small sample sizes. They are presented and discussed for informational purposes only.
  - Given the small sample sizes among subgroups, the majority of differences between groups should be viewed as qualitative and not necessarily statistically significant.

- Results from the Anesthesia Assistant research are presented under separate cover.

RESPONDENT PROFILE

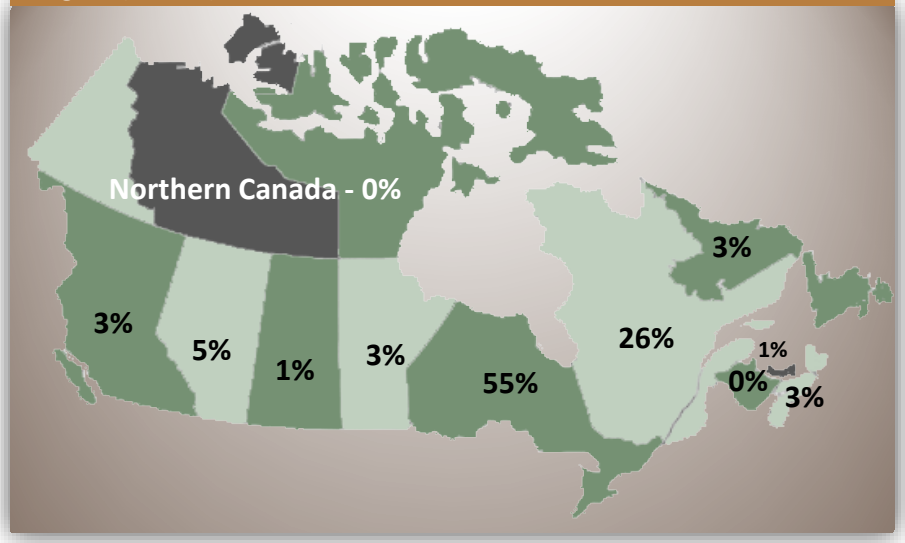
Respondent Profile

- The charts and tables on the following two pages provide an overview of the Chiefs of Anesthesiology (Chiefs) that participated in the survey. As noted in the Introduction, survey respondents were recruited through CAS' member list. Accordingly, findings are only reflective this specific group and may or may not be representative of the overall Chief population in Canada.

- Following are some respondent profile highlights:
  - Accounting for over half (55%) of respondents, Ontario is the most well represented region. Quebec is also very well represented with 26% of participants. Other provinces ranged from no representation to 5%.
  - Respondents were overwhelmingly male (86%).
  - Almost four in five Chiefs (79%) are between the ages of 40 and 59 with an equal split between 40 to 49 and 50 to 59.
  - Not surprisingly, the vast majority (80%) of Chiefs graduated 15 or more years ago. In fact, 46% graduated 30 or more years ago.
  - Chief experience is wide ranging from less than a year as a Chief to over 20 years. The largest group (38%) has been a Chief for 3 to 5 years.
  - Communities of all sizes are well represented. One third (33%) are from communities of less than 50,000 while 39% are from communities with a population of 250,000 or more.
  - Similarly, all sizes of hospitals are also well represented in terms of the number of beds and operating rooms (ORs). The biggest groups are 101 to 300 beds (36%) and three to five ORs (28%) and six to ten ORs (29%).
  - Among Ontario respondents who employ AAs, a small majority (57%) are part of ACT funding.

Respondent Profile (cont'd)

Region (N=113)



Survey Questions

QSC2. In which province do you work?

QH1. Are you…? (gender)

QH2. What is your age?

QH3. In what year did you graduate from medical school?

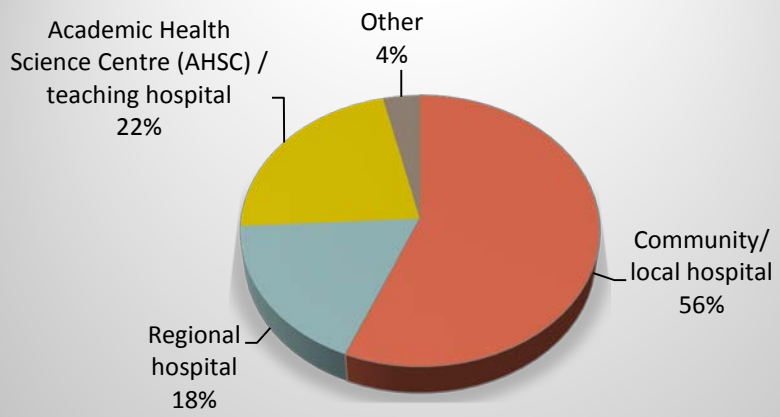
QH4. How long have you been a Chief/Head of the Anesthesiology department?

Respondent Profile

Gender (N=111)	
Male	86%
Female	14%
Age (N=111)	
30 to 39	11%
40 to 49	40%
50 to 59	39%
60 or older	10%
Year of Graduation from Medical School (N=112)	
2009 to 2013	1%
2004 to 2008	6%
1999 to 2003	13%
1994 to 1998	21%
1989 to 1993	13%
1984 to 1988	15%
Before 1984	31%
Number of Years as Chief/Head of Anesthesiology (N=112)	
Less than 1 year	7%
1 to 2 years	14%
3 to 5 years	38%
6 to 10 years	24%
11 to 20 years	12%
More than 20 years	5%

Hospital Profile

Type of Hospital (N=112)



Survey Questions

QG1. Is your hospital…? (type of hospital)

QG2. Which of the following best describes the size on the community in which your hospital is located?

QG3. How many beds does your hospital have?

QG4. How many Operating Rooms does your hospital have?

QA4. Is your hospital part of…? (ACT funding)

Hospital Profile

Community Size (N=112)	
Rural (population of less than 10,000)	9%
Small town (population of 10,000 to 49,999)	24%
Semi-urban (population of 50,000 to 99,999)	16%
Small city (population of 100,000 to 249,999)	12%
Large city (population of 250,000 to 999,999)	20%
Major city (population of 1,000,000 or more)	19%
Number of Beds (N=109)	
1 to 50	17%
51 to 100	17%
101 to 300	36%
301 to 500	19%
More than 500	11%
Number of Operating Rooms (N=112)	
One or Two	16%
Three to Five	28%
Six to Ten	29%
Eleven to Twenty	22%
More than Twenty	5%
Hospital Receives ACT funding (N=28)*	
Phase 1 ACT funding	18%
Phase 2 ACT funding	18%
Both Phase 1 and 2 ACT funding	21%
Not part of ACT funding	43%

**Question asked in Ontario only.*

USE OF ANESTHESIA ASSISTANTS AT HOSPITAL

Use of Anesthesia Assistants at Hospital

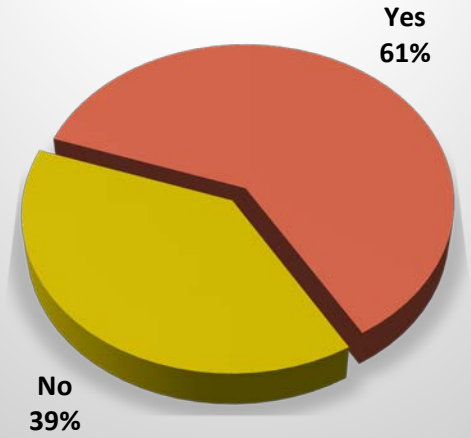
- While common, the use of AAs is not the norm in Canada with only six in ten (61%) Chiefs reporting that their hospital currently employs AAs. Results are presented on the next page. Qualitative differences among subgroups include:
  - AAs far more common in Quebec (90%) than in Ontario (55%) or the rest of Canada (38%). This could in part be because in Quebec, RTs fill the role of AAs.
  - AAs are more common in large and major cities (81%) than in communities with fewer than 250,000 people (48%).
  - AHSC/teaching hospitals are most likely to employ AAs (92%) followed by regional hospitals (80%).
  - Not surprisingly, AAs are more common in larger hospitals (over 100 beds or more than 5 ORs).

- For most who employ AAs, it is not something new at their hospital. Among those who employ AAs, the significant majority (72%) have been doing so for five years or more. In fact, almost half (47%) have employed them for more than ten years. The only subgroup difference worth noting is that Chiefs in Quebec were far more likely than other regions to indicate that they have employed AAs for more than 10 years.

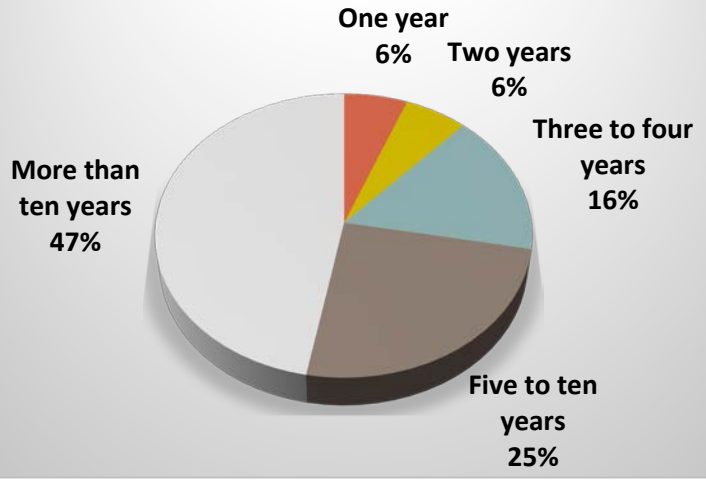
- For the majority of those who do not currently employ AAs, they are not even on the radar. Only 28% indicated that they have seriously considered or discussed employing them while only 2% have actually trialed using AAs. When asked why they don't employ AAs, the top reasons given include:
  - Cost or lack of funding
  - Not enough volume to justify
  - Not big enough
  - No need

USE OF ANESTHESIA ASSISTANTS AT HOSPITAL (CONT'D)

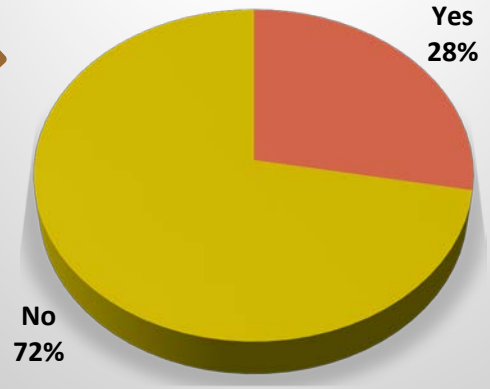
Hospital Currently Employs AAs – *all respondents* (N=113)



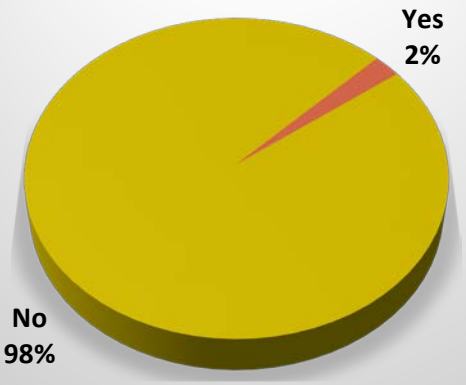
Number of Years Hospital has Employed AAs – *among those employing AAs* (N=68)



Had Discussions or Considered Employing AAs – *among those NOT employing AAs* (N=43)



Trialed the Use of AAs at Hospital – *among those NOT employing AAs* (N=44)



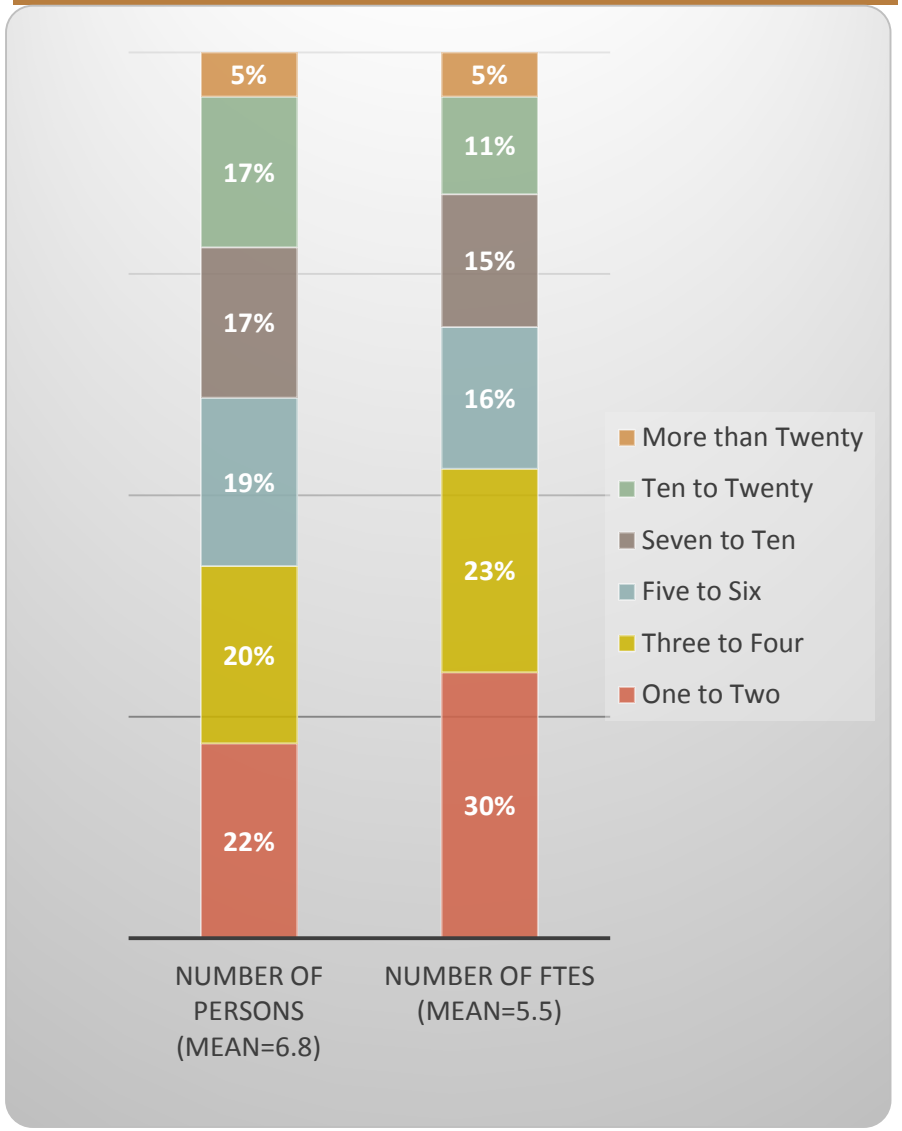
QS1. Are Anesthesia Assistants currently employed at your hospital?
QS5. For how many years has your hospital employed Anesthesia Assistants?
QE2. Has your hospital had discussions or seriously considered employing Anesthesia Assistants?
QE4. Has your hospital trialed the use of Anesthesia Assistants?

