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Training Evaluation for Introductory Ocean Lifeguard Instruction: A Practical Example from California

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Abstract

Ocean lifeguards have several responsibilities that require precise training. California State Parks is one of the largest providers of open water lifeguard services in the United States, and trains approximately 200 new lifeguards per year. As part of our lifeguard training section's quality improvement efforts, we conducted a training needs assessment to help determine how well our introductory ocean lifeguard training curriculum prepared lifeguards to perform job related tasks upon successful completion of the training program. We surveyed both first year and seasoned lead lifeguards on operational needs, training gaps, and specific subject areas. We identified several areas where our training program required improvement. This assessment provided us with evidence from which to update our curriculum, helped identify gaps in the field, and provided a feedback mechanism from field staff not previously involved in prioritizing training needs.

Keywords: lifeguard, rescue, training, gaps, education

Background

Drowning is a leading cause of unintentional injury death and non-fatal disability that occurs disproportionately in low- and middle-income countries (LMIC) (WHO, 2014). In many high-income nations (HIC), and increasingly in lower resource settings, trained lifeguards are used to prevent drowning in open water (Farmer & Mecrow, 2016; Hossain et al., 2016). Some evidence for lifeguard effectiveness exists (Branche et al., 2001; Fricker & Dix, 2015; Jeong et al., 2016), and a growing number of researchers are engaged in the study of various elements of lifesaving in order to improve the preventative capabilities of those engaged in these activities (Tipton & Wooler, 2016).

In many communities, open water lifeguards are an integral part of the Emergency Medical Services (EMS) system. Open water lifeguard drowning prevention activities have been described in several different regions (Harada et al., 2011; Koon et al., 2018; Morgan & Ozanne-Smith, 2013; Szpilman et al., 2018); however, little has been published on ocean lifeguard training programs and the curricula that prepare people to take on these tasks. Similar to early military training, open water lifeguard training programs were largely developed based on what the previous generation of lifeguards needed to know. Over the years, lifeguard training has grown to incorporate instruction in ocean hazards and conditions, surveillance and preventative lifeguarding, basic and special rescue, underwater search and recovery, radio and tactical communication, first aid (at varying pre-hospital levels), and interacting with beach patrons. Training standards for ocean lifeguards vary widely across the globe although efforts are increasing to encourage uniform education requirements for open water lifeguards at a regional and international level (George & Brongs, 2014).

Open water lifeguard services in the United States are most commonly carried out by city, county, and state governments, usually organized as their own marine safety department or as branches of a fire or parks department. Open water lifeguard agencies, not individual lifeguards, are certified by the United States Lifesaving Association (USLA) under their “Lifeguard Agency Certification Program” (United States Lifesaving Association, 2017). The USLA argues that a rigid national training curriculum would be prohibitively lengthy because open water conditions vary widely across the country instead opting for an established set of minimum standards that lifeguard agencies are encouraged to exceed (United States Lifesaving Association, 2018).

The literature specific to the training of open water lifeguards primarily relates to occupational and physical fitness standards of beach lifeguards (Reilly et al., 2005; Tipton & Byatt, 2016; Tipton et al., 2008), vigilance and visual surveillance (Fenner, 1999; Page et al., 2011; Smith, 2016), aspects of first aid and resuscitation pertinent to beach lifeguarding (Bierens, 2016; Kiszka et al., 2018; Moran & Sempstrott, 2016; Moran & Webber, 2012, 2014; Queiroga et al., 2014), acute stress management during emergency response (Pia, 2014), and, more recently, the decision making factors of lifeguards undertaking rescue activities (Szpilman et al., 2018). A scientific review of studies published within the scope of lifeguard training and standards development was conducted by the United States Lifeguard Standards Coalition in 2011 and included a far-reaching literature review of several different disciplines that supported evidence-based guideline statements. While this work has undoubtedly informed various aspects of lifeguard training program and curriculum development, it included very little information on actual training processes and methods (only one section on online learning) and nothing on lifeguard training evaluation or quality improvement. We found only one study from Korea that examined the relationship between socio-demographic factors and educational satisfaction among lifeguards (Kim et al., 2004).

Training needs assessments and evaluations commonly exist as components of an organization’s quality improvement practice, and are common in business, education, and government (Goldstein & Ford, 2002). These methodologies have also been employed in fields that more closely resemble that of ocean lifeguarding such as nursing (Gould et al., 2004), Emergency Medical Services (Fleischman et al., 2011), disaster relief work (Paton, 1994), and law enforcement (Brand & Peak, 1995; Hur, 2017). As a cyclical process that contributes to an overall training strategy (Furze & Pearcey, 1999), these methods involve organized consultation to identify learning needs and find gaps in employee skills and knowledge (Pedder, 1998).

While some open water lifeguard agencies may be using variations of these methodologies internally to improve their programs, to our knowledge no lifeguard training needs analysis or evaluation has been published. In open water lifesaving, standards and training curriculums are typically revised due to advances in knowledge, technology, equipment, and regulations (Ming Kirk Tan, 2014). Additionally, lifeguard training priorities may change due to role expansion, changing expectations of the public, litigation, or specific events. For example, in recent years some Californian open water lifeguard agencies have added or increased training components on beach driving, sand entrapment, bleeding control specific to shark attack, and tactical emergency medical procedures relevant for a mass shooting type incident. Training needs are typically communicated to the training staff by higher level lifeguard supervisors and managers. Rarely are training needs identified through systematic collection of perspectives or ideas from staff lifeguards further down in the command structure.

Training is an absolute requirement for lifeguards; tasks of the job demand competency, and subpar performance have potentially drastic consequences. This assessment was designed as an element of our training section's quality improvement effort to help determine how well our introductory ocean lifeguard training curriculum prepared lifeguards to perform job related tasks upon successful completion of the training program. Our primary aims were to 1) survey educational and field experiences of rookie (first season) lifeguards, 2) identify gaps in our current introductory lifeguard training program, and 3) classify, assess, and prioritize the actual introductory educational needs of California State Parks (CSP) ocean lifeguards. It was our hope that by including a broader range of input into the training curriculum, this work would guide future training and evaluations, continually improving our standard of service.

Although the original intent of this work was specific to our department and these findings directly relate only to our lifeguard service, it is our hope that others in the open water lifesaving field may learn from our evaluative model, and use/improve our assessment tools. Lifeguards often debrief individual actions and specific incidents after they happen, but retrospectively examining instruction is not yet common practice in the profession. By sharing this work, we encourage other open water lifesaving bodies to consider engaging in strategic evaluation of their training programs and other aspects of their operation. To the best of our knowledge, this is the first training needs assessment published specific to the profession of ocean lifeguards.

Method

This mixed method training needs assessment consists of a descriptive cross-sectional survey of two groups, rookie and lead lifeguards, who were employed as CSP lifeguards in September and October of 2017.

Lifeguard Service and Training Program

CSP consists of 281 park units that include over 300 miles of ocean coast, and over 600 miles of inland lake and reservoir waterfront. The department employs approximately 1,000 seasonal and 70 full time lifeguards that work in the widest variety of environments for a single lifeguard department. CSP lifeguards work in population dense urban beaches in Southern California (Picture 1), and the extreme remote and rugged north coast in Sonoma, Mendocino, and Humboldt counties (Picture 2). Additionally, CSP lifeguards work at inland lakes popular for swimming and boating (Picture 3), and historical sites with swimming pools (Picture 4).

Photograph 1

Torrey Pines State Beach, San Diego County



Photograph 2

Goat Rock State Beach, Sonoma County



Photograph 2

Folsom Lake, Sacramento County



Photograph 3

Neptune Pool, Hearst Castle, San Luis Obispo County



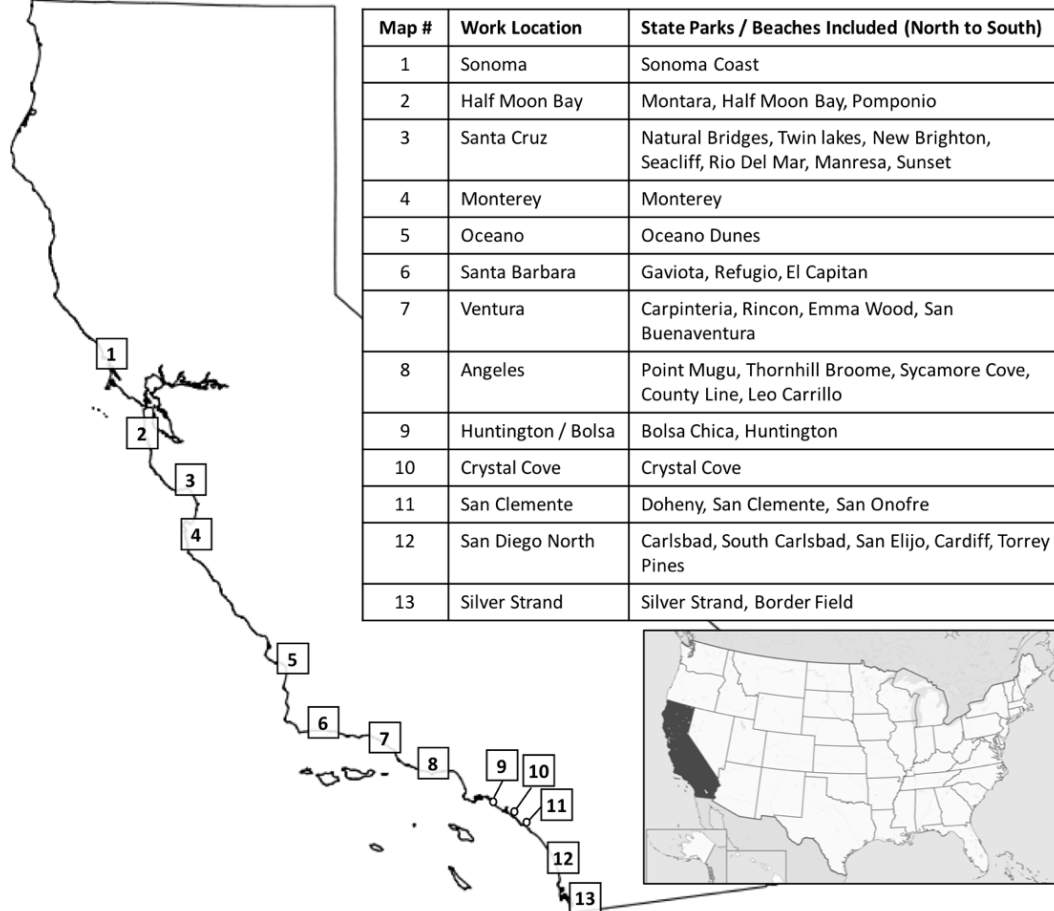
In the 1950's and 1960's, CSP lifeguard training varied between work sites and was quite informal. The training may have included limited instruction in first aid and CPR and some mentored time in a tower with another lifeguard on the first day of work. CSP began formalized lifeguard training in 1970 with multiple work locations attending the same training, and today the department trains more than 200 lifeguards per year in three separate ocean sessions and two inland lake sessions. The Ocean Lifeguard Training Program (inland lakes and reservoir lifeguards attend a separate, but similar, program) consists of approximately 120 hours of instruction, is certified by the United States Lifesaving Association, and includes California Title 22 Public Safety First Aid and Cardio-Pulmonary Resuscitation certifications that meet Emergency Medical Service Authority requirements. Lifeguard trainees must successfully pass both written examinations and skill-based scenario tests with live actors who simulate the stress of a real-life emergency. All CSP ocean lifeguards are trained at Huntington State Beach in Orange County to the same standard and receive further, area-specific, orientations when they return to their work location. This analysis relates only to the Ocean Lifeguard Training Program, which will be referred to as "lifeguard training" from this point forward.

Participants

This assessment consisted of input from two sources: rookie lifeguards and lead lifeguards from the field. At the time of the survey, rookie participants had just finished their first summer working as CSP lifeguards, successfully completing the department's lifeguard training approximately three months prior. Lead lifeguard

participants came from three work classifications: Seasonal Lifeguard II's, lead-level seasonal employees who assist in organizing lifeguard activities; State Park Peace Officer (SPPO) – Lifeguards, full-time lifeguards who oversee seasonal employees; and SPPO Lifeguard Supervisors, first level field supervisors. SPPO classifications are sworn law enforcement officers with state-wide police powers in addition to their lifeguard responsibilities. Participants surveyed in the rookie and lead lifeguard group worked in multiple different State Parks with varying operational procedures, environmental hazards, and beach visitor populations (Figure 1).

Figure 1
California State Parks lifeguard work locations



Data Collection

We developed separate surveys for rookies and lead lifeguards that included quantitative Likert-style rating questions, categorical questions, and open answer questions.

Rookie Survey

The rookie survey was designed by the core lifeguard training instructor cadre, and included 47 questions broken down into four sections: 1) personal information, 2) “Your Summer” (questions on job satisfaction and major activities during the summer), 3) preparation for the field – lifeguard training (questions on applicability and quality of instruction for lifeguard training topics), and 4) district field preparation (questions on field orientations and instruction received from district leadership). Rookies were evaluated in September 2017 after successfully completing lifeguard training and their first season of work. This group received an email with information about motivation and goals of the survey, and a link to an online form. Two subsequent reminder emails were sent by different lifeguard training instructors to those who had not completed the survey at one, and two weeks after the initial invitation. The complete rookie survey is in appendix A.

Lead Lifeguard Survey

The core lifeguard training instructor cadre also created the lead lifeguard survey, designed with the intent to create a feedback mechanism for field lifeguards to offer their perspectives and suggestions regarding the training program. An additional goal of the training staff was to identify if knowledge gaps existed among lead lifeguards, if there were recent training or protocol updates lead lifeguard staff were not yet aware of. The lead lifeguard survey was tested among training instructors and went through three revisions. The lead lifeguard survey included 41 questions, broken into four sections: 1) personal information, 2) new rookie general impression, 3) specific training content questions, and 4) improvement for lifeguard training. The survey was uploaded to an online platform, and the CSP Lifeguard Training Manager emailed a survey link to Lifeguard Supervisors in all State Parks with ocean lifeguards with a request to circulate among staff. A link to the survey was also emailed directly to Lifeguard II’s with an available email address in the department’s online scheduling system (n = 151). The complete lead lifeguard survey is in appendix B.

Data Analysis

Institutional Review Board approval was not required for this quality improvement assessment as it did not meet the Health and Human Services regulatory definition of human subjects research. Responses to Likert-style and categorical questions were tabulated and presented in numerical and graphical formats. Open answer questions were analyzed using a thematic content approach and, where possible, categorized for further presentation.

Results

Rookie Survey

Of the 133 persons who successfully completed the 2017 CSP lifeguard training, 65 (48.9%) responded to the rookie survey. The mean age of rookie respondents was 19.13 years old ($SD= 3.2$), and 15 (23.1%) were female. Rookie response rates by work area are in Table 1.

Table 1

Rookie Survey Response by Work Area

	Number of Rookies	Rookie Survey Responses	Response Rate
Angeles	10	3	30.0%
Crystal Cove	18	11	61.1%
Half Moon Bay	2	2	100.0%
Huntington/ Bolsa	22	12	54.5%
Monterey	4	3	75.0%
Oceano Dunes	3	1	33.3%
Permanent Candidate*	1	0	0.0%
San Clemente	11	7	63.6%
San Diego North	27	11	40.7%
Santa Barbara	5	0	0.0%
Santa Cruz	12	5	41.7%
Silver Strand	7	3	42.9%
Sonoma	1	1	100.0%
Ventura	10	6	60.0%
Total	133	65	48.9%

*Candidates who wish to become permanent lifeguards with CSP are required to attend the department's lifeguard training regardless of their previous experience with other agencies.

Overall, rookies reported very high job satisfaction for their first summer of work as a CSP lifeguard; on a seven-level Likert scale rating from very unsatisfied (one) to very satisfied (seven), 42 (64.6%) rookie respondents indicated seven, 14 (21.8%) rated six, seven (10.9%) rated five, and two (3.1%) rated four. No rookie respondent answered below a four, the mean response was 6.47 ($SD= 0.81$) and the median response was seven.

Responding to a question about what surprised them and what they wish they would have known when they started working, 11 rookies (16.9%) reported

wishing they had known more about beach operations that were specific to their location (which is outside the scope of the state-wide training curriculum), ten rookies (15.3%) discussed radio codes and general radio use, and six (9.2%) mentioned themes of responsibility or independence. One rookie from Crystal Cove reported surprise at the seriousness of the job after their first medical aid. In contrast, five rookies (7.6%) expressed feeling confident on their first day and reported not being surprised by any aspect of the job; one rookie from Ventura said: “I wasn't really surprised by much as training definitely prepared me for the intensity and seriousness of this job.” Five rookies (7.6%) expressed surprise at the difficulty of recognizing rescues and dangerous situations, their responses are in Table 2.

