Orangutan Veterinary Advisory Group

HYBRID Workshop 2023

Bali, Indonesia

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Orangutan Veterinary Advisory Group HYBRID Workshop 2023 Bali, Indonesia

Copies of all the Orangutan Veterinary Advisory Group (OVAG) Workshop Report of Proceedings can be found on the Orangutan Conservancy website, www.orangutan.com and the official OVAG website: www.ovag.org

All materials relating to this Hybrid 2023 Workshop can be found at

https://umnadvet.instructure.com/login/canvas

with proper login information sponsored by the

University of Minnesota College of Veterinary Medicine, U.S.

Participating Organizations/Groups In Person:

American Association of Zoo Veterinarians

Bali Wildlife Rescue Center (Indonesia)

Borneo Orangutan Survival Foundation – Samboja Lestari, Nyaru Menteng (Indonesia)

Centre for Orangutan Protection (Indonesia)

CSIRO – Australian Centre for Disease Preparedness (ACDP)

Dick White Referrals (UK)

Estonian University of Life Sciences

Frankfurt Zoological Society Jambi (Indonesia)

Forum Konservasi Leuser (Indonesia)

General Hospital Buleleng District (Indonesia)

Gibbon Conservation Society (Malaysia)

International Animal Rescue -Bogor (Indonesia)

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IUCN Conservation Planning Specialist Group (CGPSG)

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Sumatran Rescue Alliance (Indonesia)

Taman Safari Indonesia

The Aspinall Foundation Indonesia Program

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Supporting Organizations:

Orangutan Conservancy, United States **Wildlife Health Australia**

Arcus Foundation (US) **Fort Wayne Children's Zoo (US)** **The Orangutan Project (TOP)**

Australia Chester Zoo/NEZS, United Kingdom

And our in country host:

Gadjah Mada University

HOSTED VIRTUALLY ON CANVAS BY:

University of Minnesota, U.S.

The OVAG community also continues to contribute to our Canvas site with materials provided by:

Orangutan Veterinary Advisory Group Workshop

July 23-27, 2023

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Bali July 23-27, 2023

Section One

Executive Summary

Budget

Executive Summary

Greetings OVAG Community,

Congratulations to us all on another successful hybrid workshop for 2023!!!

This year, to further our dream of becoming more global, we have partnered with Wildlife Health Australia who has brought us many new friends throughout the Southeast Asian region to join us. Together with our long-standing association with the IUCN Small Apes Section, we continue to grow our connections and friendships.

As promised from last year, we have increased our commitment not only to wildlife conservation, but also to our own conservation by dedicating more time and resources to our mental health and overall wellbeing. The balance of the workshop was dedicated to the continued concerns over orangutans and gibbons behavior and rehabilitation, infectious disease and surveillance, dentistry, anesthesia, and wildlife forensics. Summaries of this year's workshop topics are presented in this report, however, we encourage you to check our Canvas OVAG CPD (https://umnadvet.instructure.com/courses/321) to get the full materials and recorded sessions of the workshop.

We are glad to report that our WhatsApp Group has been active all year long and is continuing to be an amazing resource for us all to stay connected and to enable us to reach out as needed to our growing community for assistance and support. We are also continuing to load our Canvas platform with new and developing information so please remember to check back often throughout the year. Your OVAG committee will continue to meet regularly throughout the year to plan upcoming webinars, develop strategies for our own growth and effectiveness, and of course to organize OVAG 2023!!!!!!!.

Speaking of 2023, OVAG will be entering a new phase, and at the workshop, we asked to hear from you on how you want the network to continue. We incorporated all your suggestions into an updated Theory of Change,and have sent it to all in December 2022 for final input before ratification at the beginning of 2023. We will soon be forming a new collaboration with Wildlife Health Australia (WHA), World Organization for Animal Health (WOAH), Wildlife Disease Association (WDA) and Wildlife Conservation Society (WCS) to assist in a South East Asian region-wide disease surveillance network – more on that to come soon!

Once again, we wish to thank everyone for participating, contributing to and supporting the important work we all do and in making and sustaining OVAG!

In solidarity,

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Orangutan Veterinary Advisory Group Workshop

2023 Budget

(US Dollar – rounded up after approximate conversions from Australian Dollar and Indonesia Rupiah)

International air fares	5,152.00
Regional airfares	6,156.00
Ground transportation	1,013.00
Hotel accommodation	21,663.00
Office expenses/T-shirts,semnar kit, etc.	940.00
Miscellaneous (CoVid Preventive Measures, medications, etc.)	220.00
Multimedia Live Streaming	1,600.00
Regional Admin Assistance (F.Sulistyo)	6,000.00
WHA Airfares	13,860.00
Workshop Total	**56,604.00**