Number of AAs Employed at Hospital

- Among those who have AAs, they employ an average of 6.8 persons for 5.5 full-time equivalent (FTE) positions. More specifically, 61% employ six or fewer staff and 69% have six or fewer FTE positions.

- Notable subgroup differences include:
  - The number of AAs employed and FTE positions is by far highest in Quebec.
  - Not surprisingly, the bigger the hospital or the community in which it is located, the more FTE positions and AAs employed.
  - The number of FTE positions and AAs employed is highest in AHSC/teaching hospitals.

Number of AAs Employed – *among those employing AAs* (N=62)

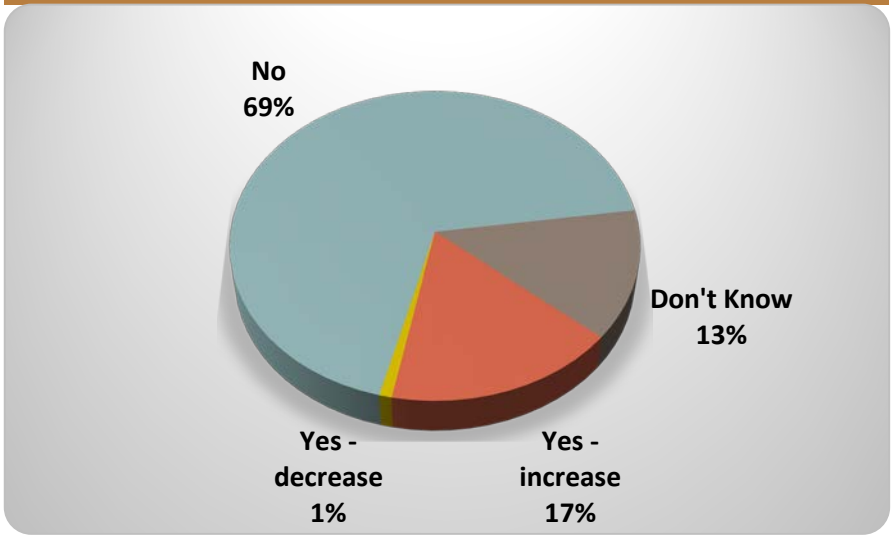


QS2. How many Anesthesia Assistants does your hospital employ?

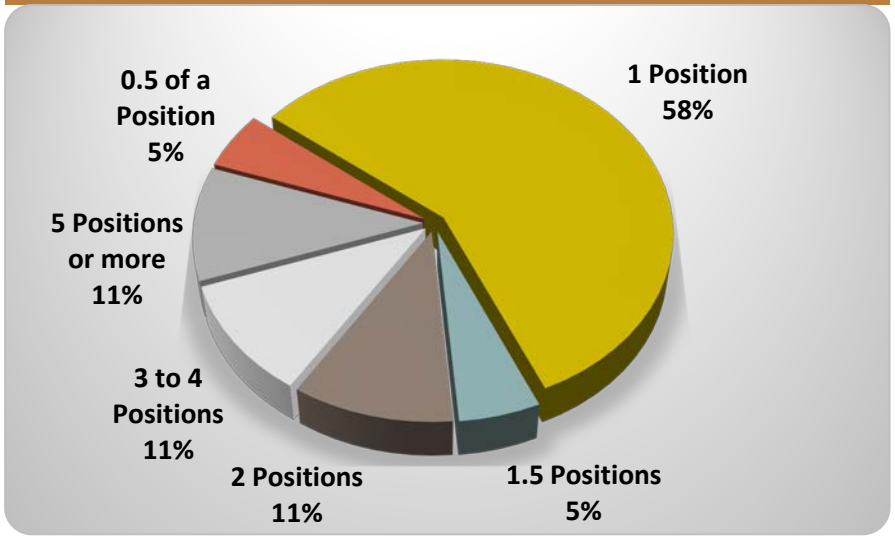
Changes to the No. of Anesthesia Assistants Positions in Coming Year

- The results do not suggest rapid growth in the number of AAs. Only 18% of Chiefs indicated that they are planning a change to the number of AAs in their hospital, almost all of whom are planning increases. The result is not surprising given that 39% don't have (and most have no plans to get) AAs.
- Among those who currently employ AAs, one quarter (25%) plan to increase the number of AAs in the coming year. Only 5% of those who do not currently employ AAs plan to add them in the coming year.
- Among the 17% who plan to increase the number of AAs, 58% are adding one position while a further 22% are adding three or more.
- Differences among subgroups are as follows:
  - Almost one quarter (23%) of Ontario Chiefs plan to add AAs compared to 10% for the rest of the country.
  - The likelihood of adding more AAs is higher in larger hospitals and larger cities.
  - At 48%, AHSC/teaching hospitals are considerably more likely to have plans to add AAs in the coming year.

Changes to Number of AA Positions in Coming Year – *all respondents (N=112)*



Number of Additional Positions – *among those planning an increase* (N=19)



QG5. Does your hospital have plans to increase or decrease the number of Anesthesia Assistants in the coming year? How many additional positions…? How many eliminated positions…?

Coverage Provided by Anesthesia Assistants

- All (100%) of hospitals with AAs have at least some coverage during week days. Almost half (49%) have 24 hour coverage. Not accounting for those with 24 hour coverage, 49% have daytime coverage and 19% have late daytime coverage. Coverage in the evening or night is not common during the week unless there is 24 hour coverage.
- Just over half (52%) of hospitals with AAs have weekend and holiday coverage, almost all of which is 24 hour coverage.
- Almost all Chiefs from Quebec who employ AAs indicated that their hospitals have 24 hour coverage all the time. Conversely, 82% of AA employing hospitals in Ontario have no weekend or holiday coverage and only 15% have 24 hour coverage. For the eight respondents from the rest of Canada that employ AAs, 38% have 24 hour weekday coverage and 63% have no weekend or holiday coverage.
- Differences in other subgroups are largely driven by the regional differences.

Coverage Provided by Anesthesia Assistants – *among those who employ AAs* (N=69)

	Weekdays (Monday to Friday)	Saturday	Sunday	Statutory Holidays
Daytime	49%	1%	1%	1%
Late Daytime	19%	0%	0%	0%
Evening	6%	0%	0%	0%
Night	1%	0%	0%	0%
24 hour coverage*	49%	51%	51%	51%
No coverage	0%	48%	48%	48%

**Those reporting 24 hour coverage are not included in the time of day coverage. In other words, for total daytime coverage, add daytime and 24 hour.*

QS4: What coverage do Anesthesia Assistants provide at your hospital?
Note: Column percentages may add to more than 100% due to multiple responses.

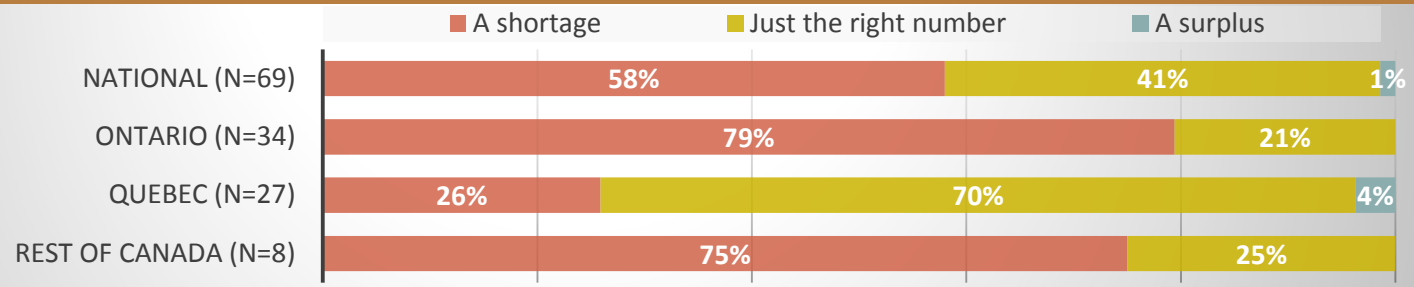
Availability of Anesthesia Assistants

- While at a national level, just over half (58%) of Chiefs feel there is a shortage of AAs, there are considerable regional differences. Only one quarter (26%) of those from Quebec indicated that there is shortage while 70% feel there is the right number. In contrast, four in five (79%) Ontario chiefs and three quarters (75%) of chiefs in the rest of Canada feel there is a shortage. In other words, outside Quebec, there is a clear perception that more AAs are needed. This question was only asked to those who employ AAs.

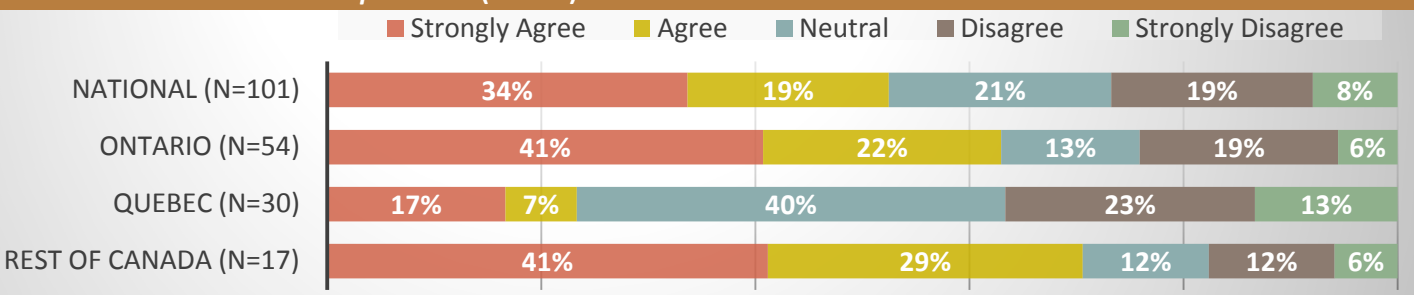
- When asked if they felt their hospital needs (more) AAs, a small majority (53%) agreed while a further 21% were neutral. Not surprisingly, responses by region correspond to the answers to the question about AA shortages. More specifically, respondents in Quebec were far less likely to agree than those in the rest of Canada.

- Chiefs from bigger hospitals and those in bigger communities as well as Chiefs from AHSC/teaching hospitals are more likely to feel there is a shortage of AAs and to agree their hospital needs more AAs.

Current State in Terms of Availability and Use of AAs – *among those employing AAs* (N=69)



My hospital needs more Anesthesia Assistants – *all respondents* (N=101)



QS3. What is the current state in terms of availability and use of Anesthesia Assistants in your hospital?
QF1d. To what extent do you agree with each of the following statements…?