Table 2

Selected Rookie Responses on Rescue Recognition Difficulty

Work Area	Comment
Huntington / Bolsa Chica	“How to better spot preventative rescues such as those with Huntington conditions”
Huntington / Bolsa Chica	“How subtle the difference between a code 4 [non-emergency] situation and a rescue can be.”
San Diego - North	“I was surprised that the hardest part of lifeguarding was actually knowing how to identify a safety [preventative public contact] and knowing when to go [on a rescue]. I would have liked to have had more time in training up in the open towers to see this process, I feel like that would have been super helpful for me.”
Santa Cruz	“I wish I had learned more about rescue recognition in training. The pictures we were shown were much different from real life.”
Ventura	“I was most surprised in the difficulty of spotting a rescue versus a safety [contact]. Oftentimes I overestimated the abilities of the public. It got better as the summer progressed, but it was definitely something that I struggled with.”

2017 CSP rookie lifeguards reported a busy first summer. Almost all (n=60 92.3%) rookies reported that they had rescued at least one person in their first summer of work, with about a third (33.8%) reporting making more than 20 rescues in their first season (Table 3). The majority (53.8%) of rookies reported being involve in at least one major medical aid, where paramedics were called or the patient was strongly encouraged to seek further care at the hospital (Table 3). When asked what went well and what could have been improved on during major medical

calls, three rookies mentioned feeling confident in their skills to take vital signs, one rookie mentioned having different first aid equipment in the field than what they had learned on in training, and another described difficulty communicating with an elderly patient.

Table 3

2017 Rookie Self-reported Rescue and Medical Aid Activity

Work Area	Number of Aquatic Rescues					Number of Major Medical Aids			
	0	1-10	11-20	21-50	51+	0	1	2-5	6+
Angeles		3				1	2		
Crystal Cove		1	7	3		3	3	5	
Half Moon Bay	2					1		1	
Huntington / Bolsa Chica				9	3	5	5	2	
Monterey	1	2				2		1	
Oceano Dunnes		1					1		
San Clemente		1	2	2	2	2		5	
San Diego - North		4	4	3		8		3	
Santa Cruz	1	4				5			
Silver Strand		1	2			1	1	1	
Sonoma		1							1
Ventura	1	4	1			2	2	2	
Total	5	22	16	17	5	30	14	20	1

Rookie perceptions on how the lifeguard training program prepared them for the job were positive. We asked rookie respondents to rate how well the Lifeguard Training program prepared them for their first summer on a Likert scale with “not very well” as one, and “very well” as seven; 25 (38.4%) rookies replied with seven, 24 (36.9%) with six, 12 (18.4%) with five, three (4.6%) with four, and one (1.5%) with three. The mean response was 6.06 (SD=0.94) and the median response was six. When asked to name, in a separate question, in which area they felt most confident, 31 rookies (47.6%) said rescue, 22 (33.8%) said CPR, and 12 (18.4%) said medical emergencies.

In open response questions about the most and least applicable/useful part of lifeguard training, 28 (43.1%) mentioned medical instruction, 24 (36.9%) said components related to rescue, and nearly a third (32.3%) reported that every part of the program was useful and applicable. Seven participants mentioned the

department's stressful, scenario-based testing methods favorably. One rookie from Half Moon Bay said: "The stress testing [was most useful] because you can never train for every situation; but you can prepare yourself to feel calm, collected, and confident in every situation, the stress many of the scenarios put us under at training gave us vital experience into working through real life situations, no matter how serious." Another rookie described the stress testing as "spot on," clarifying that it was extremely useful to be taught how "to think clearly in the face of huge adrenaline rushes and high stress."

Rookies respondents were asked to rate each subject of the lifeguard training program in terms of applicability (applicable in the field/ not applicable in the field) and quality of instruction (strong/ needs improvement). Collectively, 85.9% of responses (n=1,117) indicated that the lifeguard training subjects were applicable in the field and instruction was strong (Table 4). EMS and Scene Safety, and CPR and AED received unanimous "instruction strong, applicable in the field" ratings, while 20% of rookie respondents (n=13) indicated that rescue watercraft deckhand operations and drowning/scuba instruction needed improvement, but that the subjects were applicable in the field.

Table 4

Rookie Perspectives on Lifeguard Training Subject Training Quality and Field Applicability

Lifeguard Training Subject	Instruction Strong, Applicable in the Field	Instruction Strong, Not Applicable in the field	Instruction Needs Improvement, Applicable in the Field	Instruction Needs Improvement, Not Applicable in the field
Basic Rescue	58		7	
Communicable Disease	57	3	5	
CPR & AED	65			
Drowning / SCUBA	41	11	13	
EMS & Scene Safety	65			
Lifeguard Ethics	57	2	6	
Medical Emergencies	55		10	

Missing Children	55		10	
Musculoskeletal Injuries (C-SPINE)	58		7	
Ocean Environment	61		4	
Ocean Lifeguard Operations	58	2	5	
Patient Assessment	55		9	1
Public Contacts / Rules	55		10	
Rescue Board Procedures	55	2	8	
Rescue Recognition	53		11	1
Rescue Water Craft Deck Hand Operations	47	5	13	
Rock Rescues	56	5	4	
Sand Entrapment	57	5	3	
Shock, Bleeding, Bandaging	59		6	
Vessel Rescues	50	3	12	
Total	1,117	38	143	2

*Appendix C includes graphic representation of this table, with response breakdown by lifeguard training session and work area.

Rookies were asked to expand on any subject they marked as “instruction needs improvement” or “Not Applicable in the Field”. Four rookie respondents (6.1%) mentioned they felt the instruction of certain topics was “rushed,” and three (4.6%) specifically mentioned they would like to see more practice with public contact skills. While thirteen respondents (20%) identified the Drowning/Scuba instruction as applicable but needing improvement, and 11 (16.9%) as not applicable but instruction strong, only two offered further comment. One trainee from Angeles said they were “a little confused on the scuba rescues because of the

pressure issue,” and another trainee from Huntington only requested “more elaboration” on the subject.

When asked for recommendations on how to improve the training program, ten rookies (15.3%) discussed themes related to learning more about public contacts, one female rookie from Crystal Cove described that she would have liked to have more instruction on “how to communicate with people that say things about my age or gender, because those people catch you off guard and it's hard to respond calmly and professionally.” Other rookies expressed a desire to have learned more about radio communications (n=6, 9.2%), and three (4.6%) said learning more about preventative actions and rescue recognition would have been helpful. One rookie from Huntington described difficulty with discerning who needed help in the water: “Rescue recognition did not prepare me for working in the field... I was able to learn the basics of rescue recognition from training, but I didn't learn how to detect more subtle rescues.”

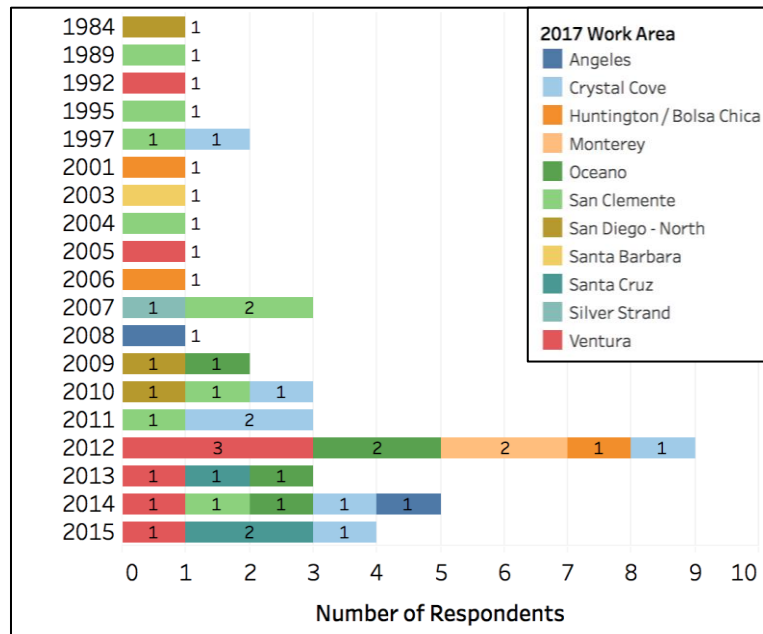
Other recommendations from rookies on how to improve lifeguard training included spending more time on common minor injuries such as bee stings and sting ray incidents, using more videos during lecture, and trying to incorporate more hands-on exercises. Two female trainees explained the importance of female instructors to the program, one commenting: “I think that at least one female instructor should always be [at training] if possible. As a young woman working in this field, it's important for us girls to see women working in this difficult field as well. It definitely encouraged and motivated me to look up to the female instructors.”

Lead Lifeguard Survey

The lead lifeguard survey was completed by 44 lifeguards: 36 Seasonal Lifeguard II's (81.8%), seven State Park Peace Officer [Permanent] Lifeguards (15.9%), and one State Park Peace Officer Lifeguard Supervisor (2.27%). Lead lifeguard respondents represented a wide range of experience and work areas (Figure 1). We are not able to determine an aggregate or stratified response rate by work area or position because we could not obtain the exact number of lead lifeguards working in each area. Additionally, some Seasonal Lifeguard IIs work part time or only a few days per summer, so their contact with rookie lifeguards and the training program would be limited.

Figure 2

Number of lead lifeguard survey responses by starting lifeguard season and work



On the 7-point Likert-scale questions, lead lifeguards reflected with positive reactions to general rookie preparedness and ability to perform basic rescue, but on average provided lower ratings for rescue recognition, reaction, and public contacts (Table 5). Similar results were observed in an open response question in which lead lifeguards discussed that rookies excelled in basic rescue (19 respondents, 43.1%), medical protocols (17 respondents, 38.6%), and attitude (9 respondents, 20.5%). Results from a categorized rating of rookie performance are in Table 6.

Themes related to preventative lifeguarding emerged in responses to various questions. When asked in what areas rookies required serious coaching, 19 (43.2%) lead lifeguards mentioned rescue and prevention recognition and reaction, one Lifeguard II from Ventura described how rookies in their work area were “missing serious contacts and/rescues because of doubt about whether it needed to be done or not.” Nine other respondents (20.4%) described rookies second guessing themselves, struggling with decisions to get out of the tower, or a lack of confidence and doubting weather a situation required their intervention.

Table 5*Lead Lifeguard Responses to Questions on Rookie Preparedness and Performance*

Question	Frequency							Mean (SD)	Median
	1	2	3	4	5	6	7		
In general, how prepared were the rookies arriving at your district to perform the duties of a Seasonal Lifeguard I? (1 – Very Unprepared; 7 – Very Prepared)			2.3% (n=1)	22.7% (n=10)	50% (n=22)	20.5% (n=9)	4.5% (n=2)	5.02 (0.85)	5
What percentage of the new rookies in your district required serious coaching in order to be successful on the beach? (1 – All Needed Serious Coaching; 7 – None Needed Serious Coaching)	2.3% (n=1)	4.5% (n=2)	15.9% (n=7)	25% (n=11)	31.8% (n=14)	15.9% (n=7)	4.5% (n=2)	4.45 (1.32)	5
How prepared were they for effecting basic rescues? (1 – Very Unprepared; 7 – Very Prepared)			6.8% (n=3)	6.8% (n=3)	27.3% (n=12)	50% (n=22)	9.1% (n=4)	5.47 (0.99)	6
In general, how confident were you that new rookies could identify a rescue? (1 –		11.4% (n=5)	9.1% (n=4)	27.3% (n=12)	38.6% (n=17)	9.1% (n=4)	4.5% (n=2)	4.3 (1.2)	5

Not Very Confident; 7 – Very Confident)									
How confident were you that new rookies could correctly discern when was the right time to go on a rescue? 1 – Not Very Confident; 7 – Very Confident)		9.1% (n=4)	20.5% (n=9)	31.8% (n=14)	27.3% (n=12)	9.1% (n=4)	2.3% (n=1)	4.13 (1.19)	4
Of the trainees that you saw respond to medical events, how did they perform? (1 – Very Poor; 7 – Very Well)			4.5% (n=2)	15.9% (n=7)	45.5% (n=20)	25% (n=11)	9.1% (n=4)	5.1 (0.97)	5
How prepared were new rookies to effectively contact the public regarding rules or other issues? (1 – Very Unprepared; 7 – Very Prepared)	2.3% (n=1)	4.5% (n=2)	11.4% (n=5)	43.2% (n=19)	20.5% (n=9)	18.2% (n=8)		4.2 (1.17)	4
How professional was the 2017 group of rookies at your beach? (1 – Very Unprofessional; 7 – Very Professional)		2.3% (n=1)	9.1% (n=4)	15.9% (n=7)	25% (n=11)	29.5% (n=13)	18.2% (n=8)	5.2 (1.3)	5

Table 6*Lead lifeguard rating of rookie performance categories, number of respondents*

Performance Category	Needs Improvement	Adequate	Strong	NA for my beach / Unobserved
Chain of Command	8	24	12	~
Employee relations	3	21	18	2
Identifying Rips and Other Ocean Hazards	8	16	20	~
Knowledge of Rules and Regulations	9	27	8	
Lost children	3	22	14	5
Major Medical Aids	8	20	10	6
Minor Medical Aids	2	18	23	1
Phone/Radio Communications	22	19	3	~
Public Contacts	7	29	8	~
PWC DH operations	11	21	3	9
Rock Rescues	3	20	8	13
Sand Entrapment	4	18	12	10
Vessel Rescues	6	22	5	11

* Graphical representation of each category stratified by first year lifeguarding and by district/sector is in Appendix D

Monterey said rookies needed to be “prepared for more preventative work and not expect every rescue to be a scene from an action movie”, while another Lifeguard II from Santa Cruz said: “rookies need to understand that getting out of the tower is so important in preventing a rescue, I saw a lack of [preventative actions] from rookies this year due to constantly being on the edge of to go out or not.”

Radio communications was identified by lead lifeguards as an area that needed attention in lifeguard training. Half of the respondents (50%) indicated that phone and radio communications by rookies “Needs Improvement”, and 13 respondents (29.5%) specifically mentioned further instruction on radio communication in open answer responses. One Lifeguard II wrote: “[rookies] need to forget the entirety of what is taught in terms of radio communication at training.” Six respondents (13.6%) suggested increased focus on basic radio communication in lifeguard training.

The performance category of employee relations had many “strong” ratings, although several lead lifeguards mentioned coaching rookies in themes related to professionalism and employee conduct in open response questions. While these

topics are covered in lifeguard training, lead lifeguards identified the following areas of employee relations as needing improvement were: chain of command (seven respondents (15.9%), time sheets (five respondents, 11.3%), grooming and uniform (four respondents, 9.1%), cell phones in the tower (four respondents, 9.1%), off duty behavior (three respondents, 6.8%), and attitudes around constructive criticism (three respondents, 6.8%). One SPPO Lifeguard commented that “Professionalism was high, but a token few struggled.” Another Lifeguard II remarked that lifeguard training should attempt to prepare rookies to receive constructive criticism in the field, he said: “there is a general sentiment that younger guards had a tough time receiving constrictive criticism, either shutting down and not engaging with a [lead lifeguard], or trying to argue/justify positions.” In a final question asking for other comments or suggestions for lifeguard training staff, most lead lifeguards (n:29, 65.9%) said that lifeguard training was doing a good job, eight (18.1%) said they appreciated the opportunity to provide feedback via the survey.

Discussion

This open water lifeguard training needs assessment was the first of its kind for our lifeguard service; it identified gaps in our department’s lifeguard training program from in-depth surveys of rookie lifeguards and lead lifeguards from a variety of work locations. The data provided new insight to training staff and managers on the strengths and limitations of the existing educational process for new lifeguards, and justified updates to various elements of the training program.

Lead lifeguards from the field were appreciative for the opportunity to provide insight and be involved with the evaluation, and their recommendations and insights overlapped with rookies in several key areas. While obtaining multisource feedback has been common in other fields for decades (Atwater et al., 2002), our lifeguard training program previously relied solely on input from a limited number of instructors who worked in the field with lifeguards and/or communications with lifeguard managers from the various work locations we service. Expanding the opportunity to share recommendations and experiences with the training staff to a much larger group of lower ranking lead persons and to rookies themselves was a significant advancement that allowed us to triangulate previously unidentified areas for improvement.