Orangutan Veterinary Advisory Group Workshop

Bali July 23-27, 2023

Section Two

Agenda

Participant Contact list

Live Sessions Agenda

OVAG WORKSHOP 2023
ONLINE AGENDA

	Sunday, 23 July 2023	Monday, 24 July 2023	Tuesday, 25 July 2023	Wednesday, 26 July 2023	Thursday, 27 July 2023
DAILY THEME:	**Linking One Health with Behaviour Ecology of Asian Apes**	**Wildlife Disease Surveillance**	**Clinical: Anesthesia & Dentistry**	**Wildlife Forensic**	**Mental Well-being**
08.30 - 08.40	Welcome remarks. Intro to Canvas OVAG CPD. OVAG's community values.	10 minutes mindfulness session. Session 1. Widlfie Disease Surveillance: Drawing the Picture from the Field - OHHLEP - WOAH National Representatives 5 countries - MOZWE (Thailand)	10 minutes mindfulness session. Session 1: Anesthesia in great apes Dr. Aleksandr Semjonov (Estonian University of Life Sciences)	10 minutes mindfulness session. Session 1: Wildlife Forensics: - Wildlife Forensic Academy (TBC) - Dr. Klarisa Salim, Sp.FM (RSUD Buleleng)	10 minutes mindfulness session. Session 1: Managing our well-being in our workplace: Dr. Shefali Mehta (Open Rivers Consulting Associates)
08.40 - 09.00					
09.00 - 09.30					
09.30 - 10.00	Session 1: Panel discussion on Orangutan & Gibbons Behaviour Ecology Panelists: - Made Wedana (The Aspinall Foundation - Indonesia Program) - Susan Cheyne (IUCN Section on Small Apes) - Felicity Oram (ORANG JUGA/HUTAN) - Anne Russon (York University)	break			
10.00 - 10.30			break		
10.30 - 11.00				break	break
11.00 - 11.30	break	Session 2: Wildife Disease Surveillance Where does it fit in the System: tools of the trade - ACDP/ BRIN - PSSP IPB - Primate Microbiome Project - WCS / Wild Health Net. - SOCP Smart Patrol team - WildHealth Bridge	Session 2: Wildlife dentistry Dr. Gerhard Putter (Mulberry Vets, Sudbury, Suffolk & Dick White Referrals, Cambridge UK)		
11.30 - 12.00	Session 2: Panel discussion: How to Rehabilitate & Reintroduce Orangutans and Gibbons. Panelists: - Agus Fahroni (BOSF) - Popowati (OFI) - The Aspinall Foundation - Fabianus Sinaga (FZS)			Session 2: Molecular Forensic & Field Sampling - Singapore National Park - Dr. Jonathan Clayton (University of Nebraska Omaha)	Session 2: Continue from Session 1 Dr. Shefali Mehta (Open Rivers Consulting Associates)
12.00 - 12.30					
12.30 - 13.00			break		
13.00 - 13.30	break	END OF DAY 2		END OF DAY 4	break
13.30 - 14.00					
14.00 - 14.05	5 minutes mindfulness session				
14.00 - 14.30	Session 3: Applying Behaviour Ecology into Apes Welfare & Reintroduction Assessment: Update from the Enclosure Design Tool (EDT) Project: EDT Team University of Birmingham		Session 3: Break out group: working on scenarios under the theme of emergency&critical care, anesthesia, and cardiology. Online participants are welcome to join during the reporting back session after break-out group work at 14.15 - 15.00		Workshop evaluation: Joepardy game (inspired by the U.S. television game Jeopardy). Online participants are welcome to observe.
14.30 - 15.00					
15.00 - 15.30			break		
15.30 - 16.00	END OF DAY 1		Session 4: Primate dentistry DEMO session: Dr. Gerhard Putter (Mulberry Vets, Sudbury, Suffolk & Dick White Referrals, Cambridge UK)		This is the end of the workshop for online participants. Feedback and evaluation form will be sent on a later date.
			END OF DAY 3		

ALL SESSIONS WERE RECORDED AND UPLOADED ONTO THE OVAG 2023 MODULE,

CANVAS PLATFORM UNIVERSITY OF MINNESOTA

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Orangutan Veterinary Advisory Group Workshop

Section Three

Proceedings

Day One Sunday, 23 July 2023 **Main theme: Linking One Health with Behavior Ecology of Asian Apes**

Welcome from the OVAG Committee and Ice Breaker. Introduction to the OVAG CPD (Continuing Professional Development). Review of OVAG's community values.

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/2023-workshop-opening-evaluation-and-concluding-remarks

Session One: Panel Discussion on Orangutan and Gibbon Behavior Ecology

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/orangutan-biology-and-behaviour-ecology-update-2023

This year, the workshop was started with a refresher session about orangutan and gibbon behavior. For those who are working in the rehabilitation centers, our goal is to have a successful reintroduction. An orangutan is considered successfully reintroduced if they can:

Survive and thrive / Reproduce / Perform their ecosystem service

Conservationists need to prove the three aspects above. To measure if reintroduced orangutans are reproducing, we can do population census and distribution surveys. To measure ecosystem service, we can do biodiversity surveys. To measure survival, we do behavior observations to prove if their behavior mimics wild conspecifics.

In this panel discussion, two researchers who are experts in wild orangutan and gibbon behaviors were invited to speak:

Dr. Susan Cheyne (the Vice-Chair of the IUCN Primate Specialist Group Section on Small Apes, Co-Director of the Borneo Nature Foundation International, and a Senior Lecturer at the Oxford Brookes University. Susan has studied gibbon behavioral ecology and conservation for over 25 years, both wild gibbons and those rescued from the illegal wildlife trade. She was the first person to study the rescue, rehabilitation and post-release of gibbons in a scientific way to develop guidelines for effective reintroduction of gibbons and for monitoring the success of the reintroductions based on wild gibbon behavior. Through the SSA, Susan is coordinating work to increase our knowledge of gibbon health and diseases and identify the gaps in our understanding to help improve the effectiveness of gibbon welfare and husbandry in rescue centers and zoos.

Dr. Felicity Oram (the Co-Director of Orang JUGA, member of the IUCN Primate Specialist Group on Human - Primate Interaction, member of the IUCN Primate Specialist Group on Great Apes, Program Development Advisor of HUTAN and Supervisor of Research Students at the University Malaysia Sabah -Institute of Tropical Biology and Conservation). With a broad range of ape and other primate experience spanning over 30 years, Felicity has worked in captive husbandry, rehabilitation, and wild field research. For the past 15 years, she has specialized in the behavioral ecology and conservation of orangutans and other primates living in human-transformed habitats in Sabah, Malaysian Borneo. She works with wildlife departments, oil palm growers, tourist operators, and local communities to mitigate conflict and support coexistence in mixed-use landscapes. Felicity also works through IUCN groups to update policy and mentors practitioners to better manage human-primate interactions in the field.

The discussion was moderated by drh. Fransiska Sulistyo, (OVAG Committee member and OVAG Indonesia Representative, member of the IUCN Primate Specialist Group on Great Apes, and consultant and advisor in multiple rehabilitation centers in Indonesia).

During this open panel discussion, questions were generated from workshop participants, through a pre-workshop questionnaire. There were 5 main questions / topics raised:

1. What does a primate need to know about the forest? What are some key behaviors that the panelists find in wild orangutans or gibbons that rehabilitation centers need to focus on?