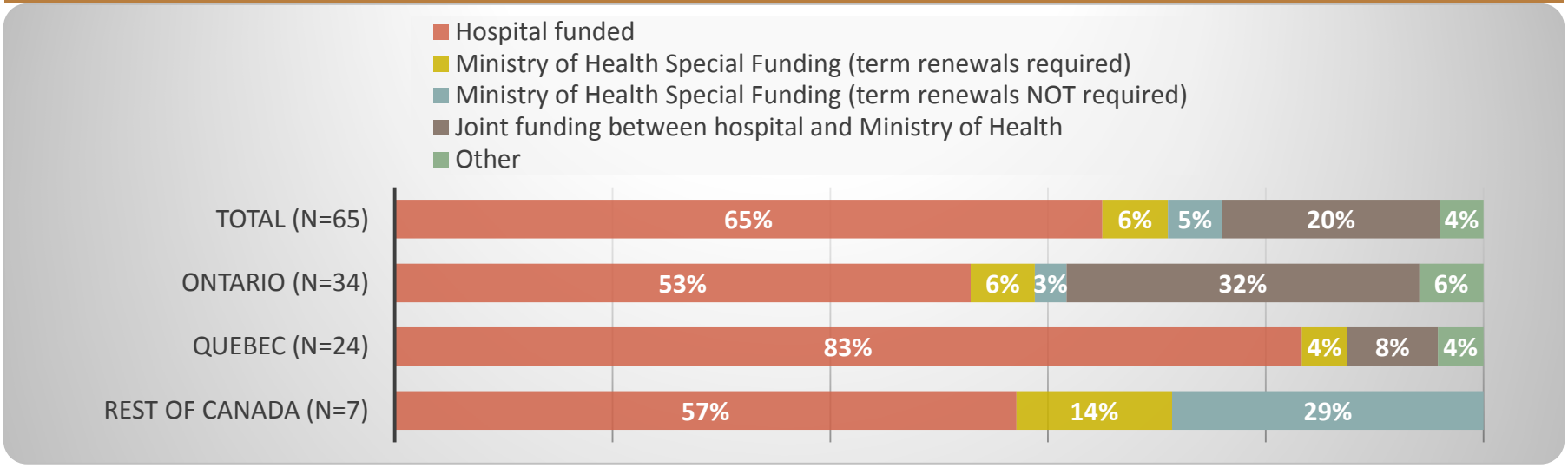
FUNDING OF ANESTHESIA ASSISTANTS SALARIES

How Anesthesia Assistant Salaries are Funded

- By and large, hospitals are part of the funding equation for AAs among respondent hospitals. Nationally, two thirds (65%) of chiefs indicated that their hospital fully funds AA salaries while 20% have a shared hospital and government funding model. In other words, the hospital contributes funding in 85% of hospitals with AAs (among respondents). However, there are some differences among regions. In Quebec, most (83%) are strictly hospital funded while Chiefs in Ontario indicated that only half (53%) are completely hospital funded. Joint funding is most common in Ontario at 32%.

- Smaller hospitals, those in smaller communities and community/local or regional hospitals are more likely to fund AAs on their own and less likely to have a joint hospital-ministry of health funding model.,

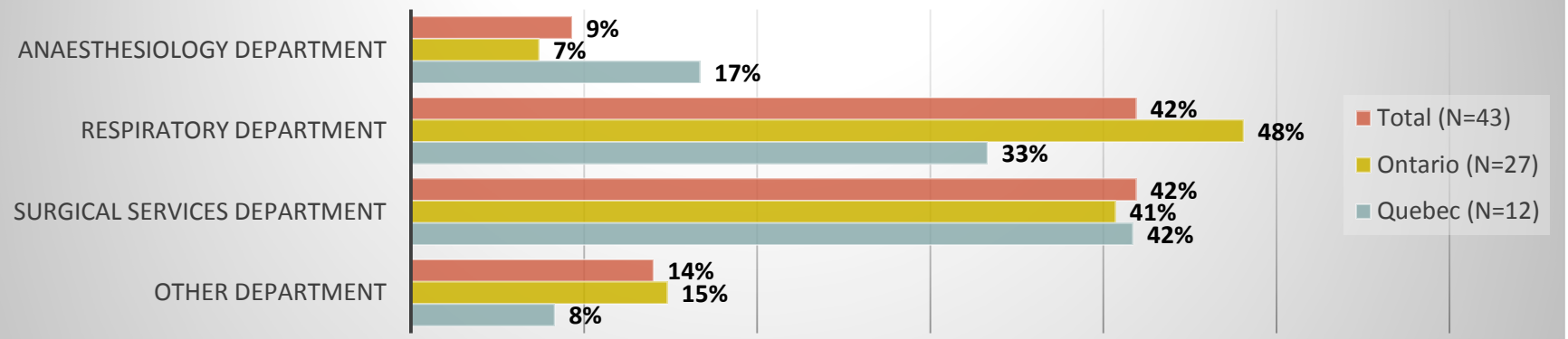
How Anesthesia Assistant Salaries are Funded – *among those employing AAs (*N=65)



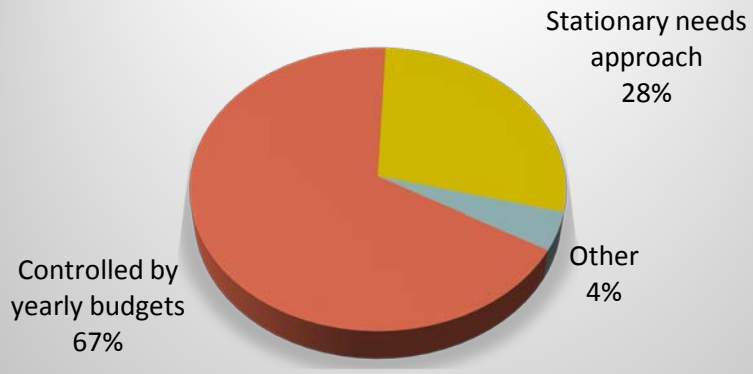
QA1. How are Anesthesia Assistant SALARIES funded in your hospital?

Hospital Funding for AA Salaries

Departmental Budget(s) That Provide Funding for AA Salaries – *among those employing AAs and who use hospital funding (alone or in combination with MOH funding)* (N=43)



How Funding for Anesthesia Assistant Salaries is Controlled – *among those employing AAs and who use hospital funding* (N=46)



- Very few (9%) Chiefs reported that funding for AAs comes from the anesthesiology department. Instead, the common sources of funding are the respiratory department (42%) and surgical services department (42%).
- Regionally, respiratory department funding in more common in Ontario than Quebec. Conversely, respondents from Quebec were more likely to cite the anesthesiology department as a funder.
- Nationally, two-thirds (67%) indicated that AA funding is controlled by yearly budgets compared to only 28% using a stationary needs approach.
- Relevant subgroup differences include:
  - Controlled by yearly budgets is more among respondents from Ontario (74%) compared to Quebec (56%).
  - The stationary needs approach is more common in AHSC/teaching hospitals as well as in larger hospitals.

QA2. Which departmental budget(s) provides the funding for Anesthesia Assistant salaries?
Note: Percentages may add to more than 100% due to multiple responses.
QA3. And is the funding for Anesthesia Assistant salaries…?

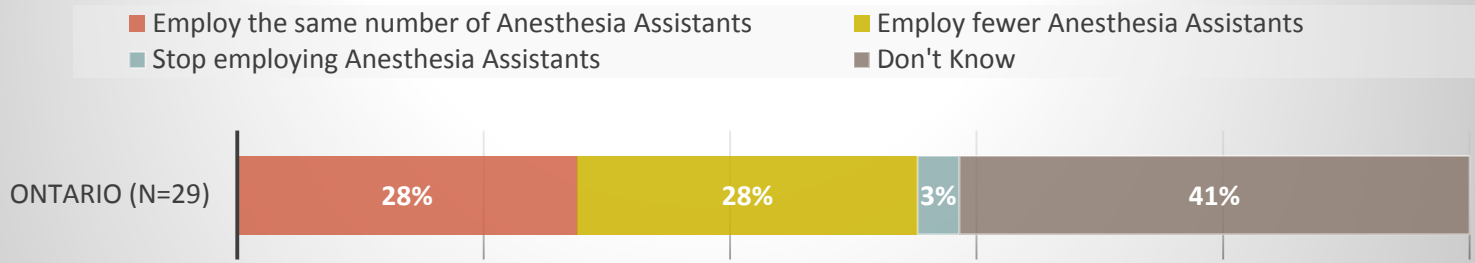
Impact of Funding Cutbacks on Anesthesia Assistants

- Would a decrease in provincial funding decrease the number of employed AAs in hospitals that receive provincial funding? Most likely, but many Chiefs don't know.

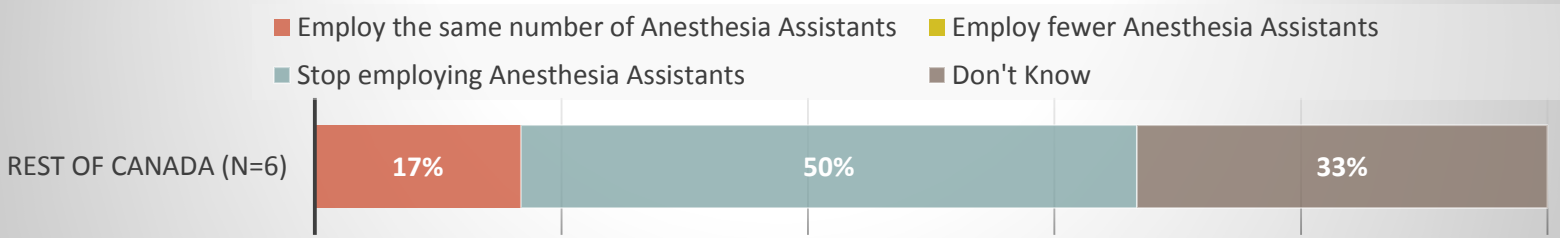
- In Ontario, 41% weren't sure what the impact of not having ACT funding would be. However, based on the responses for those who did know, slightly more (31% vs. 28% that would not change) would decrease or stop employing AAs. Importantly, only 3% outright indicated that they would stop employing AAs. While there is no clear consensus one way or they other, the large portion that don't know does not provide a resounding commitment to keep AAs on in the event of decreased provincial funding.

- Similar results are presented for provincial funding in the rest of Canada for information purposes. Results should be interpreted with caution as only 6 respondents qualified to answer the question.

Cut-backs in ACT Funding – *among Ontario respondents employing AAs and who Receive ACT Funding* (N=29)



Cut-backs in Ministry of Health Funding– *among respondents employing AAs and who use MOH funding, but not ACT funding* (N=6)

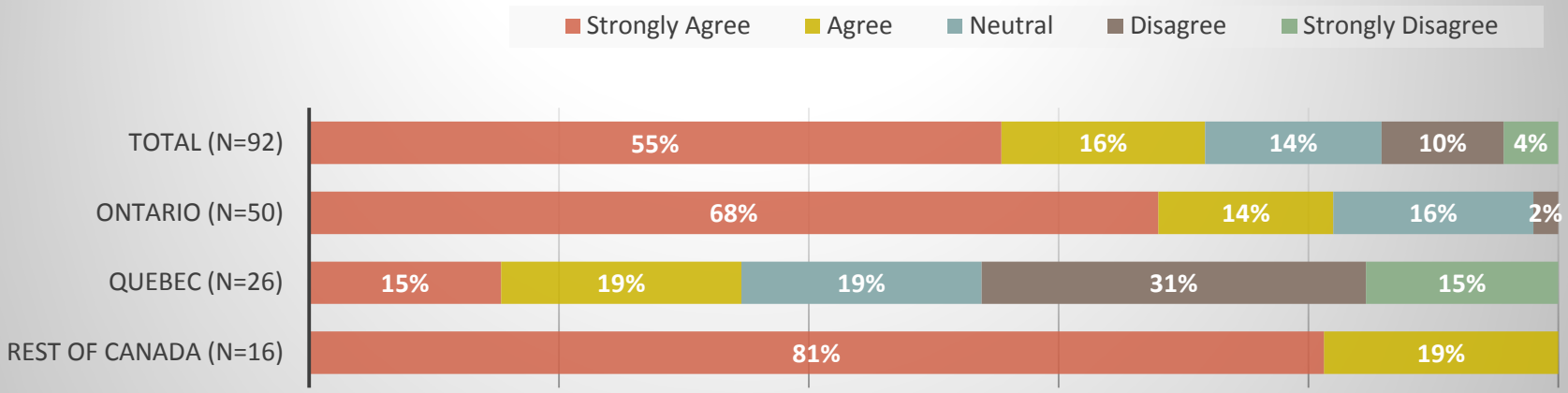


QA5: If Phase 1 or 2 ACT funding is eliminated by the government, will your hospital...?
QA6: If Ministry of Health funding was no longer available, would your hospital...?

Views on Anesthesia Assistants – Funding Support

- Clearly, Chiefs from across the country feel obtaining AA funding is a challenge. More specifically, over half (55%) "strongly" agreed with this statement while a further 16% agreed.
- The feeling that obtaining funding is difficult is fairly consistent among respondents from across the country with the exception of Quebec. Specifically, the majority of respondents from Quebec disagreed (46%) or were neutral (19%) in their opinion.
- Chiefs from larger hospitals, those in larger communities and AHSC/teaching hospitals all more likely to agree that it is difficult to get funding support for AAs.