As the training provided must match operational needs, it is the training staff’s responsibility to ensure adequate preparation of new lifeguards for the job. This mandates a program that trains all rookies to succeed in every location, succeed with all supervisors and lead people, and succeed with all types of beach visitors. One major sentiment echoed by several female rookie lifeguards was the importance of female role models in the training cadre. While our training cadre

has included female instructors for over a decade, this explicit recommendation from new female lifeguards gave cause for us to be more intentional about the diversity of instructors. Lifeguard training program managers should consider role of diversity and inclusion in their instruction, instructors, and curriculum.

Rookies self-reported high levels of confidence in their medical skills, which was echoed by lead lifeguards who commented positively on performance during emergency medical situations. The nature of our lifeguard department demands strong medical skills as many of our lifeguard operations exist in remote areas with delayed ambulance arrival times where lifeguards are the highest level of care for a significant period of time. A comparison to another lifeguard agency's rookie lifeguards would prove extremely valuable in differentiating if our program's medical instruction is unique, or if increased confidence and positive performance reports are common among new lifeguards.

Several rookies mentioned the scenario-based stress testing as a positive component of the training program. As emergency response performance is greatly influenced by both psychological and physiological factors, our lifeguard training included emergency trauma and CPR scenario tests that included real-situation variables and distractions to simulate an acute stress response (Ali, Cohen, Gana, & Al-Bedah, 1998). Studies from other emergency response fields have shown that similar acute stress training has the potential to disrupt or moderate physiological and psychological responses that narrow task attention and distract rescuers (Pia, 2014). While limited, the initial positive attitudes and beliefs of rookie lifeguards towards scenario-based stress testing warrants further investigation of these training methods for specific use in lifeguard training programs and consideration by other lifeguard training program managers.

Rookies and lead lifeguards independently identified several of the same areas for lifeguard training needing improvement. Radio communications were identified by 50% of lead lifeguards as an instruction area "needing improvement" in categorical questions, and by 16 (24.6%) separate rookies in open response questions. This may be a true training gap or a reflection of the complicated decentralized nature of our department. Not all work areas are uniform in their procedures and capabilities due to varying environments and operational requirements. Some beaches in our system have phones in lifeguard towers and rookies rarely use radios their first year; other beaches require rookies to learn and use a radio on their first shift. We also found that radio communication, culture, and etiquette vary widely between beaches which presented a unique training challenge for a program attempting to teach a statewide standard. Ultimately, we decided to develop a short, hands-on instruction unit for rudimentary radio

communication with training radios that allows trainees to practice basics of the skill.

Another training area that both rookies and lead lifeguards flagged as needing improvement related to interacting with beach patrons, primarily public contacts for preventative purposes or rule violations. One analysis of a different lifeguard department in California found that preventative actions and public contacts accounted for 87.1% of all ocean lifeguard activities, making it a core job task (Koon et al., 2018). The deficiencies reported here present a new challenge for lifeguard training instructors. Generational changes in new lifeguard recruits and societal changes in our region's beach visiting population mandate that we carefully examine how we teach our mostly young rookie lifeguards to communicate with the public they serve.

Our department's previous "public contacts" instruction included only one lecture that relied heavily on material adapted from law enforcement training about gaining compliance when working with the public (Thompson, 2010). Several rookies recommended a practical exercise that would expose them to several different types of contacts. Based on these suggestions, the training staff designed a drill where trainees rotate through instructors who have a variety of pre-written scripts for various contacts such as an obvious tourist unfamiliar with conditions, someone swimming near a rip current, or someone breaking a rule (e.g., drinking alcohol, starting an illegal fire in the sand, dog off leash). This practice drill gave the trainee an opportunity to practice introducing themselves as a lifeguard, explaining the contact, providing alternatives, and answering questions.

The ability to recognize a person in distress and determine when the right time to intervene via safety contact or rescue was identified as a learning challenge by both rookie and lead lifeguards. Interestingly, rookies self-reported doubt in their ability which was recognized by many lead lifeguards who commented that the new lifeguards seemed uncertain, hesitant, or unsure about what they were observing. Several rookies concluded that existing instruction in this area did not prepare them for the field, and many lead lifeguards said they observed rookies struggling to differentiate between situations that required them to make a preventative contact and one that did not. During training, rookies received instruction on preventative lifeguarding and rescue recognition that included topics such as recognizing the instinctive drowning response, "dry land observation" clues and "distressed swimmer indications" with pictures, some videos, and verbal description by experienced lifeguard instructors (Pia, 1974; United States Lifesaving Association, 2017). These lessons were complemented by supervised time (approximately 4-8 hours) in a lifeguard tower watching real beach patrons with seasoned lifeguards.

That rookie lifeguards had initial difficulty with rescue recognition and response decision-making was not all that surprising. Previous research suggested lifeguards with more experience were more likely to detect a drowning individual than those with less experience (Page et al., 2011), and that the decision-making process for lifeguards making a rescue evolved overtime from a mentally intensive rational process to a more subconscious intuitive process (Szpilman et al., 2018). Although lifeguard instructors have long understood there is a learning curve involved with this particular aspect of the job, these data justify a more focused and intentional effort to explore how this topic might be taught more effectively. It would also be of great interest to investigate whether this training need exists in other ocean lifeguard departments.

Improving instruction in preventative lifeguarding and the ability for new lifeguards to successfully identify which situations will require their intervention could lead to fewer aquatic incidents on the beach, making for a safer recreation experience for beach visitors. Additionally, identifying and improving initial instruction in subject areas that previously required additional remedial coaching in the field may reduce the amount of time and attention required from lead lifeguards dedicated to these tasks, saving money/resources, and allowing for improved operational function.

Limitations

As a quality improvement process originally intended for use only by our department, the specific results presented here are not specifically generalizable to other lifeguard training programs or departments. While inference from specific results is not recommended, these findings may justify further research that validate observations reported here or investigate broader topics related to lifeguard training. Others involved in the training of open water lifeguards are encouraged to learn from this work and improve upon it for the evaluation of their own lifeguard training programs.

This analysis was based on a response rate below 50% for rookies, and an estimated 30% - 40% for lead lifeguards. Although both surveys had a less than ideal response rate, saturation of opinions and perspectives were reached in several key areas. It is impossible to know if an increased number of surveys would have changed the conclusions presented here or would have reflected similar responses to those already collected. In future evaluations, we will consider working with supervisory staff in the field to increase survey response by either garnering support for the project at a local level or making the survey mandatory for employees.

Self-reported results are always limited and subject to bias. It is possible that rookies or lead lifeguards concerned with image management or fearful of

some adverse workplace effect were not fully truthful in their responses. If present, the effect is likely to be very restricted as survey respondents were informed multiple times in emails and survey instructions that the lifeguard training team was seeking honest feedback and constructive criticism.

Additionally, these results may have been subject to recall bias where respondents may not remember events or specific subjects precisely. It is also possible that certain outlying events or unusual but unique cases influenced responses to questions. Furthermore, rookie responses to questions about the quality of subject area instruction may have been influenced by the instructor who taught that subject. It is possible that a rookie may have responded positively to a training subject due to a particularly funny or entertaining instructor versus the actual quality or usefulness of the material presented. Future evaluation might include multiple questions to differentiate different elements of instruction.

Finally, lead lifeguards likely based their evaluation on previous work experience and memories from their own lifeguard training. There is inherent risk relying on these classifications for information independently, as their knowledge and work or training experience may be substandard or outdated by current protocol. Information from lead lifeguards proved to be valuable when accompanied by other sources of feedback. Other lifeguard training programs should use caution with seeking information solely from this group.

Conclusion

A systematic evaluation with data from multiple sources was extremely helpful for this ocean lifeguard training program improvement. We identified elements important to our operation that our training staff had not previously considered and received valuable suggestions for enhancing the quality of our introductory education for ocean lifeguards. Teaching new lifeguards to identify situations that may require their intervention and then to make decisions about whether to intervene is an important area for future research and ocean lifesaving education development.

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Appendix A

Rookie Survey

Section One: Personal Information

1. Last name: _____
2. First name: _____
3. Email: _____
4. District and Sector: <drop down>
5. Which 2017 Lifeguard Training Session did you complete?
 - a. May Weekends
 - b. June I
 - c. June II

Section Two: Your Summer

1. How would you rate your job satisfaction as a Rookie Lifeguard with CA State Parks?
 - a. <Likert 1 – 7; Very Unsatisfied, Very Satisfied>
2. What were you most surprised by when you started working at your beach? What do you wish you would had known before you started working?
 - a. Open Answer
3. Approximately how many rescues (physical assistance to a victim) did you make this summer?
 - a. I did not make a rescue this summer
 - b. 1-10
 - c. 11-20
 - d. 21 – 50
 - e. More than 50
4. What was your most memorable rescue? Anything weird? Unusual? Tell us the story!
 - a. Open Answer
5. How many MAJOR medical aids did you have? (The medics were called or the person was strongly encouraged to seek further care)

- a. 1
 - b. 2-5
 - c. 6-10
 - d. > 11
6. What was your most memorable Major Medical? Anything unusual or unexpected? (if you have more than one, please share!)
<Open Answer>
 7. On the Major Medicals, what went well and what didn't go so well?
<Open Answer>
 8. Did you have any other unusual situations or events happen this summer? (Boat rescues, plane crashes, bon-fire fights, rock rescues, other?)
<Open Answer>
 9. Did you receive any awards or commendations for your performance this summer? If so, please list.
<Open Answer>

Section Three: Preparation for the field – Lifeguard Training

1. How well did the Lifeguard Training program prepare you for your first summer?
 - a. <Likert: 1= Not Very Well, 7= Very Well >
2. In your opinion, what was the MOST applicable/useful part of Lifeguard Training?
<Open Answer>
3. In your opinion, what was the LEAST applicable/useful part of Lifeguard Training?
<Open Answer>
4. When you completed Lifeguard Training, in what area did you feel MOST confident?
 - a. Ocean Rescue
 - b. Medical Emergencies
 - c. CPR
 - d. Other: _____

5. Please fill out the following grid related to the various components of Lifeguard Training, the quality of the instruction you received, and the topics relevance to your beach operation.

	Instruction Strong, Applicable in the field	Instruction Needs Improvement, Applicable in the field	Instruction Strong, Not applicable in the field	Instruction Needs Improvement, Not applicable in the field	I don't even remember this from lifeguard training
Lifeguard Ethics					
EMS & Scene Safety					
Patient Assessment					
Shock, Bleeding, Bandaging					
Medical Emergencies					
Basic Rescue					
Rescue Recognition					
CPR & AED					
Drowning / SCUBA					
Vessel Rescues					
Rescue Water Craft Deck					

Hand Operations					
Rescue Board Procedures					
Rock Rescues					
Ocean Environment					
Communicable Disease					
Musculoskeletal Injuries (C-SPINE)					
Missing Children					
Ocean Lifeguard Operations					
Public Contacts / Rules					
Sand Entrapment					

6. If you marked “Needs Improvement” for a topic above, please elaborate. What do you feel could have prepared you more for this topic area? Should we alter the instruction of Lifeguard Training in reference to this topic area?

<Open Answer>

7. What do you wish you learned at Lifeguard Training that would have helped prepare you for the field?

<Open Answer>

8. What changes could be made to the Lifeguard Training program to better prepare rookies for the job? What topics should have more time? Which less?
<Open Answer>
9. After your first Summer as a California State Lifeguard, what advice or recommendations would you give the Lifeguard Instructor Staff to better prepare the 2018 rookies?
<Open Answer>

Section Four: District Field Preparation

1. Did you receive a field orientation at your district? What did it include? Was it helpful?
 - a. <Open Answer>
2. On your first day assigned in a tower, did you sit with another lifeguard?
 - a. Yes, I shadowed a senior lifeguard
 - b. No, I was put in a tower by myself
3. Did lead lifeguards in your district tell you to do anything differently than what you learned in Lifeguard Training? What was it? Should we teach it differently in Lifeguard Training?
<Open Answer>
4. Was the advice/mentorship/coaching you received from Lifeguard II's or Supervising Lifeguards helpful? What would you pass on to next year's rookie lifeguards?
<Open Answer>
5. Did you receive a POOR performance report (get written up / in trouble) this summer? What was it for? Was it justified? Did you learn anything?
<Open Answer>

Appendix B

Lead Lifeguard Survey

Section One: Personal

Last Name: _____

First Name: _____

Rank: <Multiple Choice>

Lifeguard II (Seasonal

SPPO Lifeguard

SPPO Lifeguard Supervisor

Other: _____

When was your first season as a State Parks Lifeguard?

<drop down – years>

What district/sector did you work in for the 2017 Summer Season

<drop down – district/sector>

Section Two: New Rookie General Impression

*The following questions are asking for your general impressions of the entire group of rookies at your district. Try not to let outlying special cases influence your assessment of the entire group.

1. In general, how prepared were the rookies arriving at your district to perform the duties of a Seasonal Lifeguard I?
<Likert: 1= Very Unprepared, 7= Very Prepared>
2. In your opinion, what percentage of the new rookies in your district required serious coaching in order to be successful on the beach?
<Likert>
 1. 100% - all needed serious coaching
 2. 90% - most needed serious coaching
 3. 75% - several needed serious coaching
 4. 50% - about half needed serious coaching
 5. 25% - some needed serious coaching
 6. 10% - few needed serious coaching
 7. 0% - none needed serious coaching
3. Of the rookies that did require serious coaching, what was the main area of weakness?
<Open Answer>
4. In what areas did rookies excel? For which aspects of the job does lifeguard training adequately prepare new rookies?
<Open Answer>
5. Lifeguard training understands that each district may “tweak” what is taught during the training program in order to improve functionality and customize what operational practice for each beach. When the new rookies

arrive at your district from training, what sort of things do you “tweak” from what is taught at Lifeguard training?

<Open Answer>

Section Three: Specific Training Content Questions

*Lifeguard instructors have limited time to introduce trainees to a variety of topics that are applicable in different ways from beach to beach. We do our best to teach the “standard” with full knowledge that trainees will receive additional instruction when they get to their district. Please share your district specific insight, and if how you would like to see Lifeguard Training prepare rookies in relation to these content areas.

Rescues and Preventative Actions

1. At Lifeguard training, rookies learned how to effect a basic rescue. How prepared were they for effecting basic rescues?
<Likert: 1= Very Unprepared, 7= Very Prepared>
2. What additional training did you provide in district to help rookies fine-tune their rescue skills? What did they excel at? What need a lot of work? (Please be specific and think through each aspect of a rescue – phone/radio communication, water entry, swim out, signals, safely approaching and clipping in victim, returning, getting back to the tower, etc.)
<Open answer>
3. Were the rookies very proactive? Did they get out of the tower to make preventative contacts about hazards at the beach?
<Open Answer>
4. What should be added or taught differently in regards to basic rescue?
<Open answer>

Rescue Recognition

1. In the short period of time at Lifeguard Training, rookies learned common signs of distress and environmental hazards that indicate the need for rescue. In general, how confident were you that new rookies could identify a rescue?
<Likert: 1= Not Very Confident, 7= Very Confident>
2. How confident were you that new rookies could correctly discern when was the right time to go on a rescue? (Did they “go”?)
<Likert: 1= Not Very Confident, 7= Very Confident>
3. What additional tips did you offer rookies on rescue recognition? Should we incorporate it into the statewide training program?
<Open answer>

Public Contacts

1. Trainees receive one lecture on Public Contacts, rule enforcement and working with difficult beach patrons. Understanding that experience

improves interactions with the public, in general how prepared were new rookies to effectively contact the public regarding rules or other issues?

<Likert: 1= Not Very Unprepared, 7= Very prepared>

2. What additional instruction or tips did you offer rookies on public contacts and rule enforcement? Should we incorporate it into the statewide training program? Is there additional information we should provide in Lifeguard Training on this topic?

<Open answer>

Medical Aids

1. A significant portion of Lifeguard Training classroom and practical time is spent on responding to medical emergencies. Of the trainees that you saw respond to medical events, how did they perform?

<Likert: 1= Very Poor, 7= Very Good>

2. Are there any specific stories or experiences you had where a rookie did particularly well/poor on a Medical Aid?

<Open answer>

3. Is there anything that should be taught differently or added in the medical instruction of lifeguard training?

<Open answer>

Professionalism and Employee Conduct

1. Some lectures in lifeguard training address issues of professionalism such as uniforms, grooming, filling out time sheets on time, cell phones in the tower, sexual harassment, off duty activity, etc. In general, how professional was the 2017 group of rookies at your beach?

<Likert: 1= Not Very Professional, 7= Very Professional>

2. What sort of additional issues or professionalism/ethics topics would you suggest be included in lifeguard training?

<Open answer>

Section Four: Improvements for Lifeguard Training

1. Fill out the following grid based on the performance of the rookies you worked with this season. If you click needs improvement please offer your comments and suggestions below.