- *Gibbons: singing behavior is something that gibbons need to learn from their parents. They start to sing at around 2-3 years old and they need to learn the correct songs, to convey information. Therefore, it is important to have a role model in gibbon rehabilitation to teach them singing ability. Besides singing, all gibbons need to have enough exercise to develop their muscles optimally, use height to move about in the forest, and of course, to forage (look for, process, and consume food). It is important in rehabilitation centers that gibbons are taught all these skills. There is a Best Practice Guideline on Gibbon translocation and reintroduction from the IUCN (2015) that can be used as a reference.*

- *Orangutans: they vocalize instead of sing, but similar with gibbons (and other primates), they need to learn forest skills since they are young. In terms of foraging, orangutans are quite conservative (reluctant to try new things), so in the wild, they will watch what their mother eats, and their food repertoire will largely be like their mothers'. In contrast to popular belief, that orangutans are solitary animals, they actually have a strong sense of community. The Mother-offspring relationship is the strongest social bond in orangutans, and this has a significant implication in the orangutan rehabilitation process. Young orangutans in rehabilitation centers might be prone to bullying from other orangutans of their age or older, as they grow without "adult supervision".*

2. More specifically about gibbons:

a. Gibbon singing is specific in each species. Are there any observations of a rehabilitated gibbon sings the "wrong" song?

- *Singing in gibbons is a crucial part of their social skills, which contributes significantly to a successful reintroduction. Gibbon songs send many different signals/meanings that are not yet fully understood; therefore, one should be careful when trying to "teach" a gibbon to sing. For example, by playing a recorded gibbon singing to an unknowledgeable gibbon. Singing can mark a territory, or it can also be a warning to a hazard. In rehab centers, practitioners should attempt to have a 'role model' gibbon who can teach other (younger) gibbons. This was compatible with an experience from Kalaweit Center, where they observed that there are "good singers" and "bad singers" in their center, the good ones can teach other gibbons. In terms of mixed species, based on the panelist's experience, there has never been any incidence of a gibbon in a mixed species environment copying other species' song. Note that gibbons will be able to display full singing ability by the age of 6 years old.*

b. Are gibbons still considered a monogamous species?

- *In general, yes, but based on the panelist's observations, there could be a gibbon group with more than 1 reproductive female and / or reproductive male. Gibbon parents could also raise an offspring that is not their biological offspring.*

c. Has there been any observation of gibbon surrogate mothering or adoption of another's offspring?

- *Not to the best of our current knowledge (from panelists and participants in the room).*

3. How long does it take for an orangutan to get to know other orangutans in the forest?

-Orangutans, again being social creatures, need to learn a lot of survival skills from other orangutans. They are visual learners, so they learn from seeing others doing. In the wild, mothers will be their main teacher, but in rehab centers, this learning development will be obtained from other orangutans of the same age, and from multiple individuals. A vet from COP agrees with this observation, she shared her experience when dealing with an orangutan with low forest skills. By giving it a chance to look at other orangutans processing food, it was easier for it to learn the skills. In the wild, orangutan mothers do not actively teach their offspring, but it is the babies who are interested in watching what their mothers are doing, e.g., when eating or when building a nest.

4. Are orangutans territorial?

- Wild orangutans are born in a social structure that they will grow familiar with. Offsprings will stay with their mother until about 7-8 years old. After that, females will stay in the same area with their mother, and as a result there will be around 5-6 individuals who know each other or may be related to each other in one area (a "neighborhood"). Male orangutans will roam a much farther distance from their mother's range, and once they are adult, they will visit several different "neighborhoods" to mate. This has an implication for practices such as wild-to-wild translocations. Females who are forced to move into a new neighborhood have a strong chance of being rejected and may not be able to survive due to unfamiliarity.

5. Can you share some information about learning development in orangutans/gibbons?

- In orangutans, when they reach 4 years old (1st molar teeth appear) it is a sign that they have started to actively forage and consume forest foods. When they are about 7-8 years old (2nd molar teeth appear), it signals that they will start to build their own nest and separate from their mothers. Once a male is about 14-15 years old, they will leave their birth area and start a nomadic life.

- The panelists also observed that male orangutans have slower dental development than females. Female orangutans will have their complete set of teeth by around the age of 10 years old, while the males reach this stage at around 12 years old.

- Gibbons also learns a lot from their parents. Independent males will follow adult males more and the independent females will follow adult females. Between males and females, there seems to be different tasks in the family. For instance, females tend to find the shortest path to a feeding tree (maybe to conserve energy as they are raising babies) while males tend to take a longer path before reaching a feeding tree, maybe to "patrol" the area.

Session Two: Panel Discussion on Rehabilitation of Orangutans and Gibbons

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/orangutan-biology-and-behaviour-ecology-update-2023

Four panelists headed this discussion who have many years' experience in orangutan and gibbon reintroduction programs:

Fabianus Sinaga (Manager, Pengian Orangutan Reintroduction Station-Bukit 30 National Park, Frankfurt Zoological Society (FZS), Jambi, Sumatra). Fabianus graduated from Atmajaya Univesity, Jogjakarta, Indonesia majoring in Biology. He has been working with orangutan reintroduction program for 7 years.

Agus Fahroni (Senior Vet, Borneo Orangutan Survival Foundation (BOSF), Nyaru Menteng, Central Kalimantan). Agus graduated from Veterinary Faculty, Institut Pertanian Bogor (Bogor Agriculture University), Indonesia. He has been involved in orangutan rehabilitation and reintroduction for 17 years.

Popowati (Senior Vet, Orangutan Foundation International (OFI), Pangkalanbun, Central Kalimantan). Popo graduated from the Veterinary faculty, Airlangga Univeristy, Surabaya-Indonesia. Popo has been working with orangutan rehabilitation and reintroduction for 19 years.

Made Wedana (Country Director of The Aspinall Foundation-Indonesia Program, Bogor, Indonesia). Made is a biologist who has been involved in various conservation organizations for 30 years. He has extensive experience ranging from birds to orangutans and gibbons, both as a researcher and as a manager.

The discussion was moderated by Citrakasih Nente (OVAG Committee and SOCP Head of Ex-Situ Conservation Division).

The topic of orangutan and gibbon rehabilitation has been discussed many times in the past OVAG workshops. This year, drh. Citra tried to generate the discussion on several specific issues that are relevant to practices today.