Views on Anesthesia Assistants – It is difficult to get funding support for Anesthesia Assistants– *all respondents* (N=92)



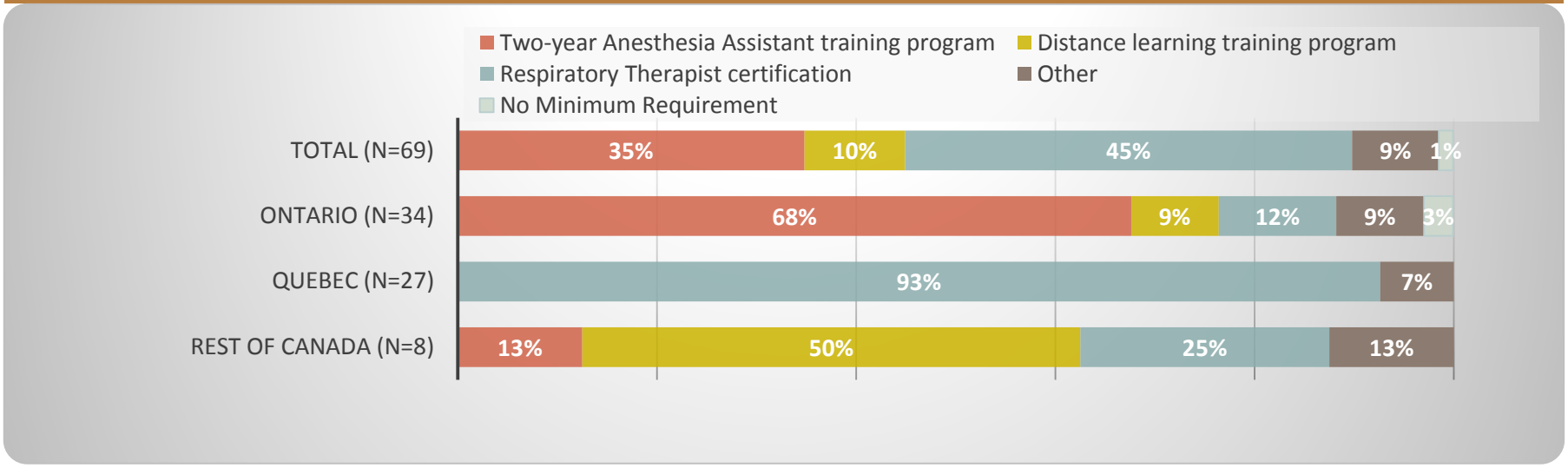
QF1. To what extent do you agree with each of the following statements…?

TRAINING FOR ANESTHESIA ASSISTANTS

Minimum Training Requirement to be Hired as an Anesthesia Assistant

- Minimum training requirements for AAs vary considerably by region. The differences largely reflect the AA structure and training options available in each region.
- *Ontario:* Over two thirds (68%) of Chiefs in Ontario that employ AAs indicated that they require all AAs to have completed a two year AA training program. A small number indicated that they accept distance learning (9%) or RT certification (12%).
- *Quebec:* Given that Quebec does not have a specific AA position and uses RTs to fill the role, it is not surprising that almost all (93%) require RT training and the minimum requirement.
- *Rest of Canada:* Only 8 respondents qualified to answer the question in this group. Accordingly, results are presented for information purposes and should be interpreted with caution.
- Differences in other subgroups are largely driven by the regional differences.

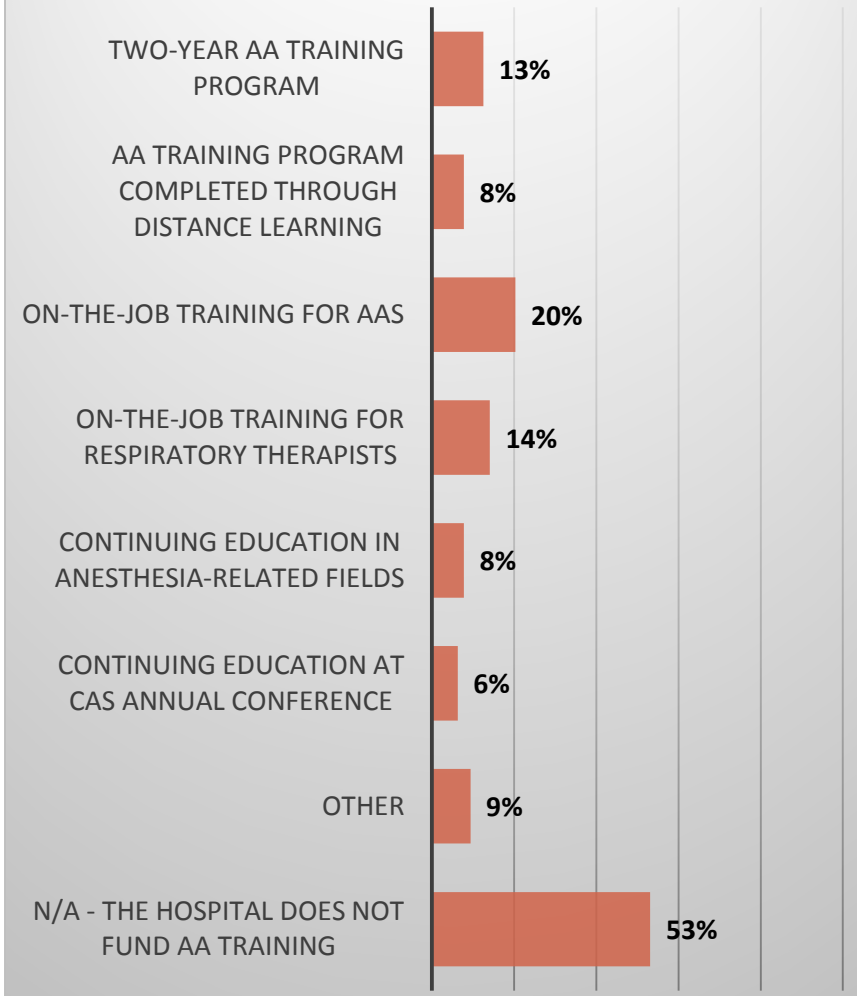
Minimum Training Requirement to be Hired as an AA – *among those employing AAs* (N=69)



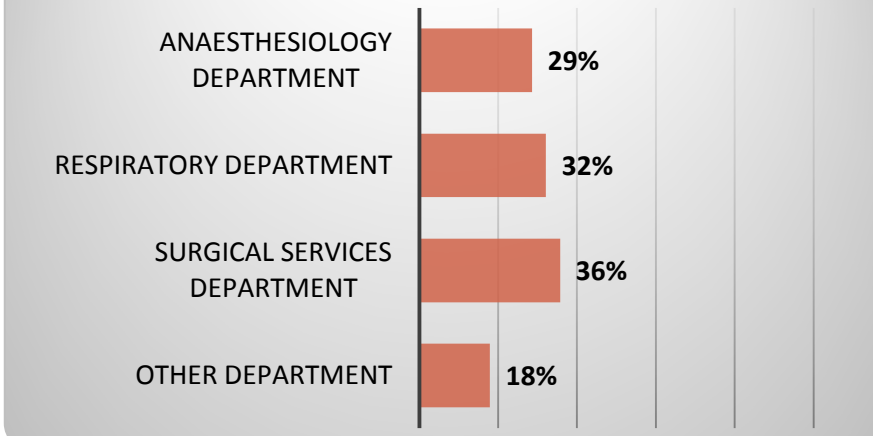
QB1. Is there a minimum requirement for training to be hired as an Anesthesia Assistant at your hospital?

Hospital Funded Training for Anesthesia Assistants

Hospital Funded Training for AAs – *among those employing AAs* (N=64)



Departmental Budget(s) which Provide Funding for Training – *among those employing AAs and whose hospital funds training* (N=29)



- Hospital funded training for AAs is far from the norm in Canada. Only 47% fund any kind of AA training with the most common being on-the-job AA training at 20% (of those that employ them). On-the-job RT training (14%) and two year AA training programs (13%) are close seconds.
- Regionally, respondents from Quebec were less likely to indicate that they fund training (36%).
- Among those who do fund training, there is no one specific department that usually pays. The surgical services team is most common at 36%, but the respiratory (32%) and anesthesiology (29%) departments are not far behind.

QB2: What training, if any, does your hospital fund for Anesthesia Assistants and Anesthesia Assistant candidates?
QB3: Which hospital department budget(s) provides the funding for Anesthesia Assistants TRAINING?
Note: Percentages may add to more than 100% due to multiple responses.

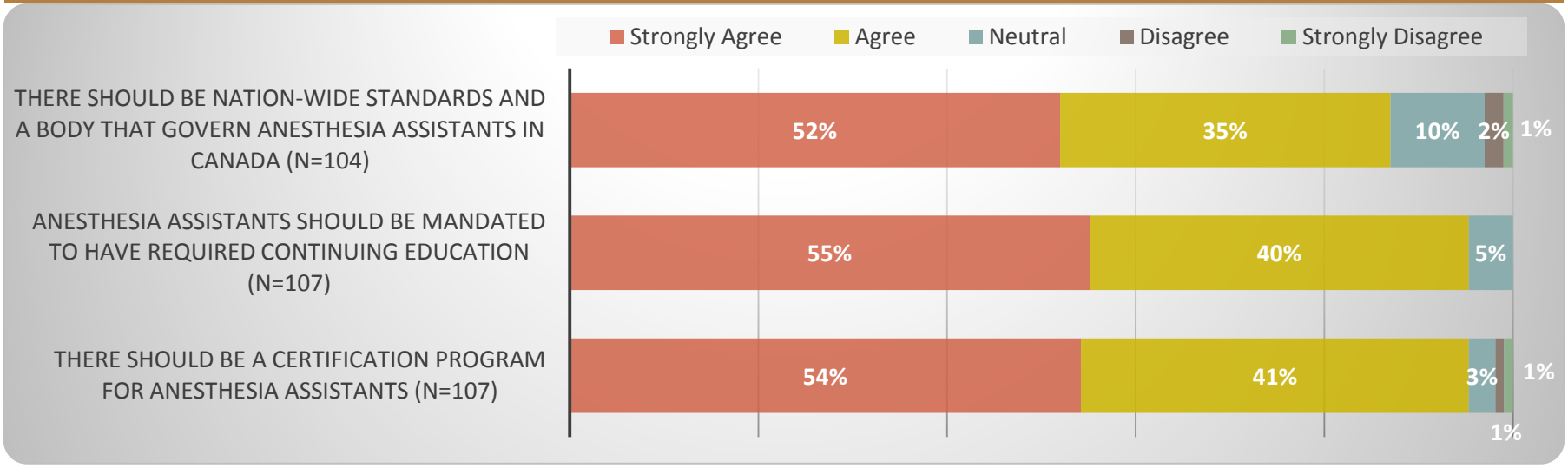
Views on Anesthesia Assistants – Training / Certification

- Chiefs were asked to indicate the extent to which they agree with three statements related to AA training: There should be nation-wide standards and a body that govern Anesthesia Assistants in Canada; Anesthesia Assistants should be mandated to have required Continuing Education; and, There should be a certification program for Anesthesia Assistants. With just over half "strongly" agreeing and 35% to 41% somewhat agreeing with each statement, chiefs clearly feel some changes to the way AAs are educated are needed.

- Relevant qualitative differences among subgroups include:

  - Support for nation-wide standards and a certification program is lowest in Quebec. On the other hand, support for the mandating of CE for AAs is lowest in Ontario.
  - Those who have been a Chief for five years or less are more likely than others to support nation-wide standards and a certification program.
  - Support for all three statements is higher among Chiefs in larger hospitals and larger communities.
  - Chiefs from AHSC/teaching hospitals are more likely to agree that nation-wide standards are needed.