Topic / Skill	Needs Improvement	Adequate	Strong	N/A for my beach or unobserved
Identifying Rip Currents and Other Ocean Hazards				
Public Contacts				

Knowledge of Rules and Regulations				
Sand Entrapment				
Rock Rescues				
PWC DH operations				
Major Medical Aids				
Minor Medical Aids				
Lost children				
Employee relations				
Phone/Radio Communications				
Chain of Command				
Vessel Rescues				

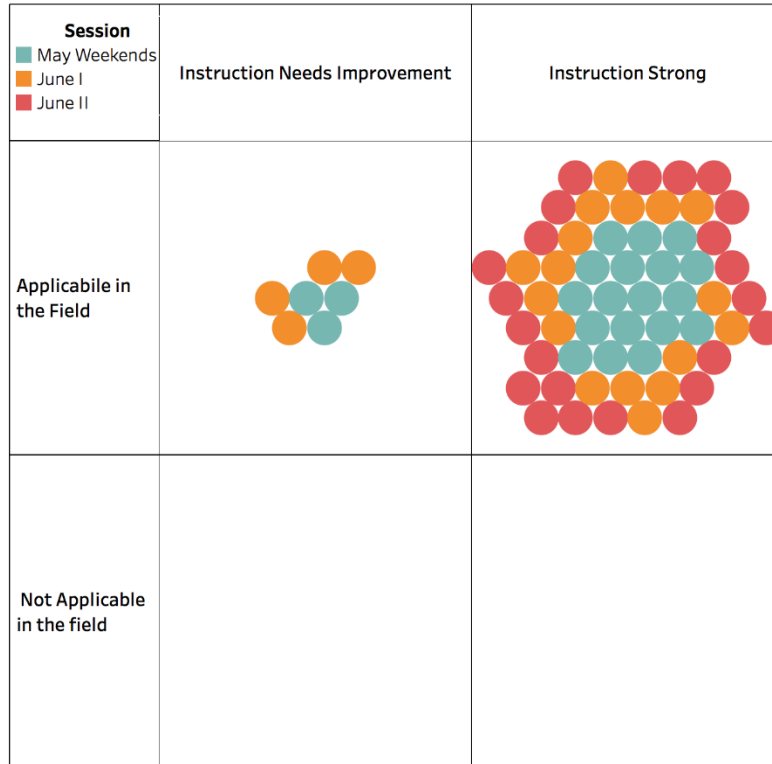
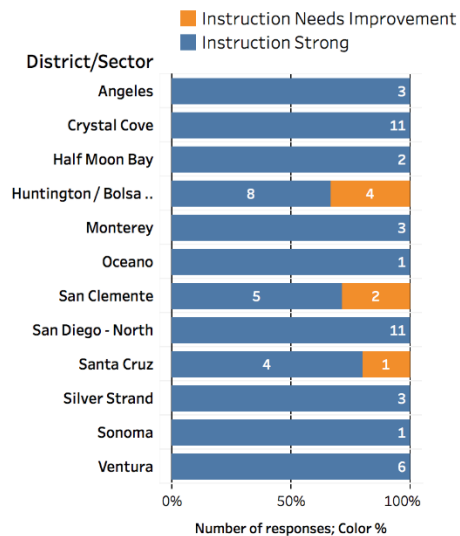
2. In what ways do you think Lifeguard Training could improve instruction in the areas you marked above?
<Open Answer>
3. Was there anything that rookies were taught at Seasonal Lifeguard Training that made field performance more difficult or was irrelevant to your operation? What could be omitted from Lifeguard Training instruction?
<Open Answer>
4. If you were an instructor at lifeguard training, what would you choose to tell, show, share with the class that you think they need to know before hitting the field?
<Open Answer>
5. Other comments of suggestions for lifeguard training?
<Open Answer>

Appendix C

Graphic Representation of Rookie Perspectives on Lifeguard Training Subjects

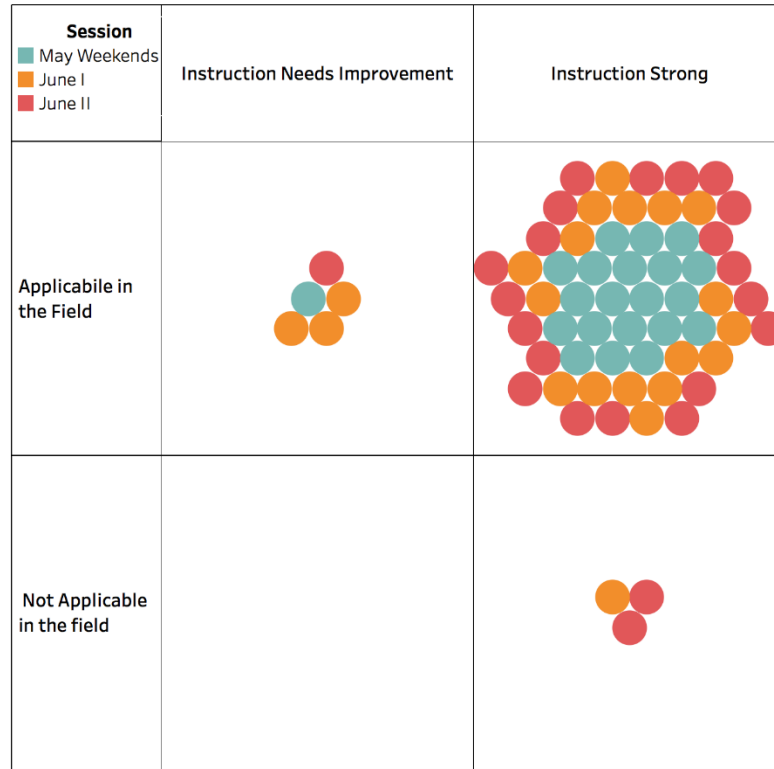
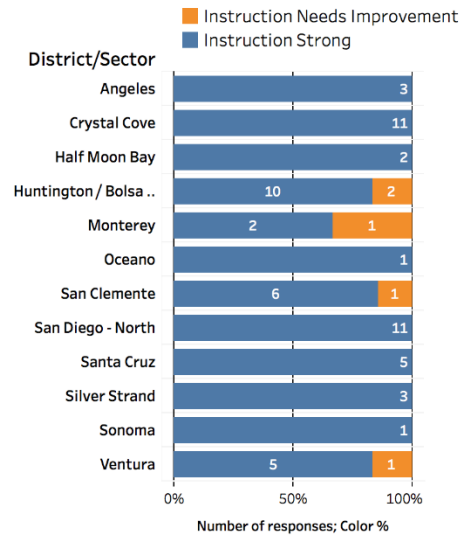
Lifeguard Training Subject: Basic Rescue

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 7 10.8%	N= 58 89.2%
Not Applicable in the field		



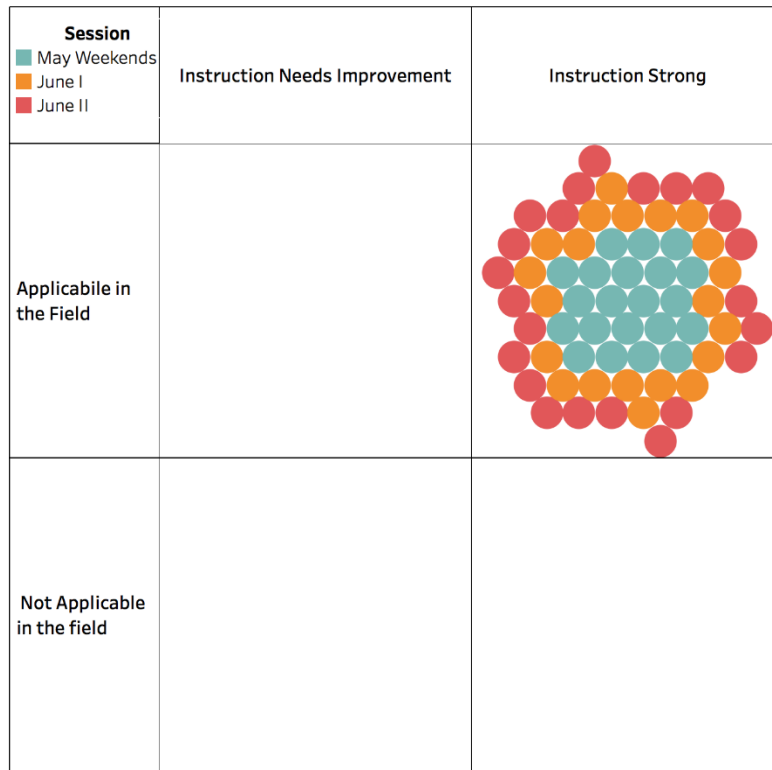
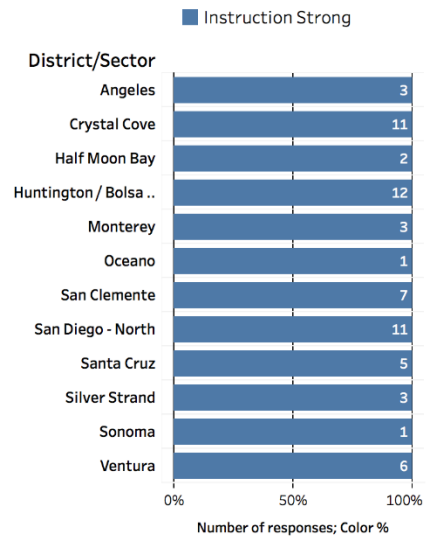
Lifeguard Training Subject: Communicable Disease

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 5 7.7%	N= 57 87.7%
Not Applicable in the field		N= 3 4.6%



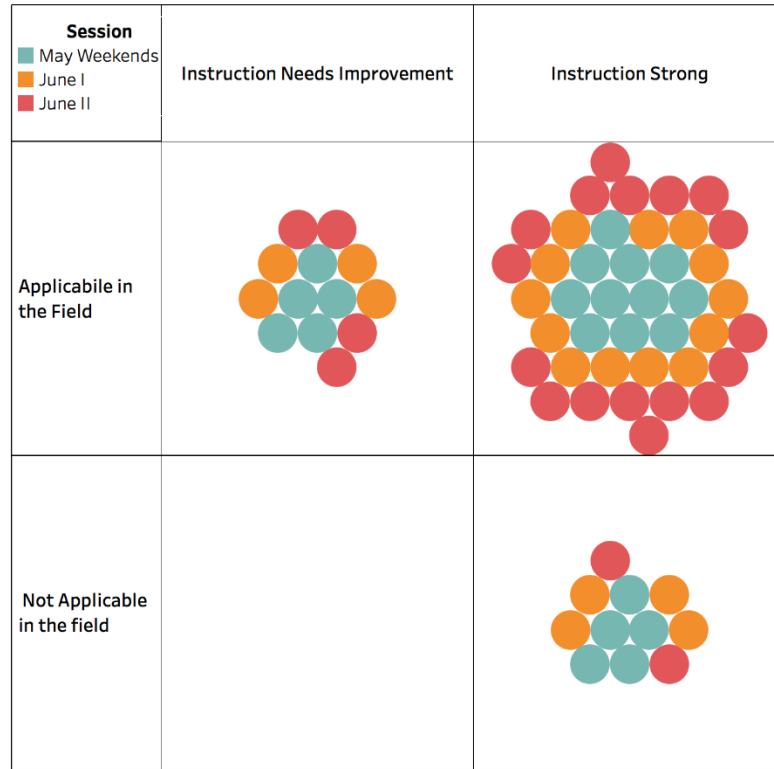
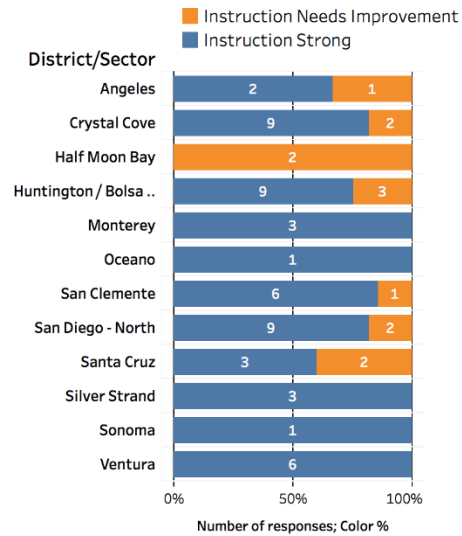
Lifeguard Training Subject: CPR & AED

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field		N= 65 100.0%
Not Applicable in the field		



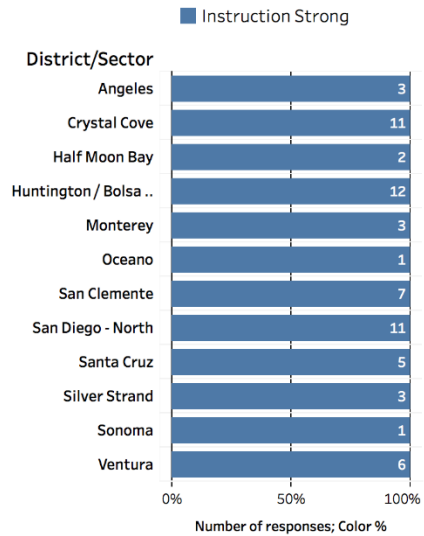
Lifeguard Training Subject: Drowning and Scuba

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 13 20.0%	N= 41 63.1%
Not Applicable in the field		N= 11 16.9%



Lifeguard Training Subject: EMS and Scene Safety

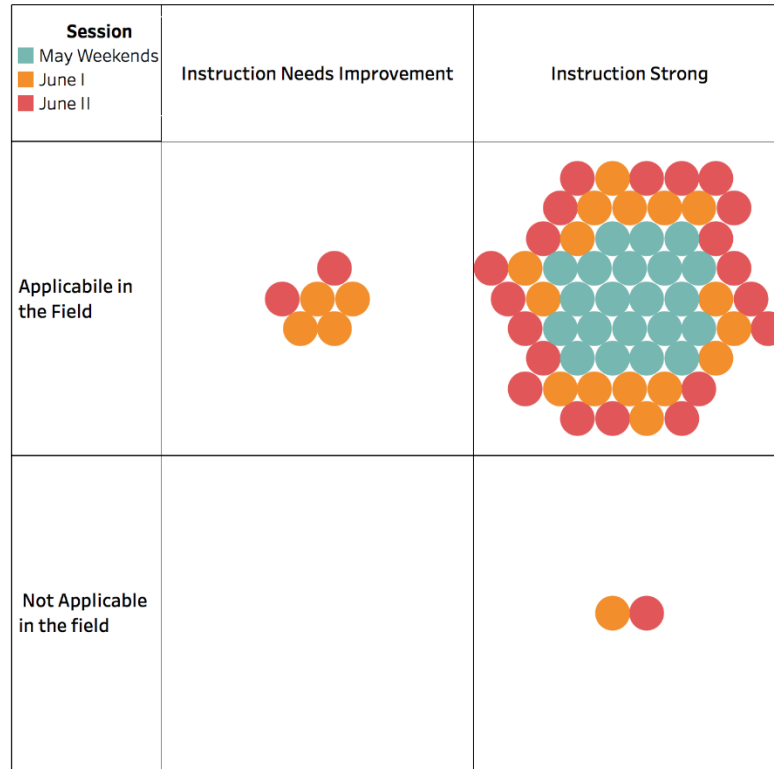
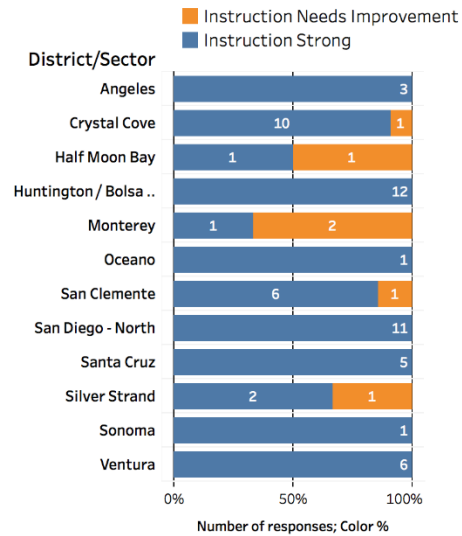
	Instruction Needs Improvement	Instruction Strong
Applicable in the Field		N= 65 100.0%
Not Applicable in the field		



Session	Instruction Needs Improvement	Instruction Strong
■ May Weekends ■ June I ■ June II		
Applicable in the Field		
Not Applicable in the field		