1. Rehabilitation and reintroduction of adult orangutans, more specifically, males.

- All three panelists from orangutan rehabilitation centers agreed that adult male orangutans are more challenging. Ideally, orangutans are rehabilitated and reintroduced at a young age, at around 7-8 years old. However, rehab centers would often have to rescue, or have handed over, adult orangutans. BOSF and OFI both use island-style enclosures or rehabilitation sites for these orangutans. OFI has man-made islands, while BOSF Nyaru Menteng has natural river islands (up to 100 ha in size). These islands provide a natural environment where adult orangutans can learn to navigate in a forest environment, while still enabling some control and provisioning from the human caretakers. Some issues that were experienced in the management of these island are about competition for space and food among orangutans. Older orangutans also tend to need a much longer time to learn forest skills and learning to adapt to new environments (especially those that have been kept in cages for a significant period). Mixing them with 'smarter' orangutans will enhance the learning process, although it will still be a slow process, sometimes up to 5 years to be able to learn to climb a tree (OFI's example).

In the FZS jungle school, they do not have this kind of training island so they can only provide rehabilitation for juvenile orangutans who will go to a forest school daily (and return to sleeping cages in the evening).

2. Rehabilitation of baby/young gibbons.

-The Aspinal Foundation Indonesia Program has a lot of experience in Javan gibbon rehabilitation. They have rescued 76 gibbons to date and released 55 of them. Four births were recorded from the reintroduction program, while three individuals were confirmed dead. Rehabilitation of baby gibbons is more or less similar to orangutans. Babies are cared for by keepers when rescued at a very young age. Gradually they will be introduced to other babies to create a "playgroup" where they can learn to socialize. At around 2-3 years old, the staff will start looking at compatible pairs to be rehabilitated and hopefully reintroduced together.

TAF-IP follows the 2015 IUCN Best Practice Guidelines for Gibbon Reintroduction, although they acknowledge that there are many challenges in the field that need further modification and adjustments.

3. Dealing with the issue of human-bonding in orangutan and gibbon reintroduction.

-All four panelists agreed that this is one of the main challenges in ape reintroduction. They all mentioned using 'surrogate mothers' to care for young individuals, but these caretakers need to be consistent (the same 1 or 2 people throughout the 'childhood' period), so that the apes are not used to any human strangers. Gradually, as the orangutans are getting bigger, usually up to around 7-8 years old, the contact with humans should be weaned off and the relationship with their conspecifics should be encouraged. Apes in rehabilitation will need to bond with individuals that are of the same age/size. This grouping needs to be monitored and assessed continuously, as human intervention will still be needed to help with group formation/interaction.

The use of islands for rehabilitation for older apes is a good way to facilitate the weaning of human contact with the apes. In places like FZS (that do not have islands), their jungle school practices very minimal contact between the rehabilitated orangutans and the caretakers. The caretakers are only supposed to open the cage in the morning and provide food in the evening, and do not play/interact with the orangutans.

The Javan Gibbon Center also practices similar concepts as FZS, and shares the big challenge of breaking the human bond in their gibbons. For rehabilitated adult gibbons, the keepers only clean the cage and provide food. But this kind of minimal interaction still creates a certain degree of bonding between animal and human. The panelists also mentioned individual preferences and variation observed in orangutans and gibbons. Some individuals will bond strongly with their human caretakers, while others may not do so.

4. Mother-offspring relationship.

-There was a discussion about the impact of human-raised apes for their future reintroduction and about the phenomenon of mothers abandoning their offspring in the wild. All the panelists shared that their rehabilitation protocols practice the concept of surrogate mothers, or human-raised baby apes, as this is inevitable when they rescued baby orangutans/gibbons. Gradual weaning is the key for successful reintroduction, and as discussed earlier, is one of the main challenges in ape rehabilitation and reintroduction. The orangutan panelists, as they routinely rescue orangutans in the wild, did not see abandonment of mothers toward their offspring in the wild. There were instances where the mothers fled to save their lives (conflict with human, chased by a dog, etc.) and in doing so, the offspring failed to follow or was not carried.

An observation from HUTAN, an NGO which operates in Sabah Malaysia, shared that wild orangutan mothers often left their offspring, who are about 1-5 years old in a spot (e.g., tree), and would return to them eventually (days, weeks later?). This is not abandonment, but a natural outcome of mother and offspring relationship, especially in offspring who are at an age closer to weaning.

5. The issue of reintroduced orangutans returning to camps or human settlements or villages.

- For this issue, FZS observed that this happened more often with orangutans who are released as adults or have reached adulthood. Younger orangutans tend to keep in their original release site, while the adult ones will roam further and sometimes when approaching human settlements will be interested in them. OFI also sees this issue as a big challenge, since their release site is close to palm oil plantations. Sometimes adult orangutans will return to humans due to the sense of attachment. The panelists emphasized the importance of weaning when orangutans are still young and in their learning period. OFI shared their practice of changing from surrogate mothers or female caretakers who tend the babies, to male caretakers who tend the bigger ones. This change of caretaker figure also helps with the weaning process.

There was a discussion about the use of negative reinforcement as part of the weaning process, but it was not so familiar among the panelists and participants. It was discussed that rather than making orangutans/gibbons afraid of humans, it is more important to make humans not that interesting for them. However, the practice of this concept may remain a challenge and provides room for further investigation/research.

6. The use of predator avoidance training in orangutans and gibbons.

-It is relatively common that rehabilitation centers give a training or simulation on predator species to orangutans and gibbons with the goal to show them the hazards that they need to avoid or handle in the wild. However, this kind of training needs some careful thinking: - Showing fake predators (e.g., snake) should never be done in the cage, because cage is a safe space for the orangutans/gibbons. Training on predators should be done in an environment where it provides animals with the option to escape (which is the expected behavior). In gibbon practice, predator avoidance training sometimes stimulates them to form a group in order to chase the predator away.

- TAF IP shared their experience of "introducing" a fake leopard to teach their gibbons. However, the result was varied. Some individuals understood the hazard well and fled, but there had been an incident of a reintroduced gibbon approaching a (real) leopard in the wild and got killed.

7. Gibbon translocation.

-TAF IP does not have such experience, although in the past there had been a consideration of moving a small population of Javan gibbon to a better area, but it did not progress. Translocation would need a comprehensive analysis of the area. In terms of reintroduction, ideally, gibbons are released as a pair. However, due to the skewed

sex ratio of rehabilitated gibbons at TAF, they now have started to reintroduce individual gibbons as a reinforcement program to an (established?) wild population. There have been successful results from this practice.