Views on Anesthesia Assistants – Training / Certification – *all respondents*

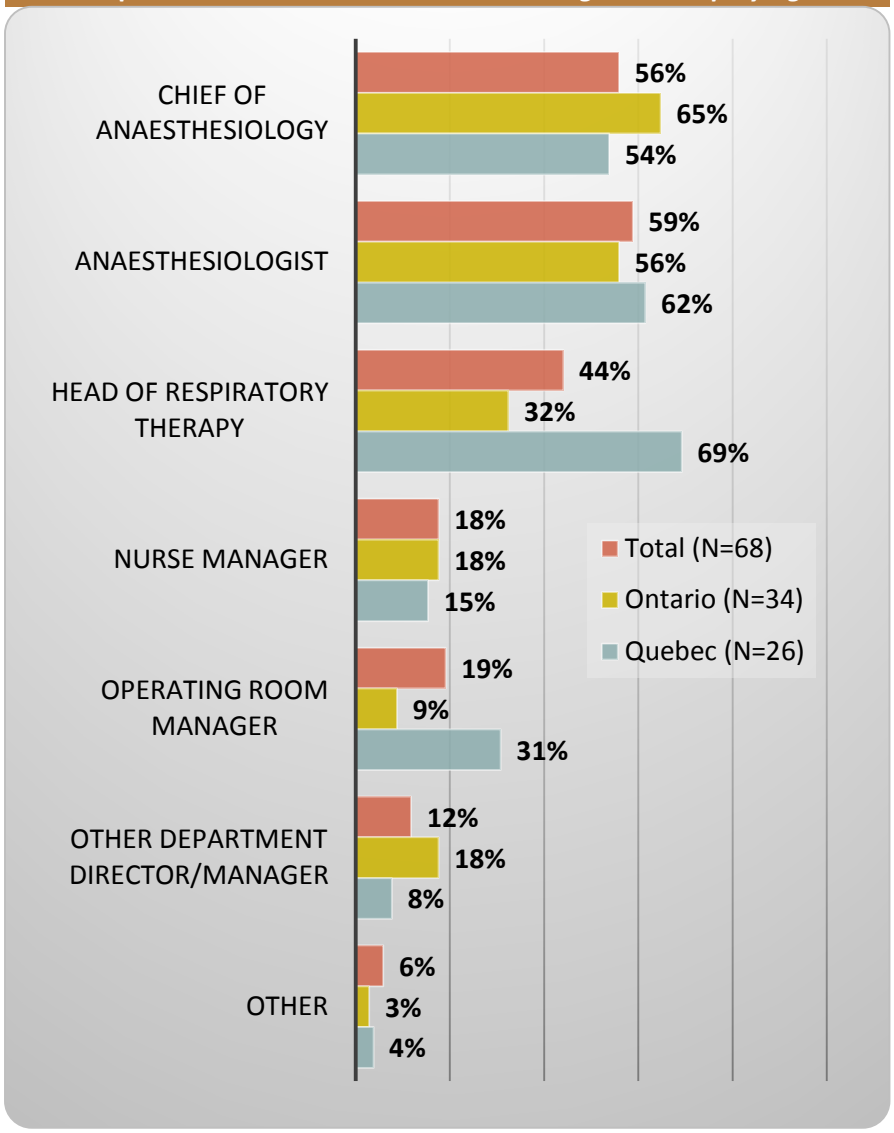


QF1. To what extent do you agree with each of the following statements…?

SUPERVISION OF ANESTHESIA ASSISTANTS

Supervision for Anesthesia Assistants

Who Supervises Anesthesia Assistants– *among those employing AAs*



- Direct supervision of AAs in Canada is primarily shared among three key groups – chiefs of anesthesiology (56%), anesthesiologists (59%) and the head of respiratory therapy (44%). Less than one fifth identified other groups.

- Only Ontario and Quebec had enough responses to be separated out into regional groups. Qualitatively, supervision from the Chief is slightly more common in Ontario while the reverse is true for anesthesiologists. Where the real difference in supervision exists is the head of respiratory therapy. This group is considerably more likely to be a direct supervisor in Quebec (69%) than Ontario (32%). As with other results, this a is reflection of the structure of the AA position in Quebec.

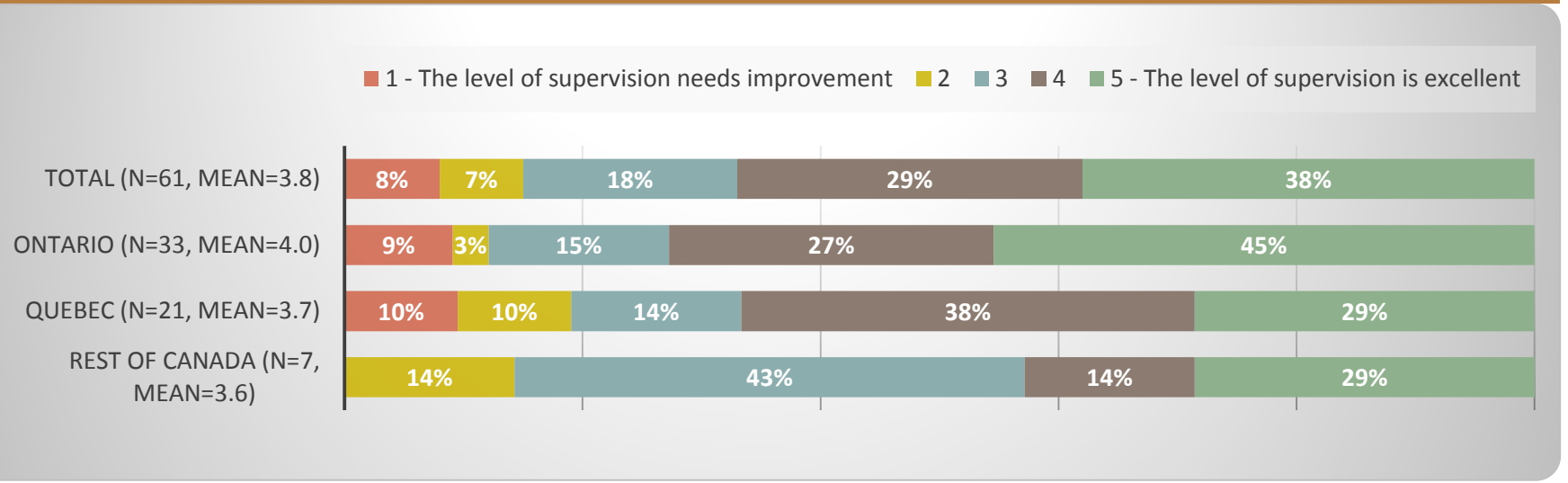
- The only two other notable subgroup differences are:
  - Direct supervision by the Chief of anesthesiology is more common in large cities and hospitals with 6 to 15 ORs.
  - Nurse managers are more likely to be direct supervisors of AAs in communities of less than 250,000 people.

QC1. Who supervises the Anesthesia Assistants in your hospital?
Note: Percentages may add to more than 100% due to multiple responses.

Views Regarding the Supervision of Anesthesia Assistants

- Generally speaking, Chiefs from across the country feel that while there is some room for improvements, the level of supervision for AAs is quite good. Over two thirds (68%) awarded a rating of 4 or 5 out of 5 to the level of supervision for AAs in their hospital. However, it is important to note that a sizable portion (15%) awarded negative ratings indicating that supervision in their hospital is inadequate.
- Interestingly, Chiefs' perception of the adequacy of supervision, while comparable, are slightly lower (qualitatively) than those of AAs.
- Ratings are highest in Ontario where 72% awarding a rating of 4 or 5 out of 5 with 45% giving top marks. With two thirds (67%) giving a 4 or 5 rating, Quebec is not far behind overall, but only 29% gave top marks. Results for the rest of Canada should be interpreted with caution as there were only seven respondents in this group.
- Other relevant subgroup differences worth noting include:
  - Newer Chiefs (5 years or less) awarded lower ratings than their more experienced counterparts.
  - Supervision ratings are higher in smaller hospitals and smaller communities.
  - AHSC/teaching hospital Chiefs awarded lower ratings to supervision than others.

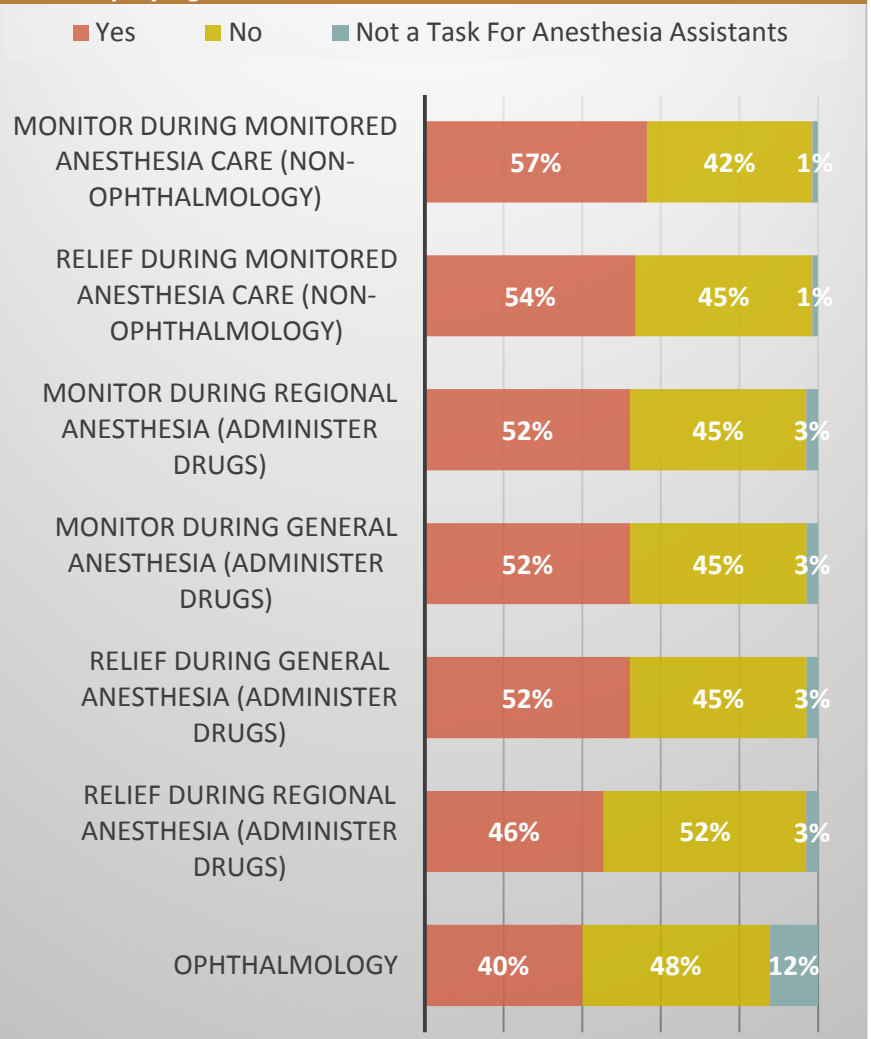
Level of Supervision of Anesthesia Assistants – *among those employing AAs* (N=61)



QC2: Which statement best represents your views regarding the supervision of Anesthesia Assistants at your hospital?

Supervision Needed for Relief and/or Monitoring Tasks

Supervision Needed for Relief and/or Monitoring Tasks – *among those employing AAs*



- All seven of the tasks listed in the survey were by and large identified as a task for AAs. Moreover, with the exception of ophthalmology (12%), 3% of Chiefs or fewer indicated that tasks were not the domain of AAs.
- Interestingly, for five of the seven tasks, the results are almost the same with 52% to 57% indicating they are supervised tasks and 42% to 45% indicating that there are not. The two exceptions where they are more likely to be unsupervised are:
  - Proving relief during regional anesthesia where 52% indicated it is not supervised and 46% supervised.
  - Ophthalmology where 48% identified the task as unsupervised and only 40% indicated it is supervised.
- Regionally, AAs in Quebec are far more likely than those in the rest of Canada to perform all of the tasks unsupervised.
- Supervision of AAs for all tasks tends to be more common in larger hospitals, larger communities and in AHSC/teaching hospitals.

QD3. Are AAs allowed to provide the following relief and/or monitoring tasks without supervision from an Anesthesiologist?

Views on Anesthesia Assistants – Supervision

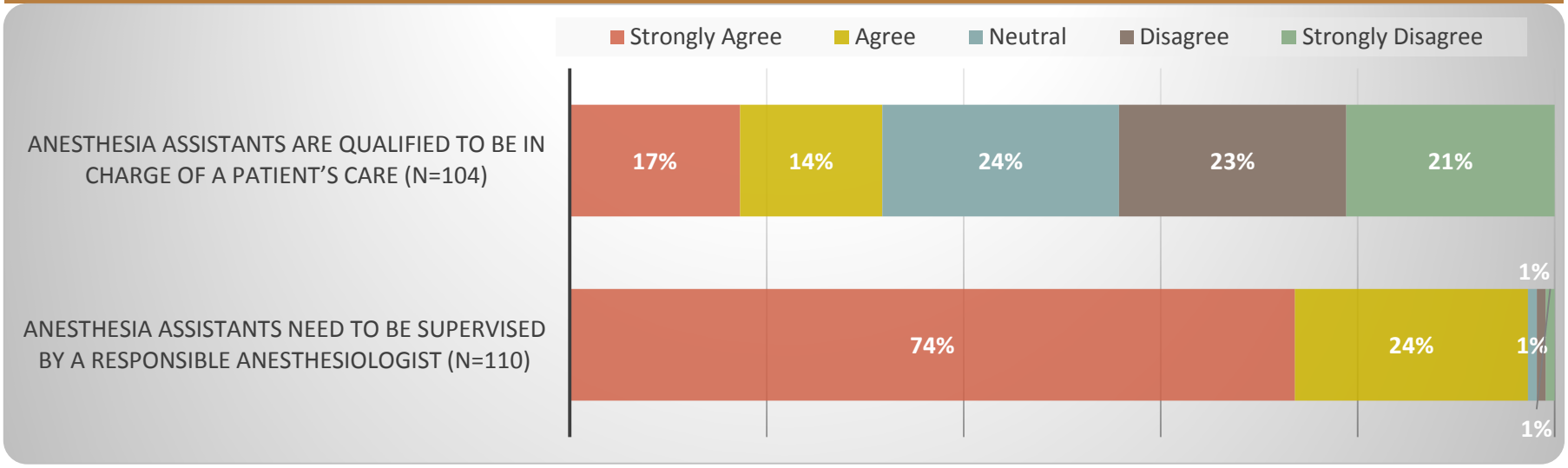
- Chief opinions with respect to supervision are considerably different than those of AAs. While a majority of AAs (68%) agreed that they are qualified to be in charge of a patient's care, Chiefs are not convinced. Less than one third (31%) agreed that AAs are qualified to be responsible for a patient's care while 44% disagreed. While not surprising, it is a considerable gap in perception between the two groups.