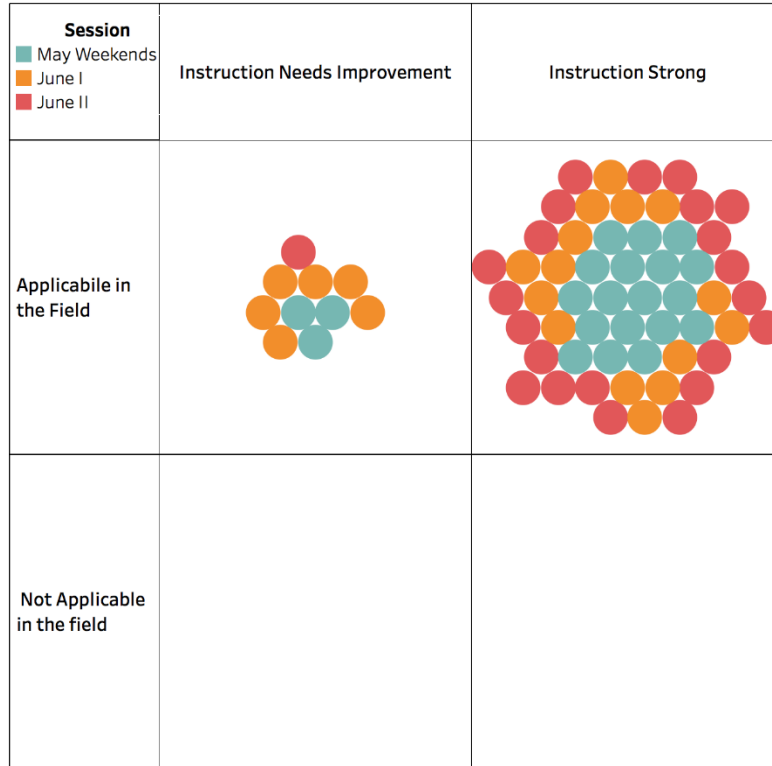
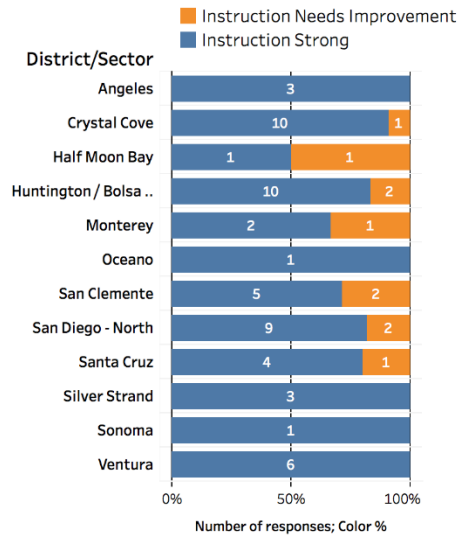
Lifeguard Training Subject: Lifeguard Ethics

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 6 9.2%	N= 57 87.7%
Not Applicable in the field		N= 2 3.1%



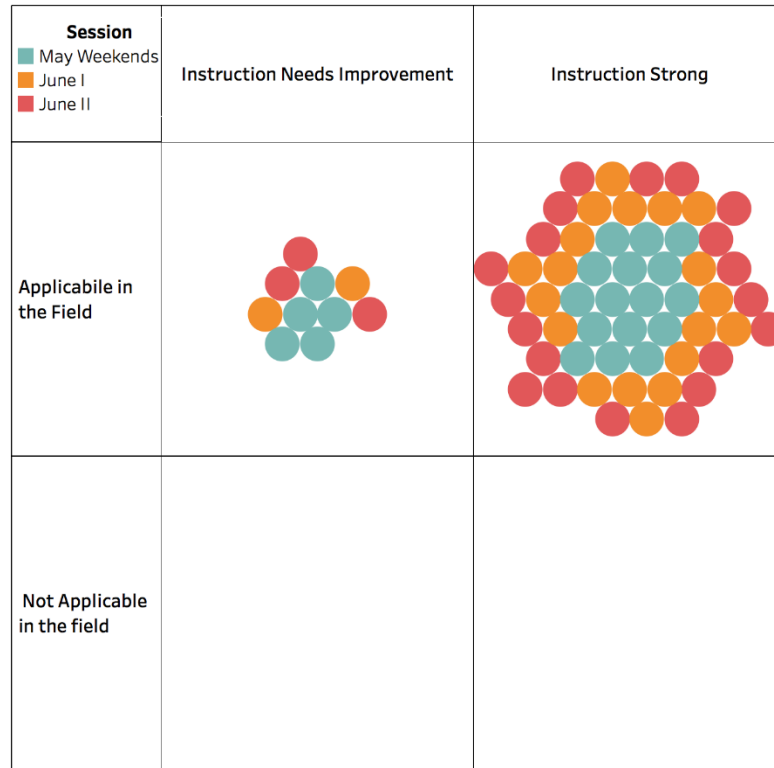
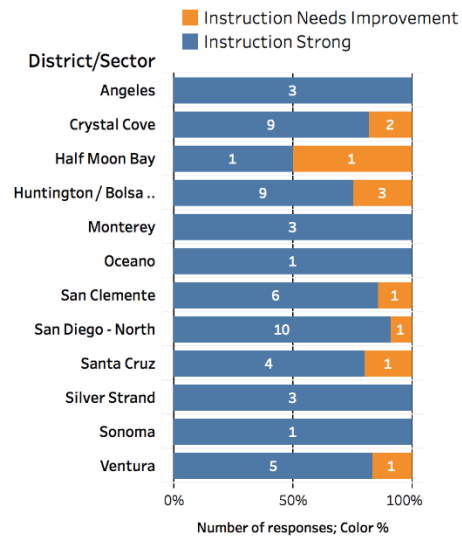
Lifeguard Training Subject: Medical Emergencies

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 10 15.4%	N= 55 84.6%
Not Applicable in the field		



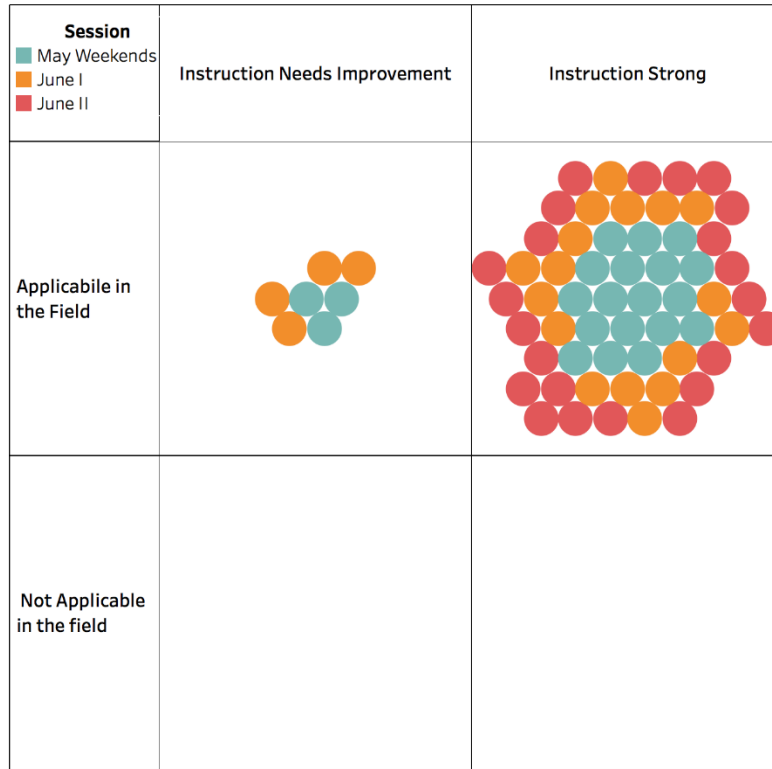
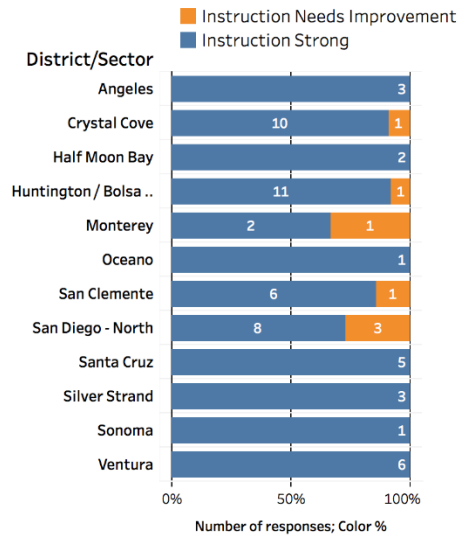
Lifeguard Training Subject: Missing Children

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 10 15.4%	N= 55 84.6%
Not Applicable in the field		



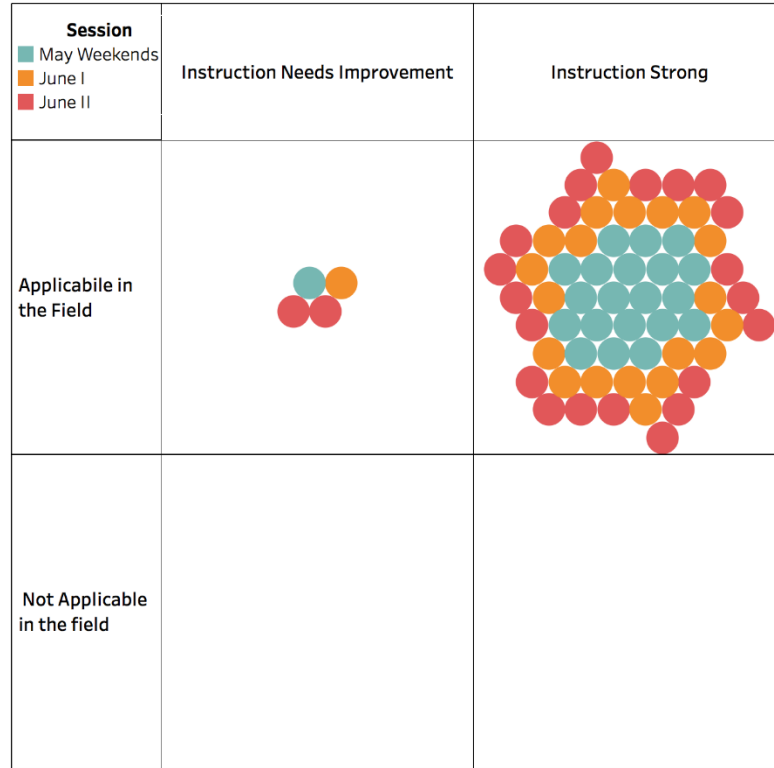
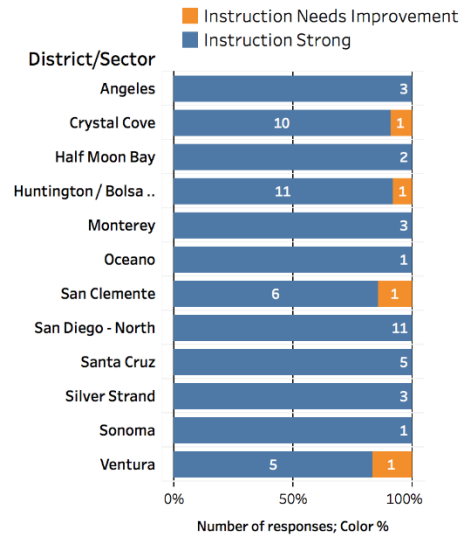
Lifeguard Training Subject: Musculoskeletal Injuries (C-Spine)

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 7 10.8%	N= 58 89.2%
Not Applicable in the field		



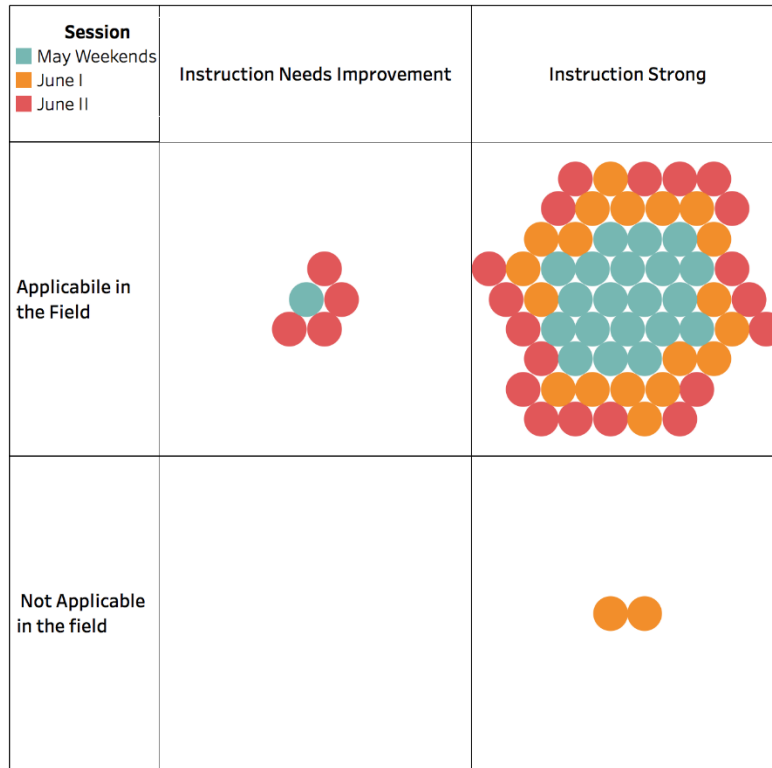
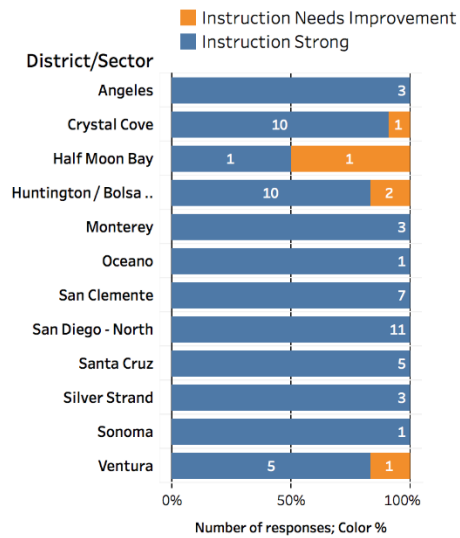
Lifeguard Training Subject: Ocean Environment

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 4 6.2%	N= 61 93.8%
Not Applicable in the field		



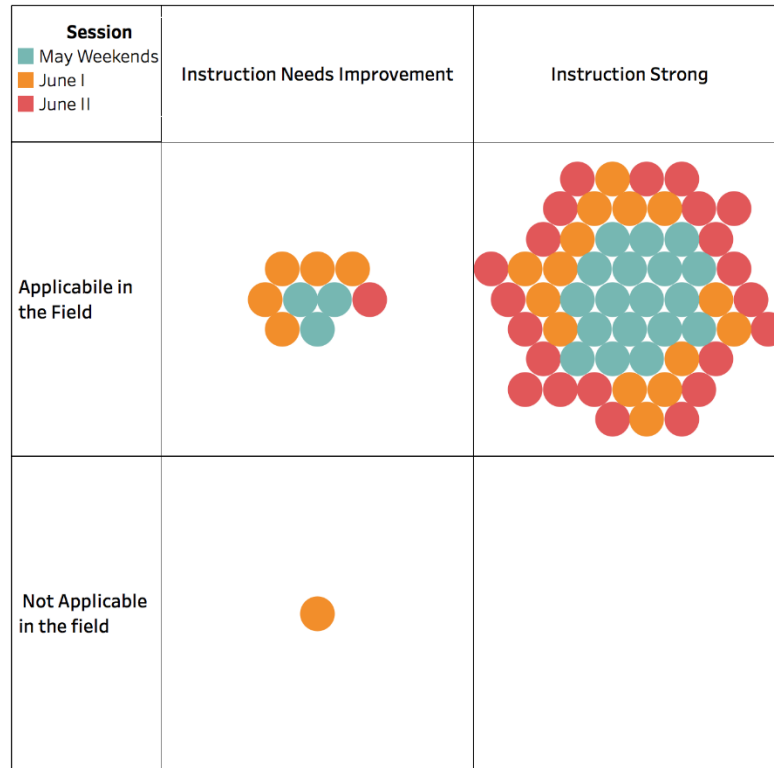
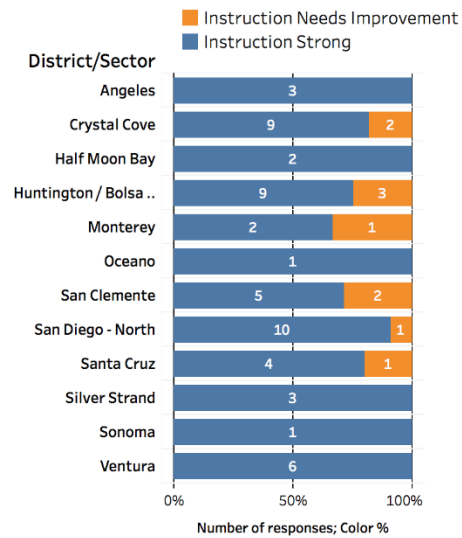
Lifeguard Training Subject: Lifeguard Operations