Final conclusions:

Ape rehabilitation and reintroduction is indeed challenging and there are many aspects yet to be understood well or proven to be the most effective practice. Sharing among practitioners will greatly benefit the improvement of knowledge and practice in individual centers/organizations. More importantly, rehabilitation and reintroduction programs must always put the safety of the wild population as the priority. Reintroduction programs should not harm the wild population.

Session Three: Applying Behavior Ecology into Apes Welfare and Reintroduction Assessment

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/enclosure-design-tool-the-edt-project-update-2023

(This is an update from the Enclosure Design Tool (EDT) Project)

2023 is the final year of a 4-year EDT Project funded by The ARCUS Foundation which was done in collaboration with BOSF Nyaru Menteng and SOCP.

Susannah Thorpe started by presenting some information on the behavioral ecology of both wild and rehabilitant orangutans from the research literature, complementing the panel discussion on this topic in the morning session of the first day. In particular, she focused on the kinds of skills that rehabilitant orangutans tend to lack which contributes to getting enough energy to thrive in the wild:

1. Deciding where to eat, what to eat and how to eat
2. Travelling safely and efficiently off the ground
3. Building strong and safe nests in which to rest properly at night
4. Building resilience to enable individuals to adapt to adverse conditions and recover from them

In addition to developing, refining and testing the tools they have developed for centers to quantify which skills their orangutans have and which need to be strengthened and developed, EDT reported that Ricko has been working on foraging and food processing skills in rehabilitant orangutans at SOCP, while Nadine has been analyzing the details of nest building skills in both wild and rehabilitant orangutans. The EDT team hopes to be able to present an update on those projects at OVAG next year!

Jackie explained the change in names for the tools and clarified the differences between them. The overall project is still called the Enclosure Design Tool (EDT), but the tools are now called the Enclosure Design and Husbandry Tool (EDHT) and the Monitoring and Release Assessment Tool (MRAT). The EDHT is the foundation for improving welfare and rehabilitation success, and includes all aspects of enclosures, husbandry, and welfare. It provides detailed data to help you to ensure that your enclosures and husbandry practices are the best they can be (both for welfare and to support release success), but it is more time consuming to collect.

The MRAT is designed to address key issues influencing release success, by quantifying whether individuals have the key skills to thrive in the wild. Once the EDHT has been carried out on an enclosure, the MRAT can be used to monitor ongoing welfare and release-readiness, assess whether individuals have the core wild skills before release, and quantify whether individuals have successfully adapted to the wild after release. This tool enables quicker collection of data and is focused on individuals. Jackie explained the process of using the MRAT and gave a demonstration of the analysis that the online tool provides. This highlighted how detailed information relating to the core skills is needed to determine whether orangutans are ready for release. For example, individuals may be making mostly new nests rather than reusing old ones, but if they are using mostly simple techniques (like gathering loose material together), they may not have the skills to build strong and safe nests in the wild.

Finally, Nadine provided an update on the progress of the work with BOSF Nyaru Menteng on the EDHT, and both BOSF and SOCP on the MRAT. In the EDHT part of the project they are collecting data on the locomotion, cognition

and social behavior of orangutans in Nyaru Menteng, then using this baseline data to recommend changes to enclosures and husbandry procedures to develop missing core skills. They will also collect post-release data, and since they have been collecting data on a 'treatment' group of individuals who have been through the EDHT modifications process, and a 'control' group who have not, they will be able to determine whether this process improves adaptation to the wild in the treatment group. Nadine and the wonderful team of data collectors she has trained at BOSF have now hundreds of hours of baseline data on orangutans in enclosures, forest school and pre-release islands, and they are currently analyzing this data to prepare recommendations for modifications. Nadine has also been busy training staff at both BOSF Nyaru Menteng and SOCP-Medan to collect data using the MRAT, and again they are beginning to analyze the first data from that process. Nadine also tested everyone's knowledge of orangutan behaviors (see the presentation on behavioral dentification that has been loaded on to our Canvas site) in an exciting and hard-fought quiz!

The take-home messages were:

The need to allow opportunities for orangutans to express wild-type physical and mental behaviors from arrival at the sanctuary until they are released. The importance of studying detailed behavior, not just broad classifications, as key skills needed in the wild can be missed. That the interconnectedness of different measures is useful – you can use one behavior to provide motivation for the animal to perform another. The importance of using the orangutans' free time to build skills.

Over the next year they will be applying to the ARCUS Foundation for funding to complete the final stages of the project – Finalizing the EDHT and MRAT tools and providing training and support for sanctuaries that would like to use the tools. Do get in touch with the EDT team if you would like to be involved with this process over the next 3 years!

Day Two Monday, 24 July, 2023 **Main Them: Wildlife Disease Surveillance**

NEW! Ten minute mindfulness session

Session One: Wildlife Disease Surveillance: Drawing the Picture from the Field

Canvas OVAG CPD Link (Wildlife Disease Risk Analysis):
https://umnadvet.instructure.com/courses/321/pages/an-introduction-to-wildlife-disease-risk-analysis-update-2023

And

Canvas OVAG CPD Link (Wildlife Health Surveillance):
https://umnadvet.instructure.com/courses/321/pages/wildlife-health-surveillance-in-se-asia-an-introduction-2023

Presenter: Steve Unwin,(Program Manager for International One Health)

To help us make sense of the chaotic system we live in, WDRA (Wildlife Disease Risk Analysis) is both a process and a tool to assist us with contextualizing and managing disease in these chaotic systems. The WDRA manual, published in 2014, is freely available through the IUCN website. As scientists, we are provided skills in how to explain the world around us that can help society understand, care about, and manage how we work within it. As humans, we are the story-telling apes, attempting to explain the world around us. WDRA is simply a way of thinking, matched with an objective tool, to assist decision-making when faced with uncertainty in health or disease challenges. WDRA provides pathways to solutions scientifically and tells the story in a way that should be easily understood.

The WDRA process as many applications. For those who would like to find out more, check out the manuals and guidelines on the OVAG CPD, or consider taking the course (details via CPSG or WHA).