- Moreover, supervision of AAs by a responsible anesthesiologist is paramount in the eyes of Chiefs. Almost three quarters (74%) "strongly" agreed that supervision is required while a further 24% "somewhat" agreed. Perceptions are once again considerably different than those of AAs where only 25% strongly agreed and 53% somewhat agreed.

- Subgroup differences are as follows:

  - Chiefs from Ontario a more likely than those in other regions to agree that AAs are qualified to be in charge of a patient's care. Agreement that AAs should be supervised by an anesthesiologist was highest outside of Quebec and Ontario.
  - Chiefs who currently employ AAs were more likely to agree that they should be supervised by an anesthesiologist.
  - Agreement with both statements is higher among Chiefs in communities if more than 250,000 people.
  - Those in smaller hospitals are less likely to agree that supervision from an anesthesiologist is needed.
  - Agreement that AAs are qualified to be in charge of a patient's care is lowest among those in regional hospitals.

Views on Anesthesia Assistants – Supervision – *all respondents*



QF1. To what extent do you agree with each of the following statements…?

ROLE DEFINITION FOR ANESTHESIA ASSISTANTS

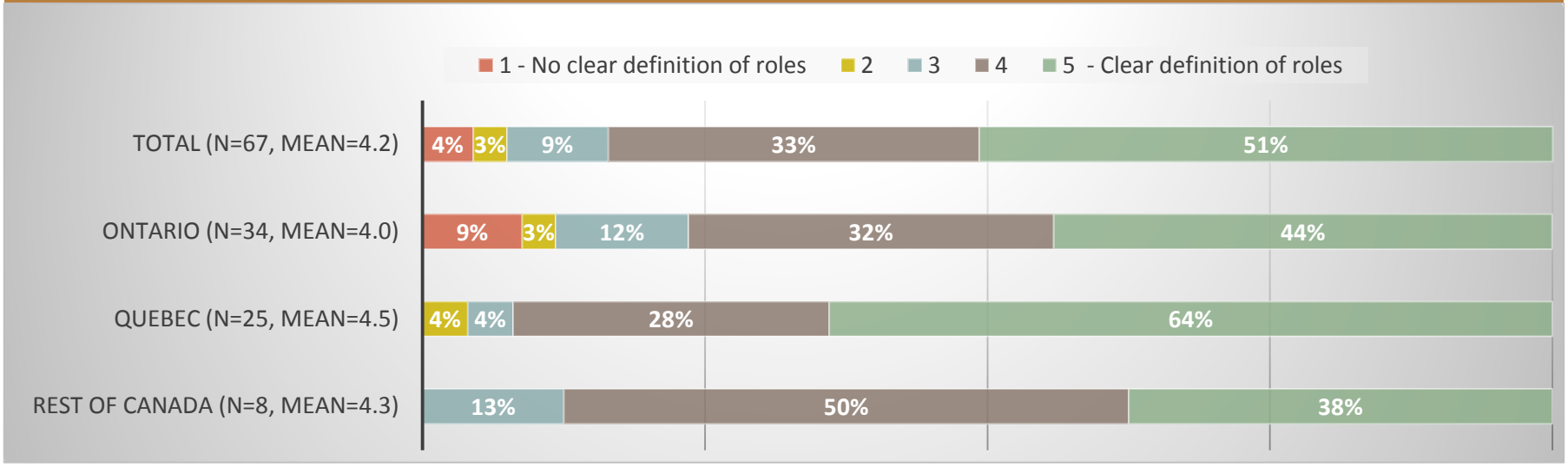
Views Regarding Role Definition for Anesthesiologists and AA's

- On the whole, Chiefs generally feel that there is good role delineation between AAs and anesthesiologists. On a five point scale where 5 equals "clear definition of roles", over half (51%) of Chiefs awarded a 5 to their hospital while a further third (33%) awarded a 4. This is on par with the views of AAs.

- A look at the different regions reveals that role definition is clearest is Quebec where almost all (92%) gave ratings of 4 or 5. While ratings are lower in Ontario, with three-quarters (76%) giving ratings of 4 or 5, role definition is still quite good. Again, results for the rest of Canada are presented for information purposes, but should be interpreted with caution as there were only eight respondents.

- The only other subgroup differences worth noting are that Chiefs in communities of more than 250,000 and older or more experienced Chiefs are more likely to feel there is clear role definition.

Views Regarding Role Definition for Anesthesiologists and AA's



QD1: Which statement best represents your views regarding role definition for Anesthesia Assistants in your hospital?

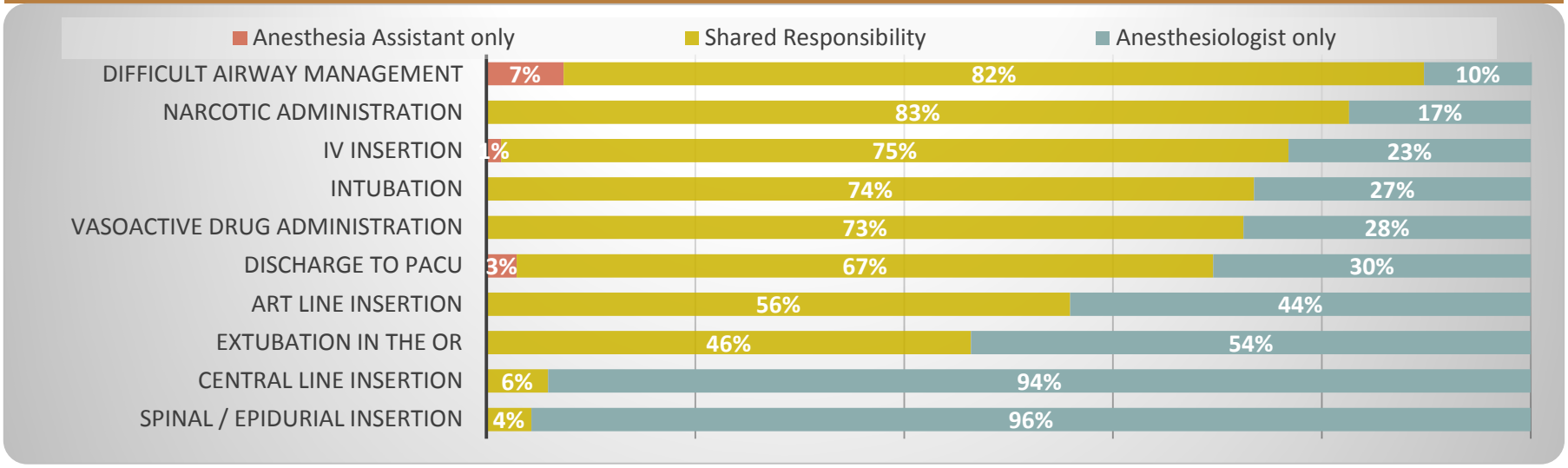
Views Regarding Responsibility for Tasks

- Like AAs, few Chiefs identified any particular task as one that should be the responsibility of AAs only. However, Chiefs are less likely (considerably in most cases) to feel AAs share responsibility for any of the ten tasks. Whereas 87% or more of AAs felt they have some responsibility for eight of the ten tasks, three quarters (75%) or less of Chiefs indicated that AAs have a role in eight of the ten tasks.

- Most Chiefs feel spinal/epidural insertion (96%) and central line insertion (94%) are roles responsibilities for only anesthesiologists. This is far higher than the 74% and 52%, respectively, cited by AAs. Other large discrepancies exist for extrubation in the OR (54% for Chiefs vs. 11% for AAs) and ART line insertion (44% for Chiefs vs. 8% for AAs) where significantly more Chiefs than AAs felt the task is the responsibility of anesthesiologists only.

- At the other end of the spectrum, most Chiefs feel AAs have some responsibility for assisting with difficult airway management (90% say AAs have responsibility) and narcotic administration (83%). For the remaining four tasks, between 70% and 77% of Chiefs feel AAs have some responsibility.

Views Regarding Responsibility for Tasks – *among those employing AAs* (N=68)



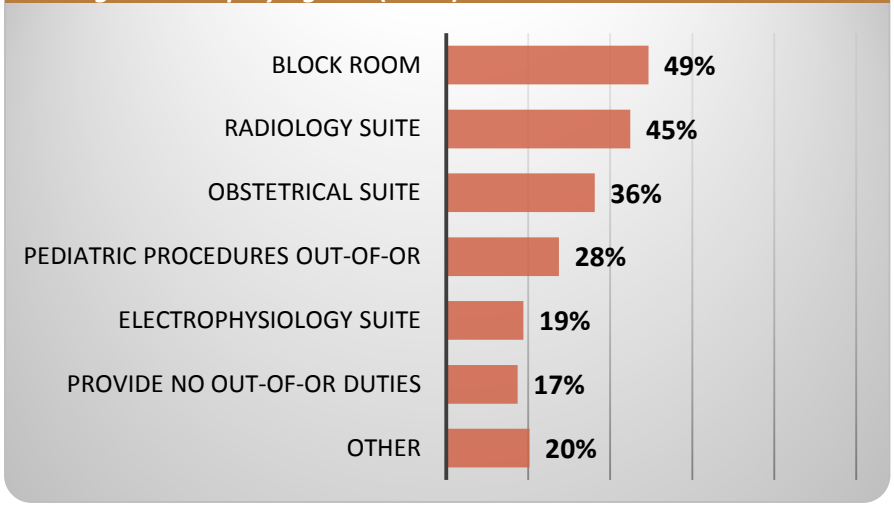
QD2. For each of the following tasks in your hospital, please indicate whether it is done by an Anesthesiologist only, an Anesthesia Assistant only, or whether it is a shared responsibility?

Views Regarding Responsibility for Tasks (cont'd)

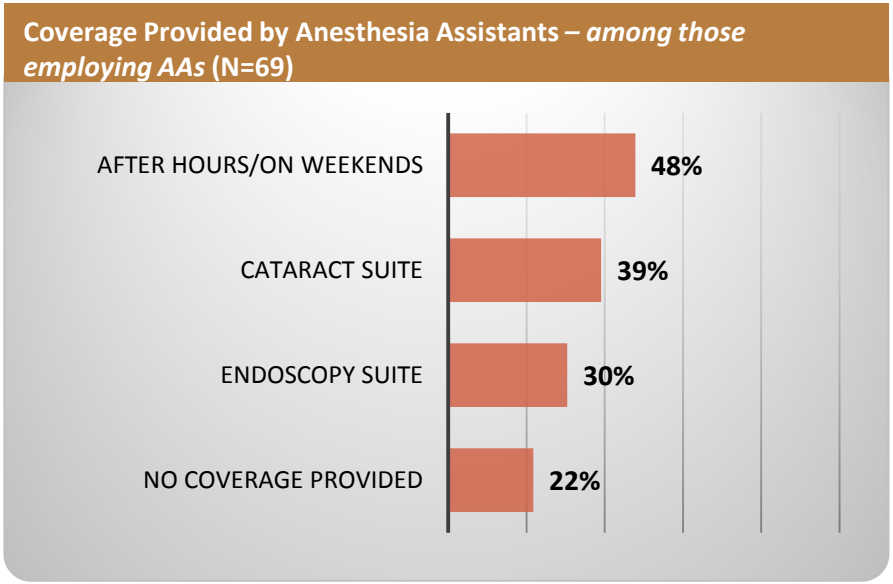
- Following is a summary of differences among the various subgroups:
  - All Chiefs from Quebec identified central line insertion, ART line insertion and spinal / epidural insertion as tasks for the anesthesiologist only. A number of tasks were more likely to be identified as shared outside Quebec including IV Insertion, extubation in the OR and intubation.
  - Chiefs over the age of 50 are more likely to indicate that ART line insertion and IV insertion are shared responsibilities. The reverse is true for narcotic administration.
  - ART line insertion, vasoactive drug administration and narcotic administration are more likely to be identified as shared responsibilities by those who have been a Chief for five years or less.
  - Chiefs from communities of more than 250,000 were more likely than those in smaller communities to indicate that ART line insertion, IV insertion and narcotic administration are shared tasks.
  - ART line insertion and IV insertion are most likely to shared responsibility tasks in AHSC/teaching hospitals. On the other hand, Chiefs from community hospitals are more likely than others to identify discharge to PACU as a shared task.
  - ART line insertion, IV insertion, discharge to PACU, extubation in the OR, intubation and assist with difficult airway management are all tasks more likely to be identified as shared responsibility in larger hospitals.