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 5 7.7%	N= 58 89.2%
Not Applicable in the field		N= 2 3.1%



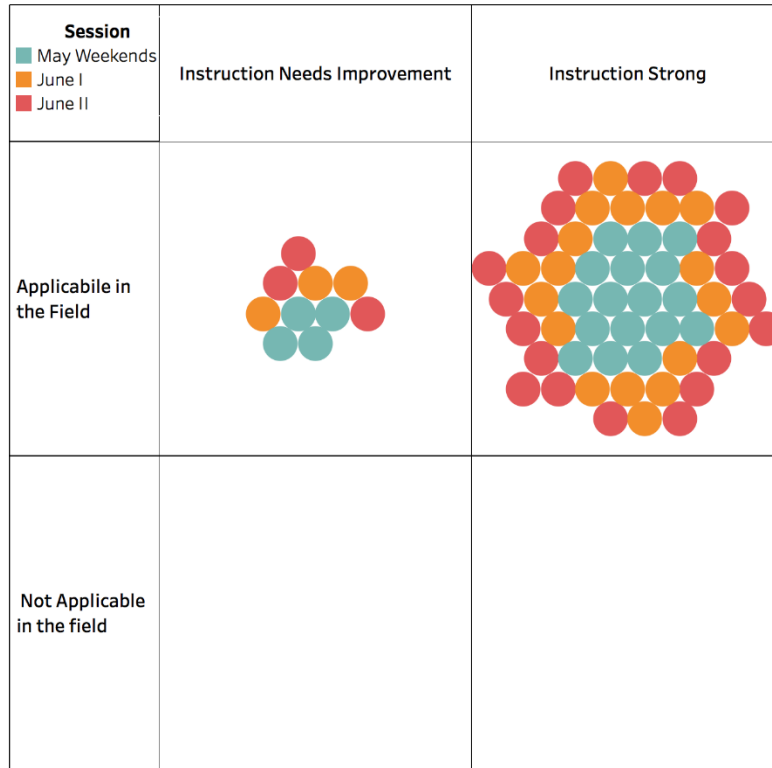
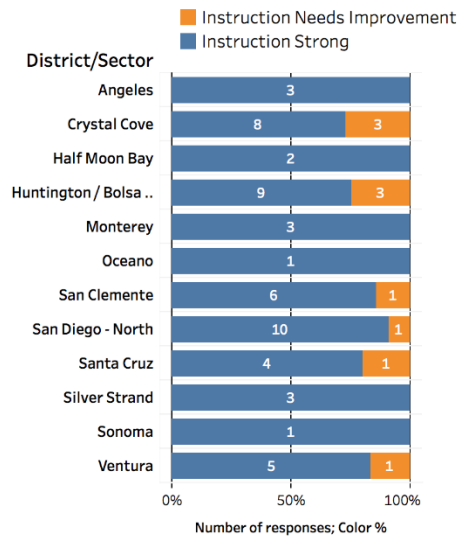
Lifeguard Training Subject: Patient Assessment

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 9 13.8%	N= 55 84.6%
Not Applicable in the field	N= 1 1.5%	



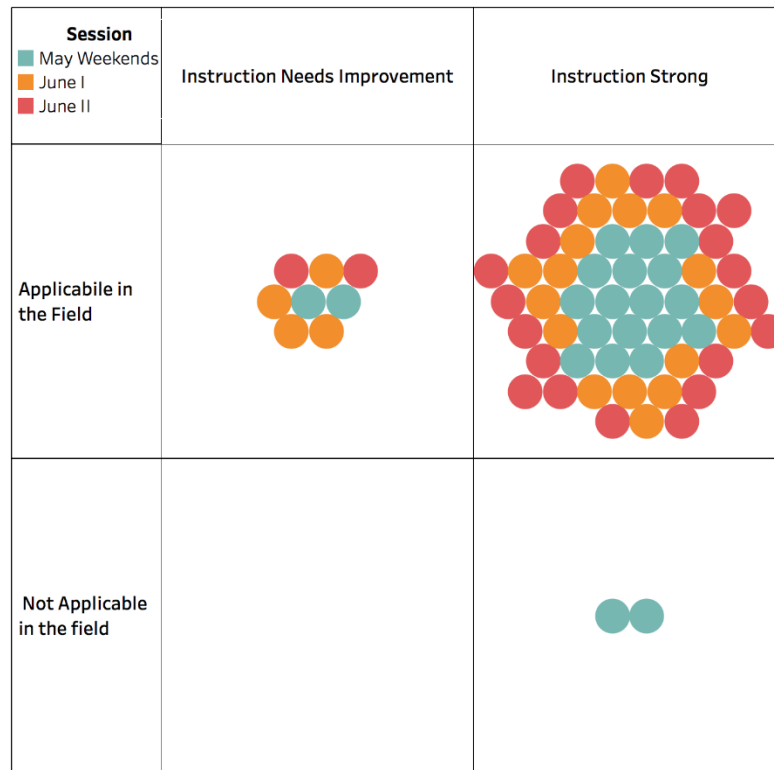
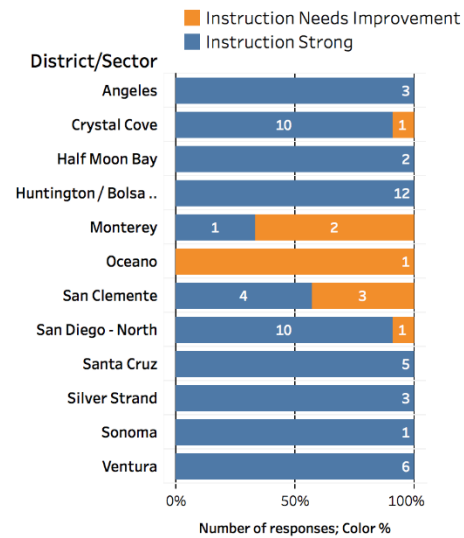
Lifeguard Training Subject: Public Contacts

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 10 15.4%	N= 55 84.6%
Not Applicable in the field		



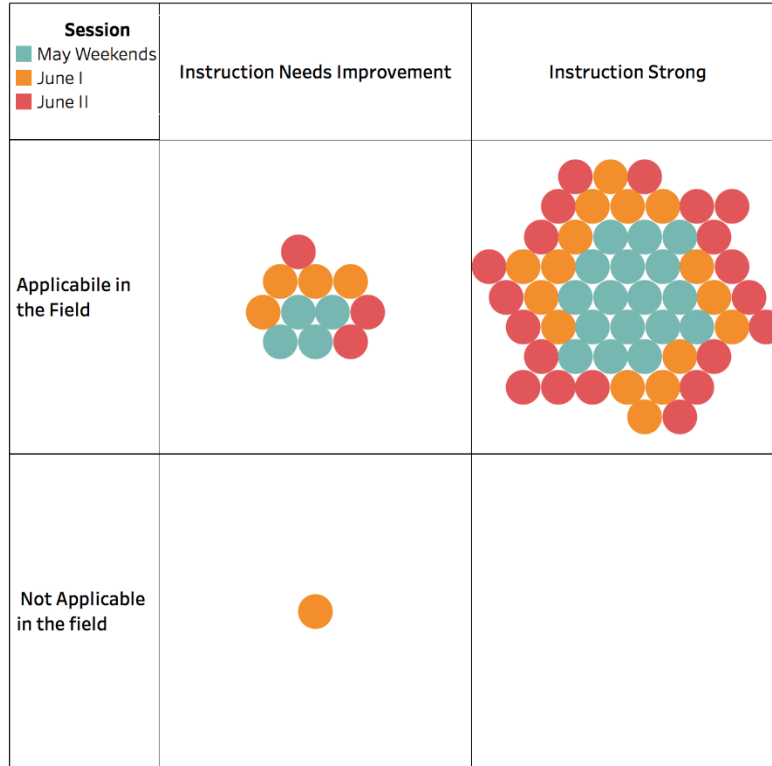
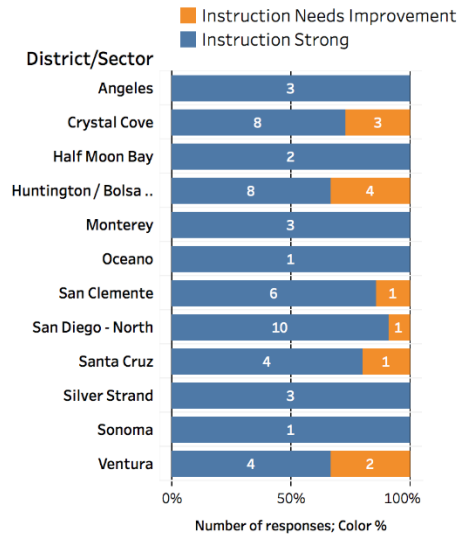
Lifeguard Training Subject: Rescue Board

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 8 12.3%	N= 55 84.6%
Not Applicable in the field		N= 2 3.1%



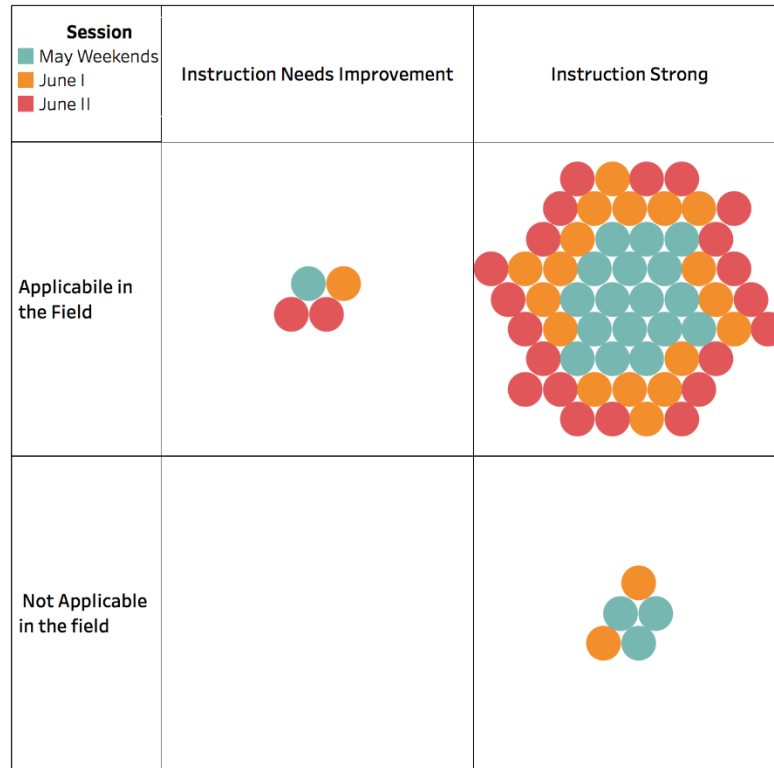
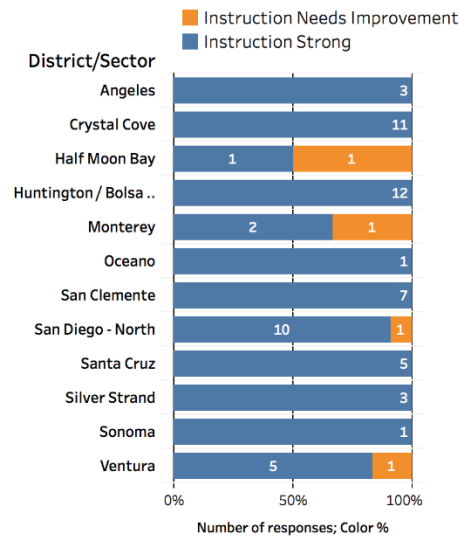
Lifeguard Training Subject: Rescue Recognition

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 11 16.9%	N= 53 81.5%
Not Applicable in the field	N= 1 1.5%	



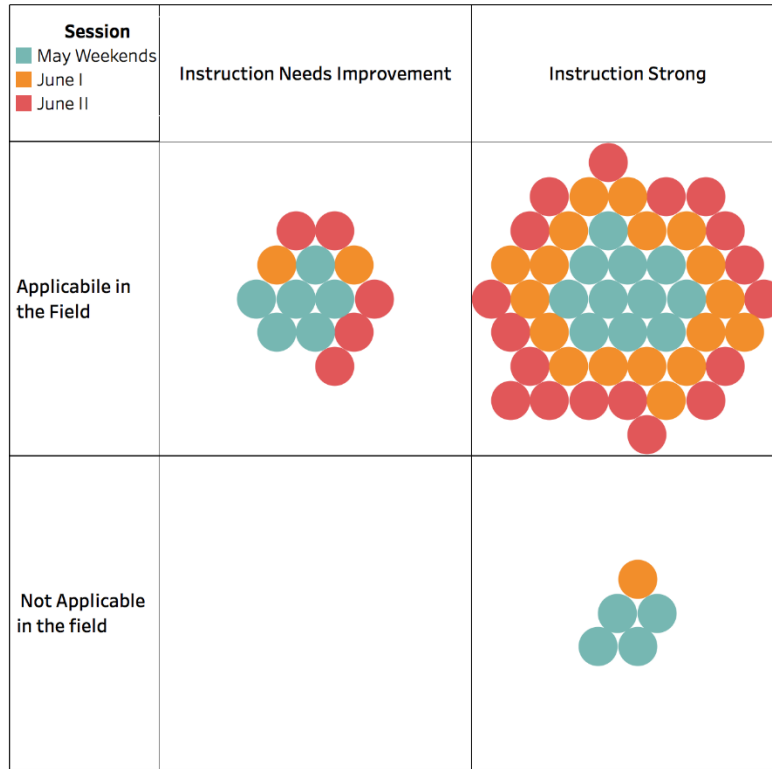
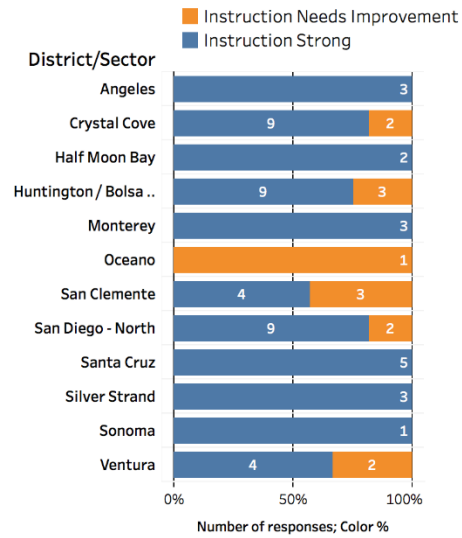
Lifeguard Training Subject: Rock Rescues

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 4 6.2%	N= 56 86.2%
Not Applicable in the field		N= 5 7.7%



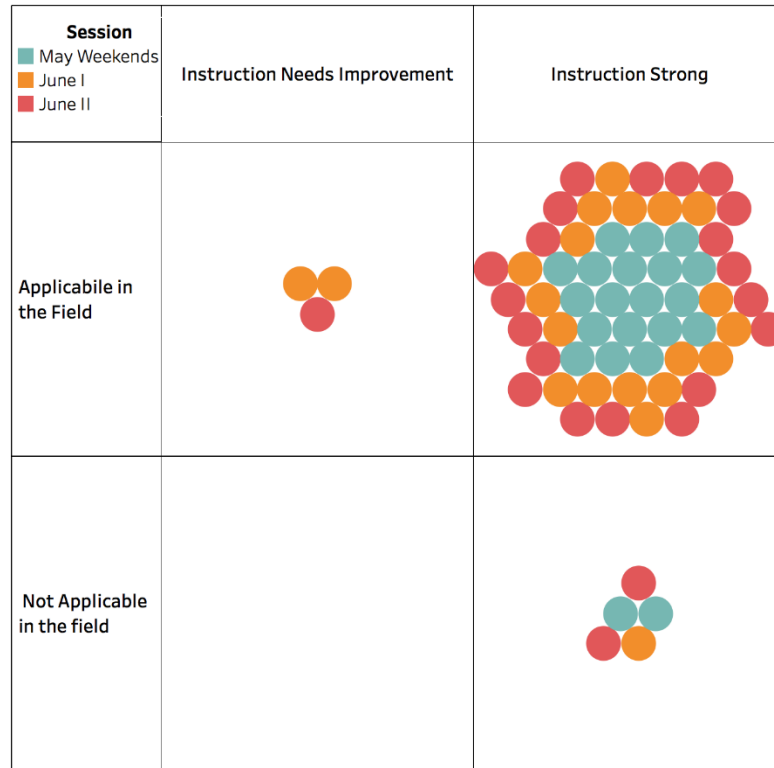
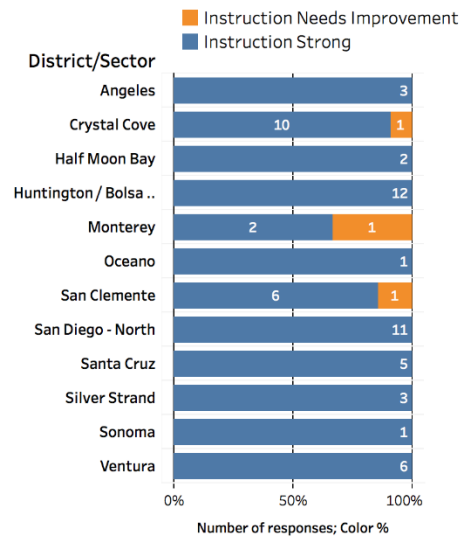
Lifeguard Training Subject: RWC Deck Hand Operations