WDRA Mini Workshop: Communicating the Problem, facilitated by Fabiana Lopes Rocha (Project Officer IUCN CPSG, WDRA facilitation specialist) fabiana@cpsg.org

In preparation for a full orangutan-focused wildlife disease risk analysis, participants at the 2023 OVAG workshop were asked about the main drivers of disease risk in orangutans. There deliberations can be found on our Canvas CPD An Introduction to Wildlife Disease Risk Analysis - Update (2023): OVAG CPD (instructure.com).

Wildlife Health Surveillance in SE Asia – Steve Unwin

Based on discussions from 2022, we have brought in global, regional and local players in wildlife health surveillance. We hope the material shared here goes beyond just knowledge sharing but helps us develop a truly integrated network for wildlife health surveillance.

What makes a healthy system? If humans are animals, and pathogens don't recognize geopolitical boundaries, and every new host is an opportunity for pathogen adaptation, why do we persist in setting ourselves apart from the rest of the animal kingdom when it comes to pathogen susceptibility? This page starts to tackle how we might approach this issue. The first section reintroduces the importance of systems thinking and a One Health approach when dealing with infectious and non-infectious diseases across all species, including our own. it then highlights surveillance in action in our region. The second section introduces tools and processes that help us actually do surveillance, including a discussion on overcoming challenges in a world that is increasingly speaking with a One Health voice, but continuing to act in a siloed manner.

Systems Thinking:

What is systems thinking and why does it matter to wildlife health? Steve gives an overview of this fundamental concept that will help us improve the wildlife disease events we are faced with. How this is linked to One Health, and, based on information shared on disease surveillance at OVAG 2022, why we need to become experts in systems thinking if we are to improve wildlife health.

Tools and Processes:

Demonstrate the importance of wildlife health understanding to successful One Health outcomes. It provides information on a range of processes, tools, and opportunities for improving wildlife health capacity in the region.

Day Three: Tuesday, 25 July, 2023 **Main Theme: Clinical: Anesthesia and Dentistry**

Ten minute mindfulness session

Session One: Great ape anesthesia 2023

Canvas OVAG CPD link: https://umnadvet.instructure.com/courses/321/pages/anesthesia-on-great-apes-2023-with-dr-aleksandr-semjonov?module_item_id=16700

This year, we were very lucky to have Dr. Aleksandr Semjonov give a 2-hour lecture on great ape anesthesia. Dr. Semjonov is the Chief Clinical Officer, senior lecturer, and senior clinician at the Estonian University of Life Sciences, Institute of Veterinary Medicine, and Animal Science.

His talk covered some aspects on great apes anesthesia:

- Anatomy and physiological considerations of great apes, especially orangutans for an anesthesia procedure. Respiratory system and cardiovascular system are the two main system organs to be focused on.

- Risk reduction: preparation of the patient, justify the anesthesia protocol (never think "this is what we only have"), premedication, intubation, monitoring, and knowledge of resuscitation procedure.

- Several anesthesia drugs that are most used within the OVAG community: dissociative anesthetics (Ketamine, Tiletamine which is used in combination with Zolazepam, more commonly known as Zoletil or Telazol), alpha-2 agonist, butorphanol, isoflurane, fentanyl.

- Cardiac problems that are commonly seen from the use of such anesthetic drugs.

- Patient management, covering monitoring of heart rate, electrocardiogram, monitoring of blood pressure, and fluid management.

- Consideration when doing short-term anesthesia and long-term anesthesia

- Dental pain.

Following the lecture, workshop participants were involved in a group work to discuss several medical scenarios. There were five scenarios provided, and the results of the group discussion are provided in the ppts listed below which can be found on our OVAG CPD website along with Alex's presentation:

1. The case of a lethargic wild adult orangutan in a plantation.

2. The case of an injured young orangutan, presumably fell off a tree.

3. The case of a geriatric, obese orangutan in captivity.

4. The case of an anesthesia complication in a gibbon undergoing a dental procedure.

5. The case of a rescued adult orangutan that fell and nearly drowned in a river.

Session Two:

Great Ape Dentistry 2023

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/dentistry-page-update-2023

This year, we have the highly experienced vet dentist, Dr. Gerhard Putter who presented on dental management in orangutans. Dr. Putter has been concentrating on veterinary dentistry for the last 20 years. He has been a member of the Australian and New Zealand College of Veterinary Scientists (Veterinary Dentistry and Oral Surgery) since 2014. He is a diplomat of the European Veterinary Dental College, a EBVS® European Veterinary

Specialist in Veterinary Dentistry and also a RCVS recognized Specialist in Veterinary Dentistry, a member of the British Veterinary Dental Association (BVDA), a member of the European Veterinary Dental Society (EVDS), and a member of the European Association of Zoo and Wildlife Veterinarians (EAZWV). He is very involved in volunteering to perform dentistry for rescued wild animals and is currently involved with a brown bear rescue project in Armenia with International Animal Rescue (IAR) and The Foundation for the Preservation of Wildlife and Cultural Assets FPWC), and with Orangutan Veterinary Aid (OVAID).

In his talk (which is available on our OVAG CPD Canvas site), Gerhard shared some important points:

It is important for veterinary clinicians to recognize the importance of oral and dental health. Animals accept that without eating their chances of survival is minimal. They would even pretend to eat because: signs of lack of appetite or weakness would identify them as easy prey. Any admission of a problem could lead to the loss of their status within the group. It is very likely that they would continue to eat even with moderate pain. Anorexia because of oral pain indicates very severe pain.

Because of the challenges to identify problems, vets should consider:

- Use every possible opportunity during sedation, immobilization, or anesthesia to examine the oral cavity.

- Sedation for movement

- Anesthesia for health check

-Nervous system that is relevant to dental, i.e. the Trigeminal nerve.

-Anatomy of a tooth

-Oral pain: possible causes / conditions

-Crown damage and caries and the management of those conditions.

-Basic dental restoration materials

-Step by step of caries restoration

Gerhard also gave a demo and a bit of practical work on dental restoration using glass ionomer restorative material.

Case study on a complex dental problem was presented by SOCP. The presentation can be found on Canvas.