Coverage Provided by Anesthesia Assistants

Anesthesia Assistants Provide Out-of-Operating Room Duties – *among those employing AAs* (N=69)



Coverage Provided by Anesthesia Assistants – *among those employing AAs* (N=69)



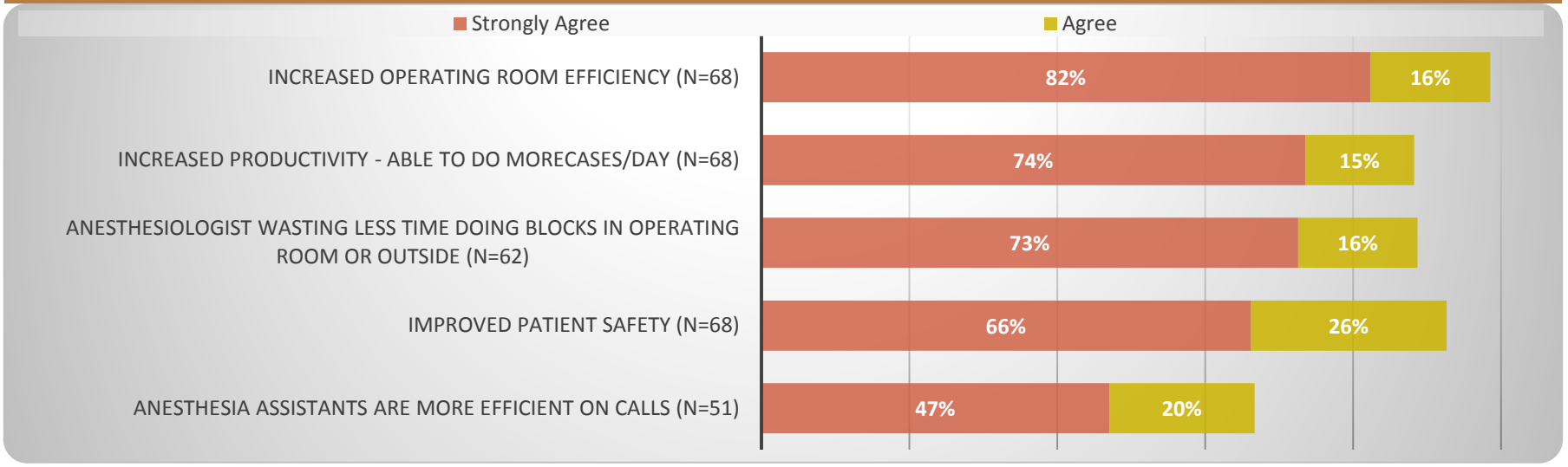
- What duties do AAs perform outside the operating room? Block room (49%) and radiology suite (45%) are by far the most common duties performed according to Chiefs who employ AAs. Obstetrical suite duties (36%) and pediatric procedures outside the OR (28%) are also fairly common but far less so than the top two duties.
- Almost four in five (78%) Chiefs who employ AAs indicated that AAs provide at least some coverage (among the three options tested). Almost half (48%) indicated that there is after hours and/or weekend coverage.
- Only 39% indicated that there is cataract suite coverage while fewer (30%) have coverage for the endoscopy suite.
- Qualitative subgroup differences include:
  - Chiefs in Ontario were more likely to indicate that their AAs provide out of OR duties in the obstetrical suite and radiology suite. Quebec hospitals are more likely to provide AA coverage in general and specifically after hours coverage.
  - Out of OR duties are more common in all categories in bigger hospitals. Similarly, coverage of cataract suite and endoscopy suite is also more common in large hospitals.
  - With the exception of obstetrical suite, out of OR duties are more common in all categories in AHSC/teaching hospitals.
  - Out of OR duties in the radiology suite and block room are more common in communities of more than 250,000 people.

QD4. Do your Anesthesia Assistants provide out-of-OR (out-of-Operating Room) duties?
QD5. Do your Anesthesia Assistants provide coverage in the...?
Note: Percentages may add to more than 100% due to multiple responses.

Views on the Benefits of Employing Anesthesia Assistants

- Like AAs, increased operating room efficiency is viewed as the top benefit of AAs by Chiefs. Four fifths (82%) "strongly" agreed and 16% "somewhat" agreed that this was a benefit.
- With three quarters "strongly" agreeing, increased productivity (74%) and less wasted time by anesthesiologists doing blocks (73%) are also key benefits, followed by improved patient safety at 66%. Interestingly, AAs were more likely to strongly agree than Chiefs that a key benefit of AAs in increased patient safety (75% of AAs strongly agree vs. 66% of Chiefs), though total agreement levels (agree plus strongly agree) are equal.
- AAs being more efficient on calls is least likely to be viewed as a benefit with only two thirds (67%) agreeing.

Views on the Benefits Anesthesia Assistants – *among those employing AAs*



QD6. To what extent do you agree that Anesthesia Assistants lead to…?

Views on the Benefits of Employing Anesthesia Assistants (cont'd)

- Notable subgroup differences include:
  - Chiefs from Quebec are more likely than others to agree that AAs provide improve patient safety. On the other hand, Ontario Chiefs are the most likely to believe AAs provide the benefits of anesthesiologists wasting less time doing blocks in OR or outside and AAs are more efficient on calls.
  - Chiefs with more than fives year's experience are more likely to agree with the benefits of anesthesiologists wasting less time doing blocks in the OR or outside and AAs are more efficient on calls.
  - Agreement that a benefit of AAs is increased productivity and anesthesiologists wasting less time doing blocks in the OR or outside is highest among Chiefs in regional hospitals.
  - Chiefs in bigger communities and hospitals with more than five ORs are more likely to agree that a benefit of AAs is anesthesiologists wasting less time doing blocks in the OR or outside. On the other hand, Chiefs in hospitals with five or fewer ORs agree more strongly that AAs improve patient safety.
  - Increased productivity is more likely to be recognized as a benefit by Chiefs in hospitals with more than 100 beds.

Views on the Challenges of Employing Anesthesia Assistants

- While there are clear benefits, employing AAs is not without challenges. According to Chiefs who employ AAs, two budget related issues top the list of AA-related challenges for the anesthesiology department. Specifically, the top two challenges are difficultly getting funding for new AAs (63% identified as a major challenge) and zero increase budgets (61%).

- Secondary challenges include AAs not working evenings/weekends (45%), the lack of staff to run the OR (40%) and the need for a larger pool of AAs to hire from (31%).

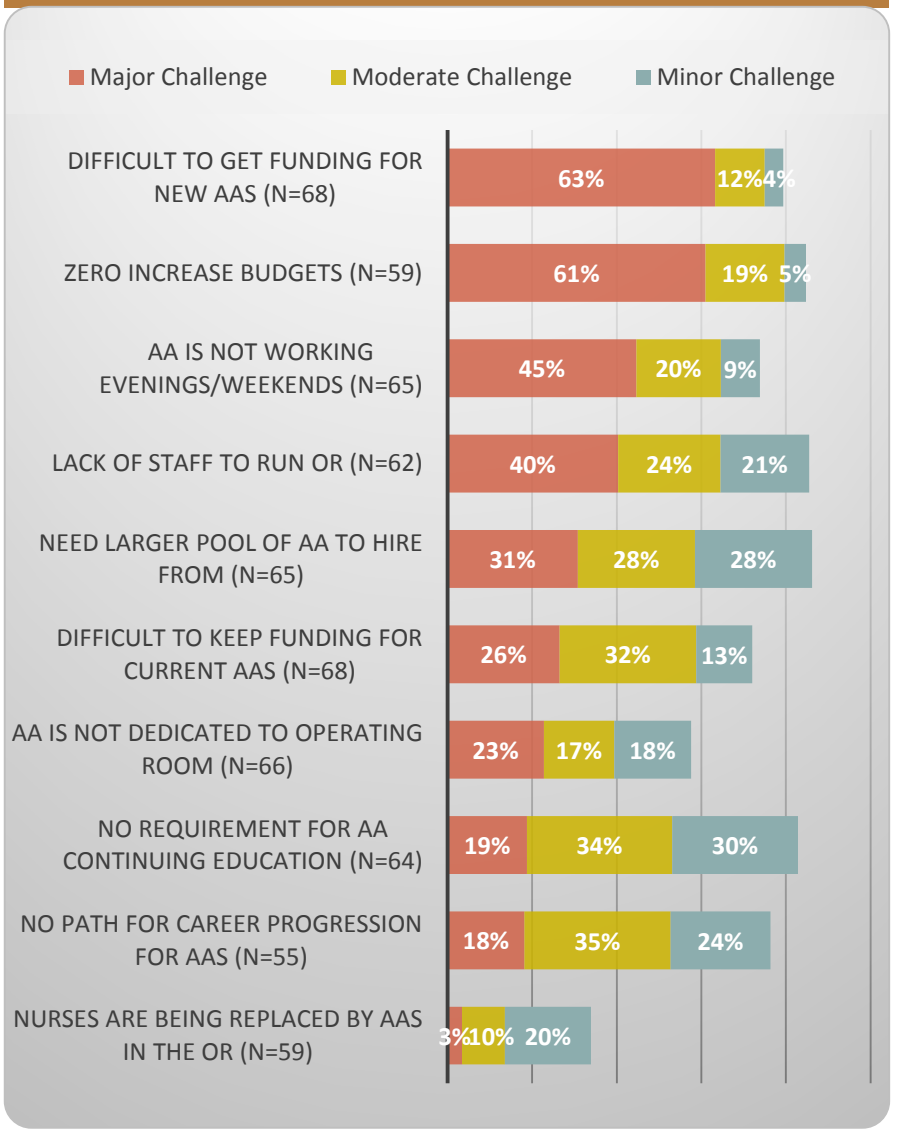
- Nurses being replaced by AAs in the OR is a fairly minor challenge with the majority of Chiefs (67%) indicating it is not a challenge at all.

- The remaining four challenges (difficult to keep funding for current AAs, AA is not dedicated to the OR, no CE requirement for AAs and no path for career progression for AAs) are all seen as modest challenges overall.

- Following are the notable subgroup differences:

  - With the exception of no requirement for AA CE, nurses are being replaced by AAs in the OR and lack of staff to run OR, all challenges were seen as more significant outside of Quebec.
  - All challenges except nurses being replaced by AAs in the OR were rated as a greater challenge by those in bigger hospitals and bigger communities as well as among Chiefs with five or fewer years of experience.
  - Chiefs in AHSC/teaching hospitals tended to rate challenges as more significant than others.

Challenges for Anesthesiology Department – *among those employing AAs*



QD7. How significant a challenge for your anesthesiology department in regards to AAs is…

Views on Anesthesia Assistants – Role

- While Chiefs generally agree that the two professions – Anesthesiologists and AAs – work well together (87% strongly or somewhat agree), they also think defining the role of AAs in terms of where it starts and stops is of upmost importance (92% agree). Addressing the blurring of lines between the professions was identified as an issue in the in-depth interviews.

- Interestingly, 43% agree to some extent (10% strongly) that there is some anxiety among anesthesiologists that AAs will take over their jobs. While not overwhelmingly high, it does point to an area of concern that left unaddressed could lead to a lack of cooperation between the professions or lack of willingness to use AAs.

- Chiefs also agree that AAs provide clear benefits in terms of patient safety, OR efficiency and productivity (81%) and to a lesser extent are an essential part of the surgical team (70%).