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 13 20.0%	N= 47 72.3%
Not Applicable in the field		N= 5 7.7%



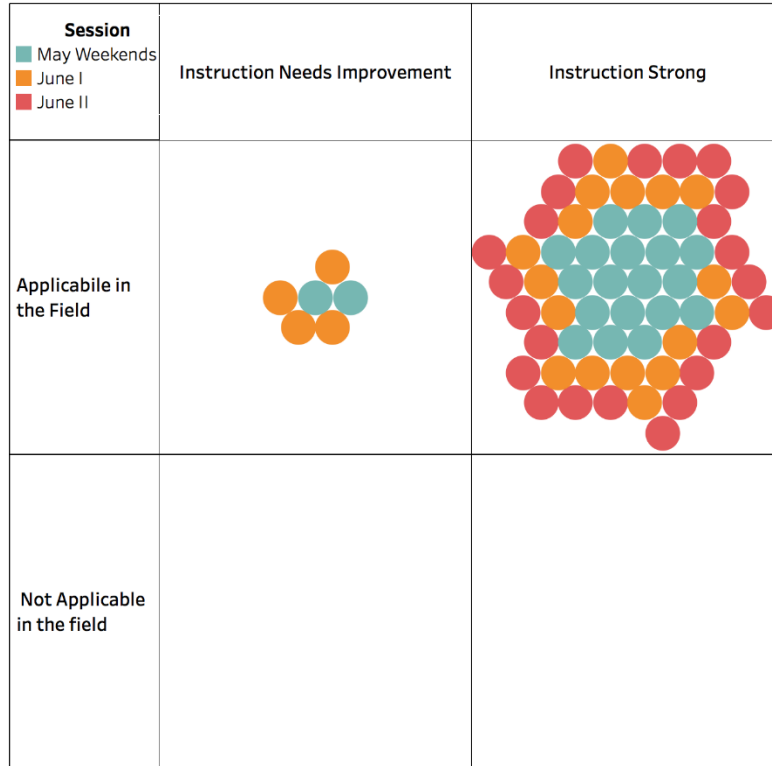
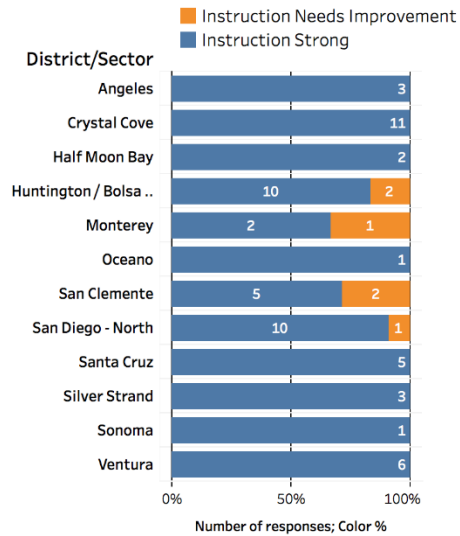
Lifeguard Training Subject: Sand Entrapment

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 3 4.6%	N= 57 87.7%
Not Applicable in the field		N= 5 7.7%



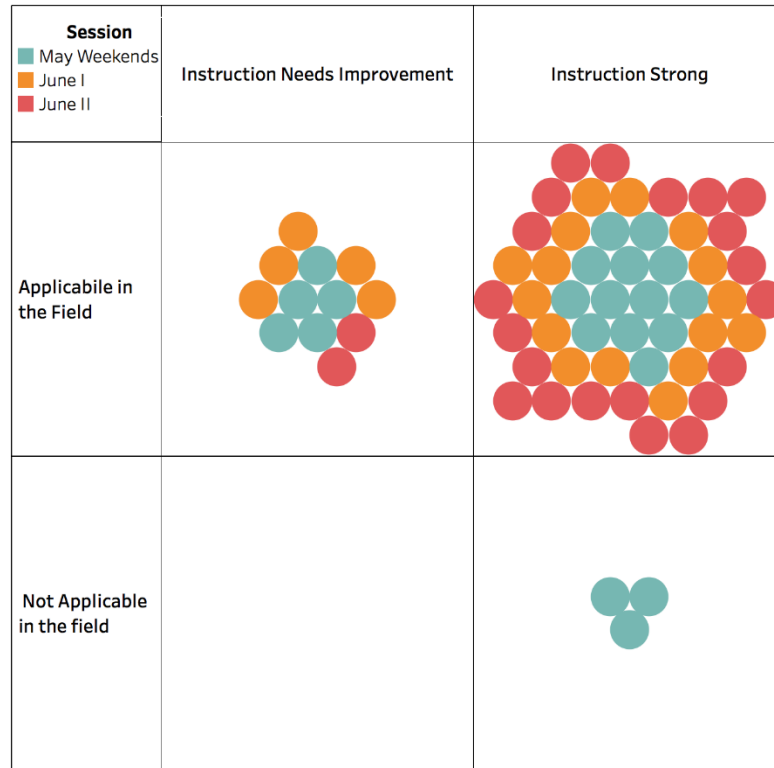
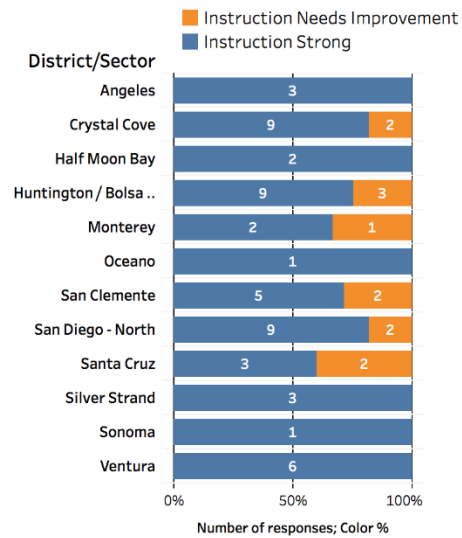
Lifeguard Training Subject: Shock, Bleeding, Bandaging

	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 6 9.2%	N= 59 90.8%
Not Applicable in the field		



Lifeguard Training Subject: Vessel Rescues

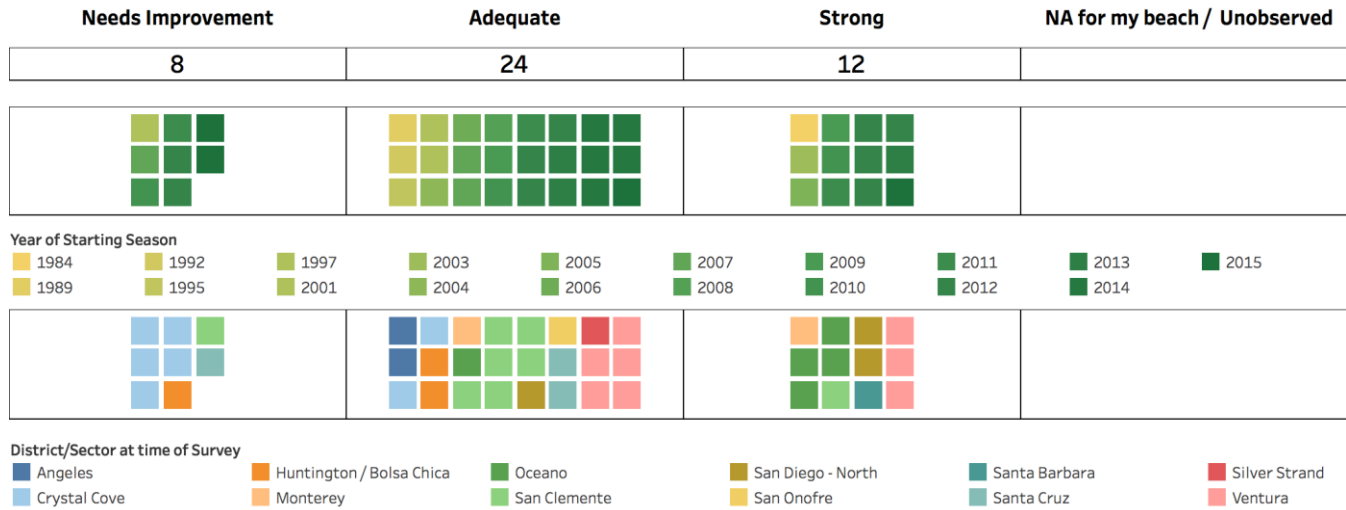
	Instruction Needs Improvement	Instruction Strong
Applicable in the Field	N= 12 18.5%	N= 50 76.9%
Not Applicable in the field		N= 3 4.6%



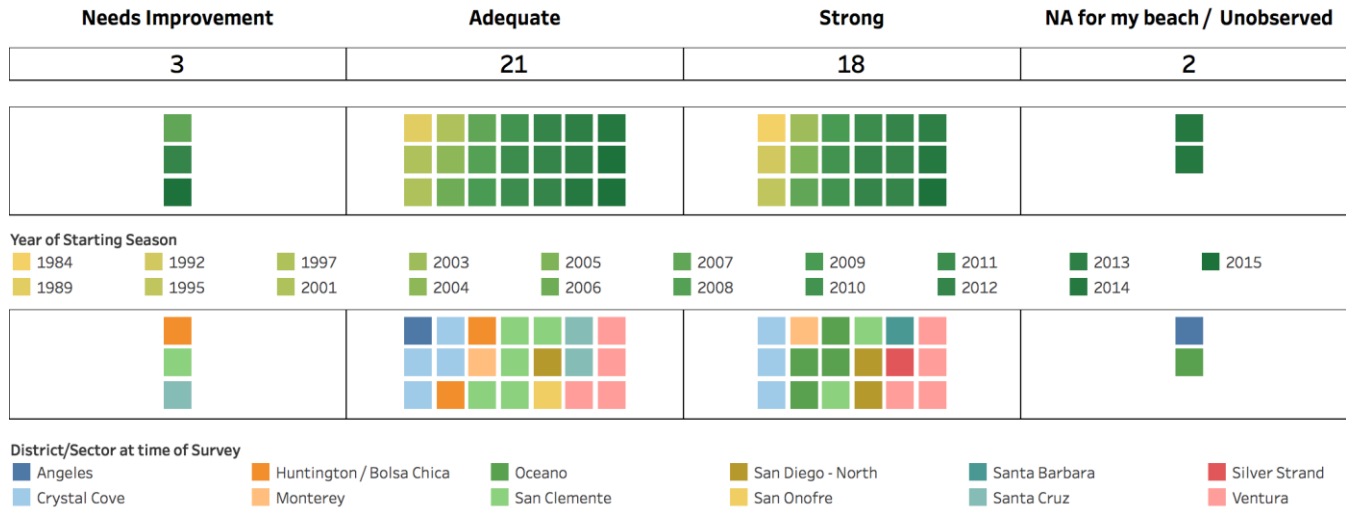
Appendix D

Lead lifeguard Rating of Rookie Performance Categories by Starting Season and District/Sector at Time of Survey

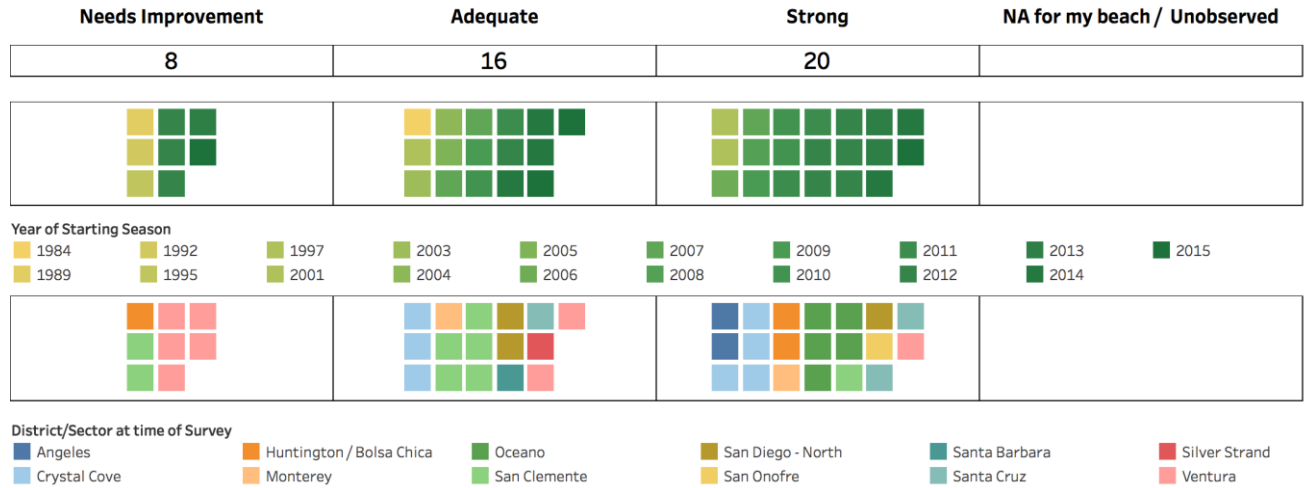
Lifeguard Training Performance Category: Chain of Command



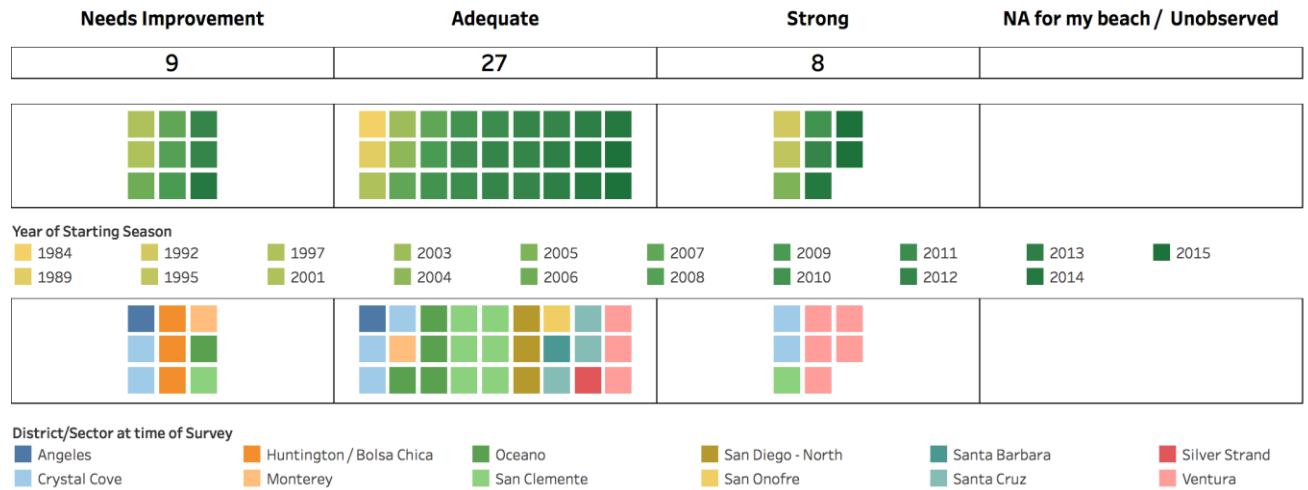
Lifeguard Training Performance Category: Employee Relations