Session 3:

Break out group: working on scenarios under the theme of emergency and critical care, anesthesia, and cardiology

Day Four, Wednesday 26 July, 2023 **Main Theme: Wildlife Forensics**

Ten minute mindfulness session

Session One: Wildlife Forensic

Canvas OVAG CPD link: https://umnadvet.instructure.com/courses/321/pages/forensics-update-2023

This year we invited two speakers to address wildlife forensics:

Dr. Klarisa Salim, Sp.FM. (Forensic specialist, currently Chief of Forensic and Mortuary Installation at the General Hospital of Buleleng Distric, Bali; Head of Hospital Ethics and Law Committee). Dr. Klarisa teaches at 2 medical schools in Indonesia, and acst as a mediator at the Singaraja District Court, Bali.

Dr. Greg Simpson. (Director and Co-Founder of Wildlife Forensic Academy (https://www.wildlifeforensicacademy.com/)). He qualified as a veterinarian in South Africa, working in the United Kingdom, Central Asia and Africa. After receiving a Masters Public Health in Developing Countries, as well as a Masters in Wildlife Management, he began developing a unique training clinic for veterinary students in a resource limited community outside the Kruger National Park, South Africa. His Ph.D. was about Brucellosis in domestic animals, wildlife, and humans.

Dr Charlene Fernadez (graduate of Cornell, director of the Singapore National Parks Centre for Wildlife Forensics (CWF)). In July 2019, authorities in Singapore had seized 8.8 metric tons of ivory en route to Vietnam aboard a shipment from the Democratic Republic of Congo. Following the opening of the center in August 2021, it was the job of Charlene's team to analyze it. What they didn't realize at that time was that their work would become part of a breakthrough study, which used the same mode of forensic science adopted to arrest the Golden State Killer. The U.S. serial killer and rapist, who was arrested in 2018 and sentenced in 2020, was caught by using technology to trace family trees. But instead of serial killers, the Singapore wildlife center's DNA findings is being used to catch poachers. The CWF is the first of its kind in SE Asia, using forensics against wildlife traffickers.

During the 1 hour-session, Dr. Klarisa provided a basic understanding about the legal system in Indonesia, and the role of veterinarians in a criminal case legal process. She described that the legal system in Indonesia is Continental or Common law, where the Judge has a major role in making decision based on codification system.

Veterinarians and doctors are often asked to assist in a potentially criminal case and conduct examination on animals or human, both in dead and alive condition. The report, called Visum et Repertum will be used as an important material in court. The other role is to be an expert witness, where they will be asked to testify in a court. In Indonesia, the responsibility of a veterinarian in a forensic investigation is vast. In some cases, the veterinarian who are requested by the police or court to serve in a crime case can consider to seek extra information if they believe there is a greater expert in a particular aspect.

The ppt material of dr. Klarisa can be found on our Canvas site. Following up on this session, OVAG will collaborate with Dr. Klarisa again to hold webinar sessions where we will go into further details of: Preparing visum et repertum / Preparing medical records for animals that are evidence of a criminal case, starting from when the animal arrived until it is dead (therefore will need a necropsy report) or disposed to other location (e.g., for wildlife, ideally once their conditions have recovered, they need to be translocated back to the wild as soon as possible) / Managing evidence (dead and alive) / Determining cause of death

Dr. Greg provided us with a very interesting talk about what it takes as a professional (veterinarian) to be involved in a crime scene investigation. Basically, all veterinarians are trained in crime scene skills, however one needs to understand the legal perspectives, and a specific training in wildlife forensics will be of great benefit.

Crime scene skills consist of:

1. Inspection: consider the 5S:

    a. Scene? Is it a scene? Are there traces?

    b. Security? Secure yourself, your team, and the animal

    c. Support? Make sure you have support system to process the scene, e.g., the law enforcement, laboratory, clinic, etc.

    d. Survival? Is the animal dead or alive?

    e. Stress? How to record and manage stress in the animal

2. Documentation

    a. Take note of the 4W: when, where, who, what

b. Take photographs: far-middle-near

c. Collect information: species, sex, condition, identification, age, time of death, trauma,

welfare state, cause of death, etc.

3. Collection of forensics traces

a. Human traces

b. Non-human traces

c. Chemical traces

d. Physical traces

e. Digital traces

There are many practical tips that was shared during the talk, things like how to protect a crime scene (minimize disturbance from the investigators), taking photos with the right angle/lighting/scale, discussion how bullets type and trajectory might affect the type/location of wound created, as well as many types of wounds from different tools/attack. Overall, a vet should think systematically when doing examination, treatment, or necropsy on crime evidence.

Further, Greg shared the bigger picture of wildlife crime, which is the illegal wildlife trade. It can't be more emphasized that this is an organized crime, and most likely linked to other global scale crimes (drugs, guns, human trafficking).

Last but not least, Dr Charlene Fernandez presents a case study on the use of molecular tools forensically to tackle the illegal wildlife trade Download use of molecular tools forensically to tackle the illegal wildlife trade. Charlene highlights the importance of laboratory administration, sample handling and verification of the process of samples from enforcement authorities as part of the chain of evidence, for successful wildlife trade prosecutions. The use of molecular technology is illustrated by a case of illegal elephant tusk trade, seized in Singapore en route, where they could identify tusk origin not only to the area but to the specific herd, to allow enforcement on the spot, and provide evidence to convict syndicates for even larger crimes.

Session two. Field Sampling and the Primate Microbiome Project.

Presented by: Dr Jonathan Clayton, University of Nebraska.

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/wildlife-health-surveillance-in-se-asia-an-introduction-2023

Jonathan introduced the Primate Microbiome Project., proving the importance of a systems approach on the micro scale as well as the macro. The talk delved into the importance of the microbiome as a health promoter (in digestion, immune stasis, behavior, pathogen resistance, detoxification and drug metabolism), and how it should be considered in wildlife health surveillance.

Jonathan also conducted an in-the-room demonstration of field sample collection and processes from his fieldwork in Costa Rica and Vietnam. The methodology here is also aligned with broader wildlife health sampling techniques.

After the day’s sessions, participants of OVAG Workshop 2023 were invite to the Bali Zoo for a private tour and discussion.