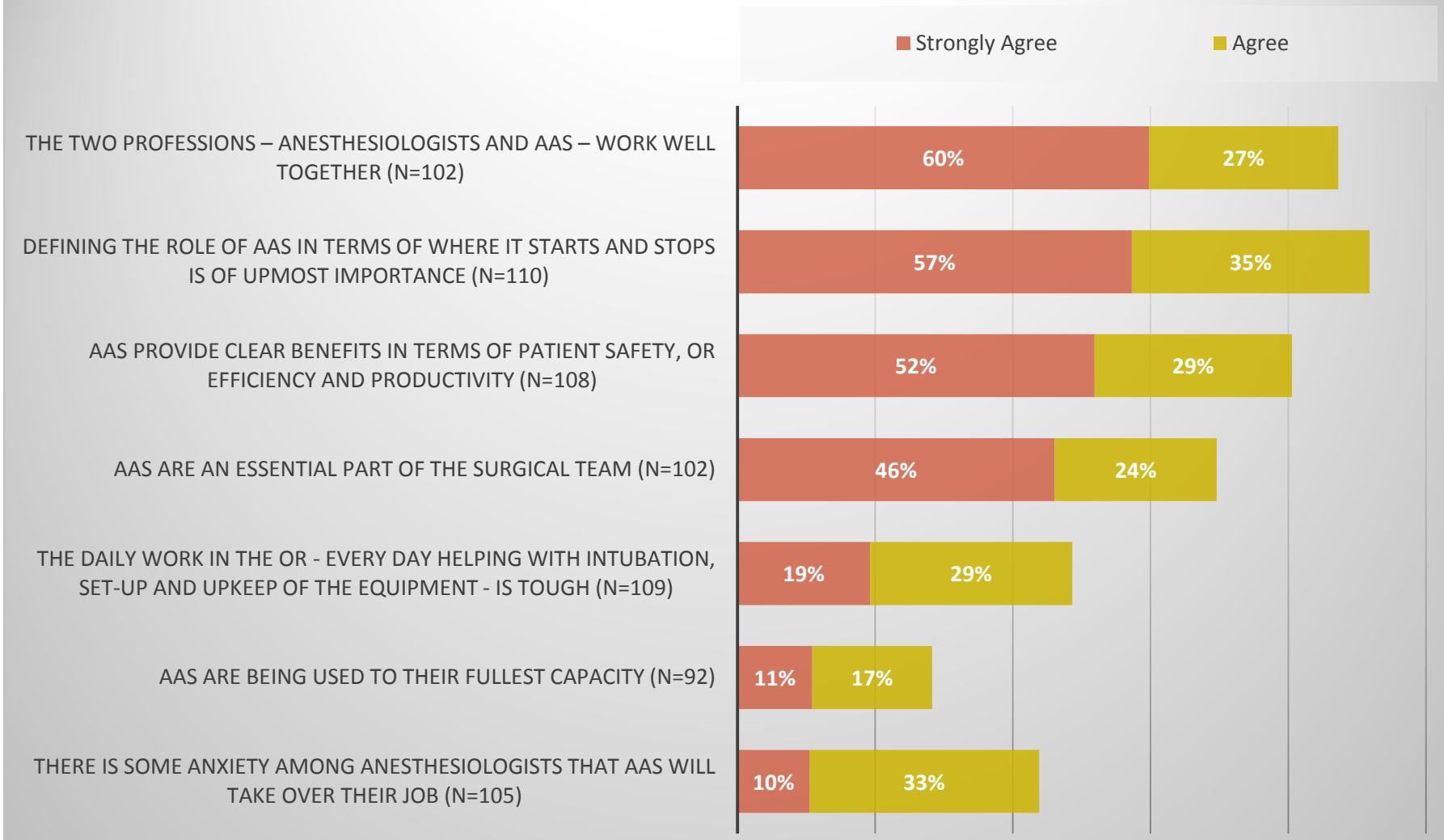
- Interestingly, with only 28% agreeing that AAs are being used to their fullest capacity, Chiefs clearly feel they could make better use of AAs.

- Just under half (48%) of Chiefs agree that the daily work in the OR is tough.

- Following is a summary of qualitative subgroup differences:
  - Agreement is higher in Quebec that the two professions work well together, AAs provide clear benefits in terms of patient safety, OR efficiency and productivity, AAs are being used to their fullest capacity and AAs are an essential part of the surgical team. Conversely, Quebec Chiefs were less likely to agree that the daily work in the OR is tough or that there is some anxiety among anesthesiologists that AAs will take over their job.
  - Those who do not currently employ AAs were less likely to agree with all statements except that there is some anxiety among anesthesiologists that AAs will take over their job, which they were considerably more likely to agree with.
  - Chiefs in bigger hospitals and bigger communities are generally more likely to agree with statements with the exception of AAs being used to their fullest capacity where the reverse is true.
  - Agreement that the two professions work well together and AAs are an essential part of the surgical team is higher in AHSC/teaching hospitals. The reverse is true with respect to AAs being used to their fullest capacity.
  - Defining the role of AAs in terms of where it starts and stops is of upmost importance and there is some anxiety among anesthesiologists that AAs will take over their job both received stronger agreement from Chiefs who have less than five years experience.

Views on Anesthesia Assistants – Role (cont'd)

Views on Anesthesia Assistants – Role

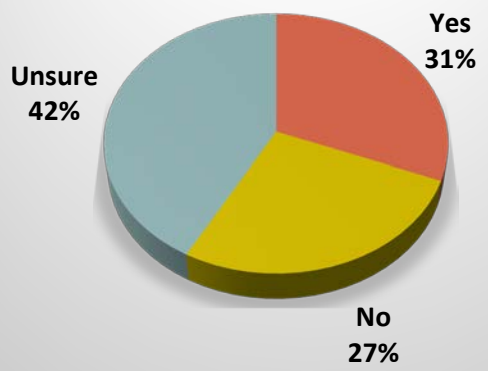


QF1. To what extent do you agree with each of the following statements…?

NO ANESTHESIA ASSISTANTS WORKING IN HOSPITAL

Views on Provision of a Supervisory Fee for the Coverage of AA work (ON)

Development of Mechanism would be Helpful – *among Ontario respondents NOT using AAs* (N=26)



- Chiefs from Ontario who do not currently employ AAs were provided with the following and asked if it would be help in establishing an anesthesia care team in their hospital.

  "There has been discussion of providing a supervisory fee for the coverage of Anesthesia Assistant work in lower volume centres for areas like cataract coverage where an Anesthesia Assistant could cover the cataract sedation while being covered by anesthesia staff who are readily available to deal with problems/issues (i.e., while working in pre-admission, labour and delivery room, block room, etc.)."

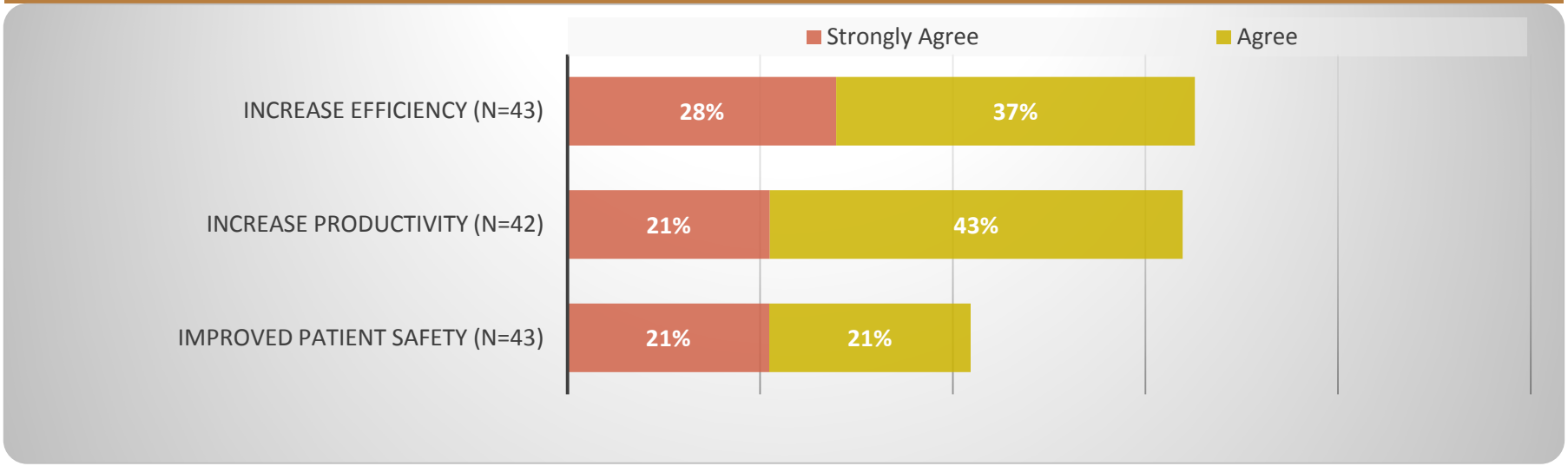
- Results indicate a great deal of uncertainty with 42% answering that they were unsure. Only 31% indicated that it would help in establishing an anesthesia care team.

QE1: Would development of this mechanism be helpful to the establishment of an anesthesia care team at your hospital?

Views on Anesthesia Assistants – Among Non-Users

- Among those who do not currently employ AAs, some, but not all, see the benefits of AAs. Increased efficiency (65%) and increased productivity (64%) are both perceived as benefits of AAs among almost two thirds of non-users.
- Only 42% agree that AAs improve patient safety.

Views on Anesthesia Assistants – *among those NOT using AAs* (N=43)

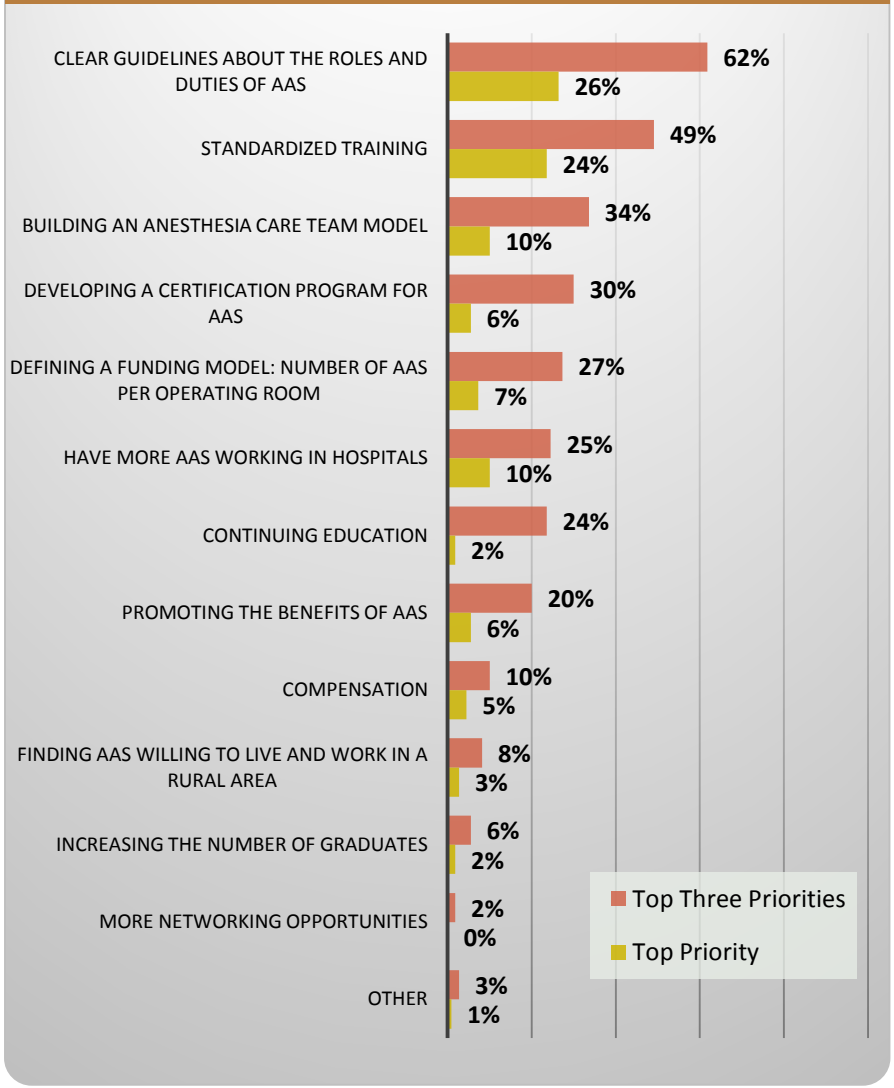


QE5. To what extent do you agree that employing Anesthesia Assistants would…?

PRIORITIES GOING FORWARD

Priorities With Respect to Anesthesia Assistants

Top Priorities with respect to Anesthesia Assistants – *all respondents* (N=110)



- The top priorities with respect to AAs, according to Chiefs, are clear guidelines about the roles and duties of AAs (26% identified as the top priority and 62% as top three) and standardized training (24% and 49%, respectively).
- Rounding out the top five priorities are building an anesthesia care team model (34% identified as top three), developing a certification program for AAs (30%) and defining a funding model: number of AAs per OR (27%).
- Notable subgroup differences include:
  - Defining a funding model: number of AAs per OR and having more AAs working in hospitals are higher priorities for Ontario Chiefs than elsewhere. Continuing education is most likely to be a top three priority for Chiefs in Quebec. Outside of Ontario and Quebec, clear guidelines about the roles and duties of AAs and standardized training are more likely to be priorities.
  - Clear guidelines about the roles and duties of AAs, standardized training, developing a certification program for AAs and defining a funding model: number of AAs per OR are more likely to be among the top three priorities for those who do not currently employ AAs. On the other hand, having more AAs working in hospitals, continuing education and promoting the benefits of AAs were all selected more often by those who do employ AAs.
  - Standardized training is more likely to rank in the top three priorities for Chiefs with five or fewer year's experience while the reverse is true for building an anesthesia care team model.
  - Having more AAs working in hospitals was selected most often by Chiefs in AHSC/teaching hospitals. Those in community/local hospitals were the most likely to select clear guidelines about the roles and duties of AAs.
  - Having more AAs working in hospitals is more likely to be a top three priority in bigger hospitals and bigger communities.

QF2a: In your opinion, what should the top three priorities be related to Anesthesia Assistants going forward?