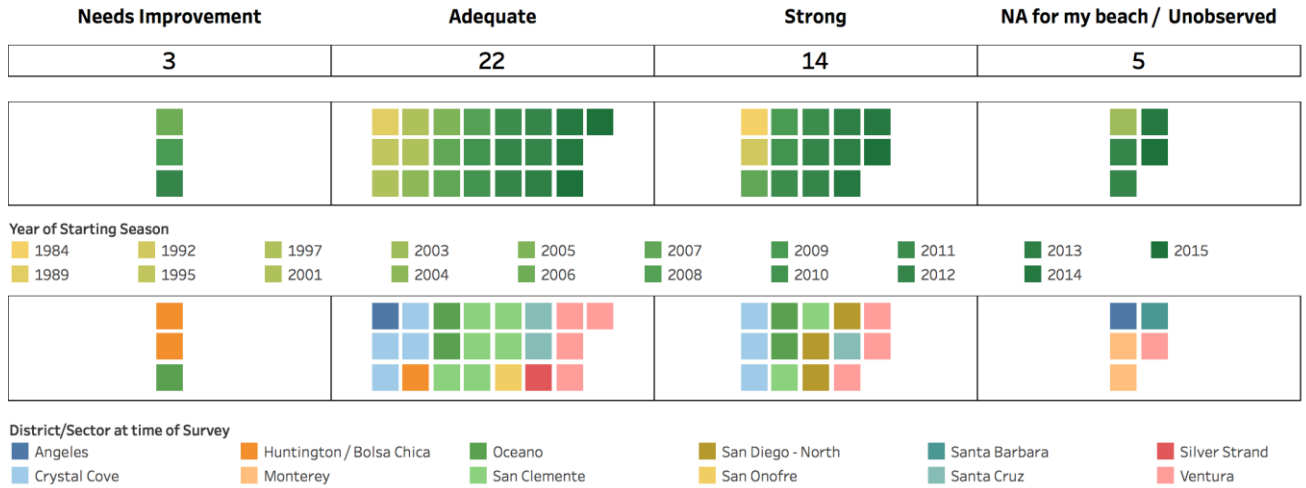
Lifeguard Training Performance Category: Identifying Rip Currents / Ocean Hazards



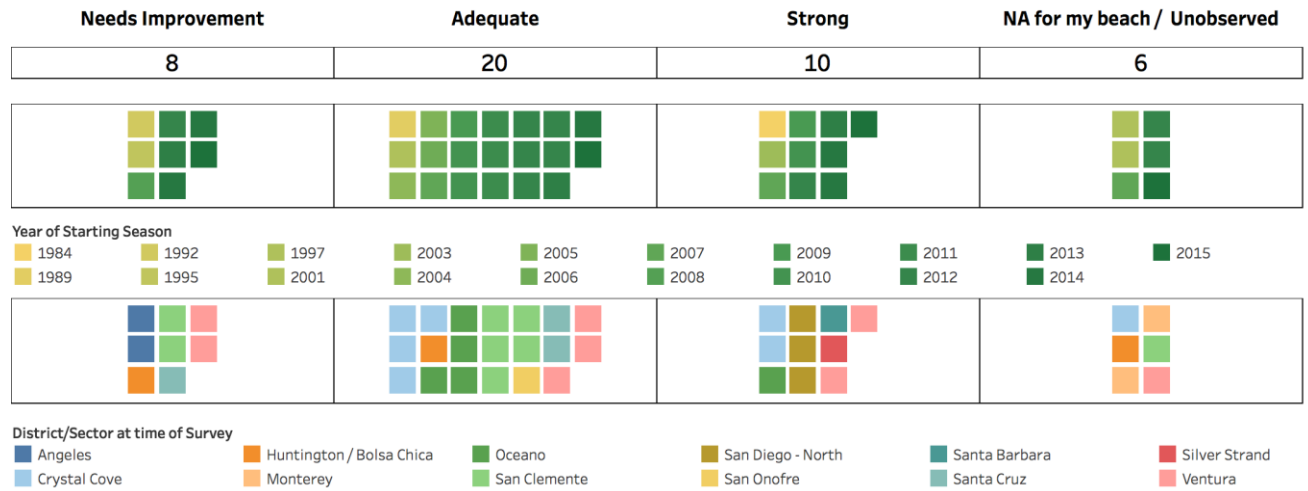
Lifeguard Training Performance Category: Knowledge of Rules and Regulations



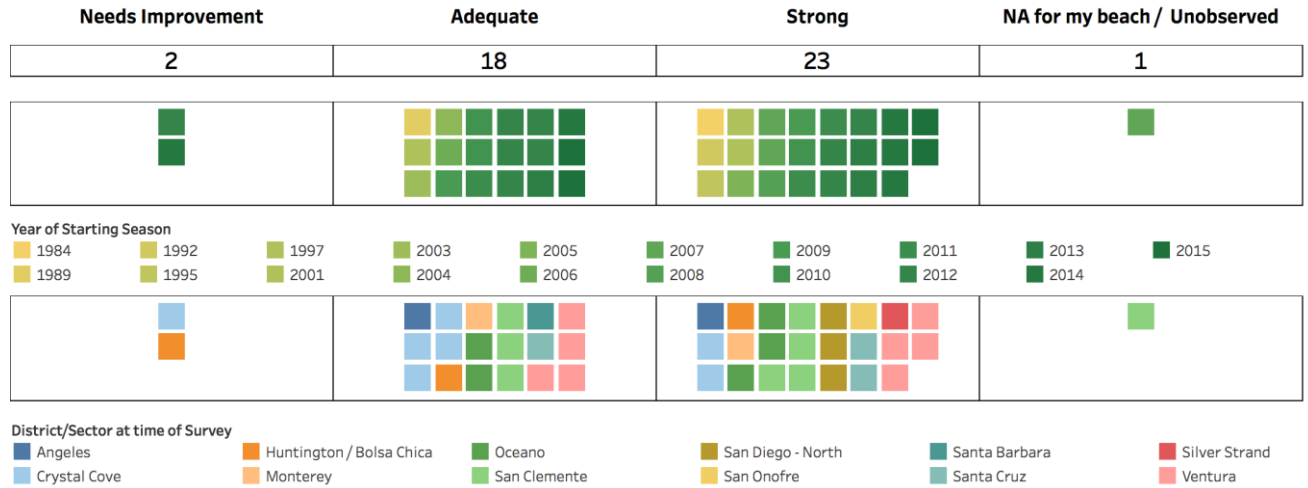
Lifeguard Training Performance Category: Lost Children



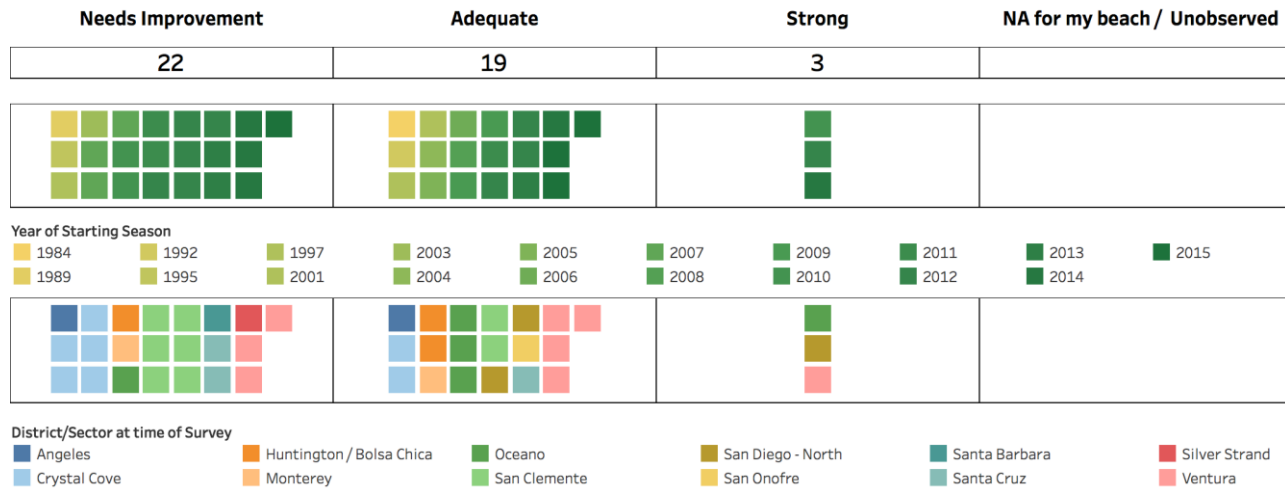
Lifeguard Training Performance Category: Major Medical Aids



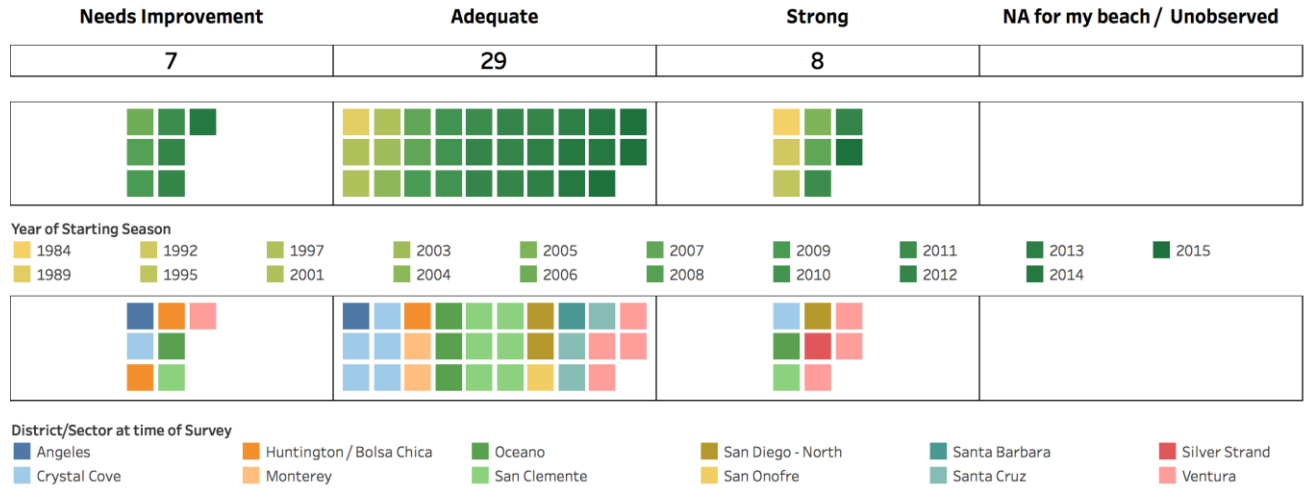
Lifeguard Training Performance Category: Minor Medical Aids



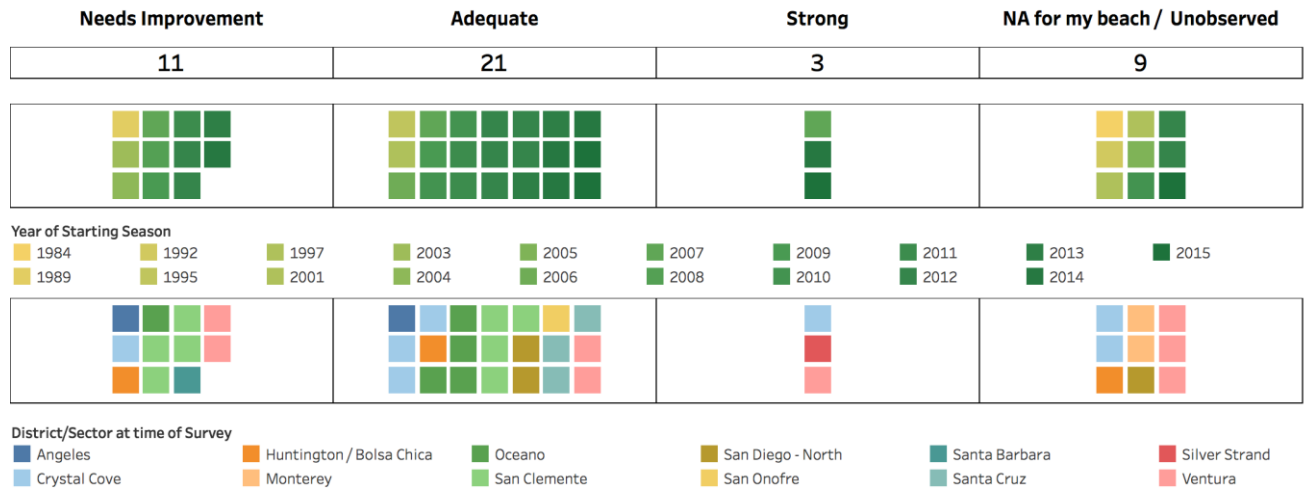
Lifeguard Training Performance Category: Phone and Radio Communications



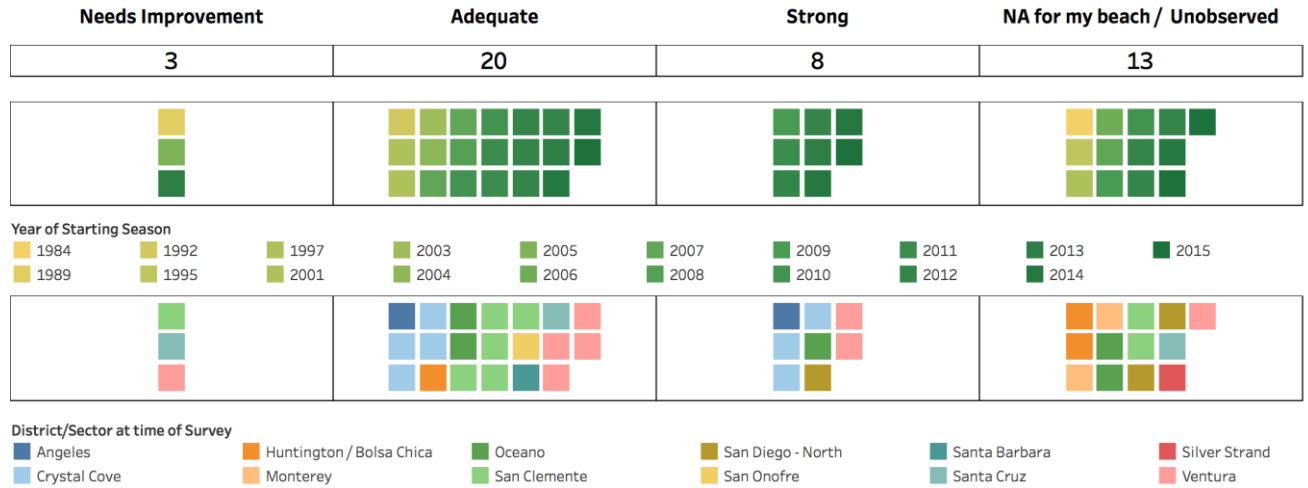
Lifeguard Training Performance Category: Public Contacts



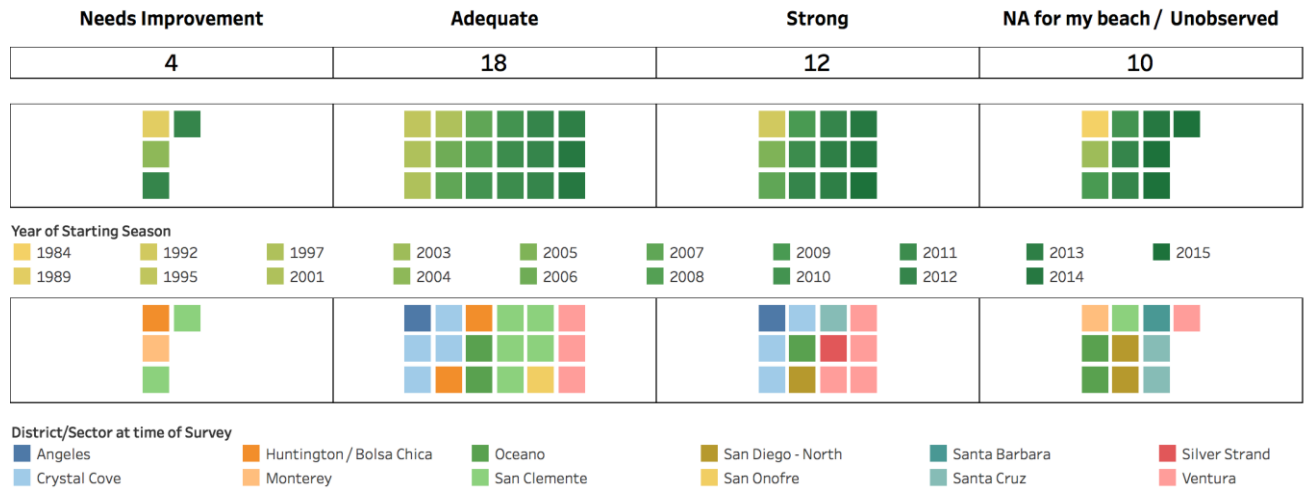
Lifeguard Training Performance Category: RWC Deckhand Operations



Lifeguard Training Performance Category: Rock Rescues



Lifeguard Training Performance Category: Sand Entrapment



Lifeguard Training Performance Category: Vessel Rescues