Day Five: Thursday, 27 July, 2023 **Main Theme: Mental Well-Being**

Ten minute mindfulness session

Session One: Managing our well-being in the workplace – Dr. Shefali Mehta (Open Rivers Consulting Associates)

Resilience and Compassion Part 1

Introduction and Mindfulness Session

The importance of Caring for Ourselves (partial translation into Bahasa)

Q and A

Where do you draw Resilience from? Building Resilience

All videos from this session ca be found here: Self care and community resilience with Shefali Mehta (2023): OVAG CPD (instructure.com)

EVALUATION: JEOPARDY GAME

Canvas OVAG CPD Link: https://umnadvet.instructure.com/courses/321/pages/2023-workshop-opening-evaluation-and-concluding-remarks

As an evaluation tool, we run a game based on the TV show Jeopardy, where the participants are divided into 5 groups and compete. Questions for the quiz were taken from workshop materials. It is a fun and educational way to allow the workshop participants to refresh their memory of what was been learned during the workshop.

CLOSING

Thank you to everyone who attended our 2023 workshop both in person and on line!!!! You all help to inspire us and keep us going year after year. We will continue to be a united and communicative family as this year closes and another begins as we look forward to OVAG 2024!!!

Stay strong, stay healthy, stay positive and stay fun – remember, together we are mighty!!!!!!

There was a post OVAG Dentistry, Anesthesia and Cardiology Workshop coordinated by Orangutan Veterinary Aid and Borneo Orangutan Survival foundation, held at BOSF, Samboja Lestari, East Kalimantan, Indonesia. 28th July - 5th August 2023.

OVERVIEW FROM OVAID:

This workshop involved 11 participants from 5 orangutan rescue and rehabilitation centers within Indonesia and was developed as a result of original discussions between Orangutan Veterinary Aid and veterinary dental/ maxillofacial surgeon Gerhard Putter. Following a very positive smaller dental collaboration/workshop in December 2022 at SOCP, Sumatra, upskilling vets from 2 centers (SOCP and BOSF Nyaru Menteng plus a government vet), revealed the need for further dentistry training amongst the orangutan vet teams.

Participant organizations:

BOS Foundation, Samboja Lestari (Borneo Orangutan Survival Foundation, BOSF, East Kalimantan) caring for 121 Orangutan and 73 Sun bears.

BOS Foundation, Nyaru Menteng (BOSF Central Kalimantan) Caring for 276 Orangutan.

Orangutan Foundation International (OFI, Central Kalimantan) caring for 270 Orangutan and 18 Sun bears.

International Animal Rescue (IAR,West Kalimantan) Caring for 60 orangutan.

Sumatran Orangutan Conservation Programme (SOCP, Sumatra) caring for 60 Orangutan.

Tuition in Cardiology commenced with an initial assessment of the participants' current level of knowledge by Laurent Locquet in order that tuition could be pitched at the correct level. Generally it was found that knowledge was minimal - sadly all Indonesian participants stated this was a reflection on the lack of tuition given to the subject at undergraduate level. With Laurent providing drawings and explanations of basic cardiology facts plus questions on a daily basis to ascertain the level of retention of cardiology, initially this proved a little stressful for all the workshop candidates (although it was carried out in a friendly and encouraging manner), it successfully resulted in a definite increase in retention of knowledge by the end of the week. Sessions included basic theory on the anatomy of the heart and cardiac function, physical examination of the heart by auscultation and cardiac ultrasound, electrical conduction and the theory and interpretation of ECGs. All participants had one to one practical session in using the ultrasound with Laurents guidance.

Tuition in Anesthesia included drug therapies and practical and academic tuition in induction and maintenance of anesthesia and monitoring practices. Students were able to practice intubation and use of gaseous anesthetics, intravenous infusions and constant rate infusion practices using a syringe driver and how to deal with medical emergencies arising during anesthesia including cardiac and respiratory failure and hypotension. Participants allocated to this discipline on a daily basis were under the direct supervision of anesthetist Aleksandr Semjonov but tasked with decision making for drug choice for induction and maintenance and for undertaking these processes as well as ensuring and observing suitable recovery. New techniques to many included the use of propofol as a routine drug, the advantages of intravenous lidocaine pre intubation and extubation and the use of dopamine to correct hypotension in certain circumstances. The safe monitoring of anesthesia and the interpretation of the parameters shown on critical care monitors was given priority and was intensive.

Discussion revealed that the induction protocols for orangutan at the various centers varied widely but the specialist anesthetist was adamant that all protocols were valid and need not be changed - the most important factor was that whatever the protocol chosen, the maintenance and subsequent monitoring of the anticipated lengthy procedures was perhaps the most important feature of achieving a smooth, controlled and safe anesthetic. Following a discussion between the anesthetist Aleksandr Semjonov and Agnes Sriningsih it was decided that the center's standard induction protocol of Zoletil + ketamine would continue to be used throughout the 6 days whenever possible to maintain the resident vet team's familiarity and confidence with the routine. In some instances the protocol would be re-assessed and agreed with the resident vet team prior to administration where considered necessary.

Tuition in Dentistry covered tooth anatomy, innervation and local analgesic block techniques. Dental charting was explained and practiced and emphasis was made on the importance of always following a fixed examination routine to avoid any oversights. Decision making on oral health was addressed together with tooth health, extraction techniques and restoration methods. The use of an air driven dental machine (as provided by OVAID to BOSF Samboja) was both practically and theoretically covered, as was the cleaning and maintenance of the dental machine and which burrs to use for different cutting techniques. Particular emphasis was given to analgesia and pain relief and to the importance of a thorough examination of the oral cavity and not to ignore any irregularities, but to investigate with samples being taken whenever suspicious. It transpired that participants regularly observed abnormalities in the mouth's of their patients and the usual procedure was simply to 'note and observe,' even when suspicious. Gerhard was adamant that no lesion should be ignored and all should always be investigated and never left. A reported case of an orangutan in another center in which a tumor had been 'kept an eye on' for 4 years until it was inoperable was cited as an example to take action. Participants were given extensive teaching in the practical aspects of dental radiography together with interpretation of radiographs to ensure the identification of underlying problems which may not be evident at gross examination. Correct positioning and the complex technique of using bisecting angles to obtain maximum exposure of all tooth roots in both maxilla and mandible was also allocated extensive daily theory and practical teaching time until all participants were accomplished and felt comfortable. A large proportion of each day's teaching was given to the most effective and humane extraction techniques both closed and open extractions and gingival flap formation. Gerhard explained that this is perhaps

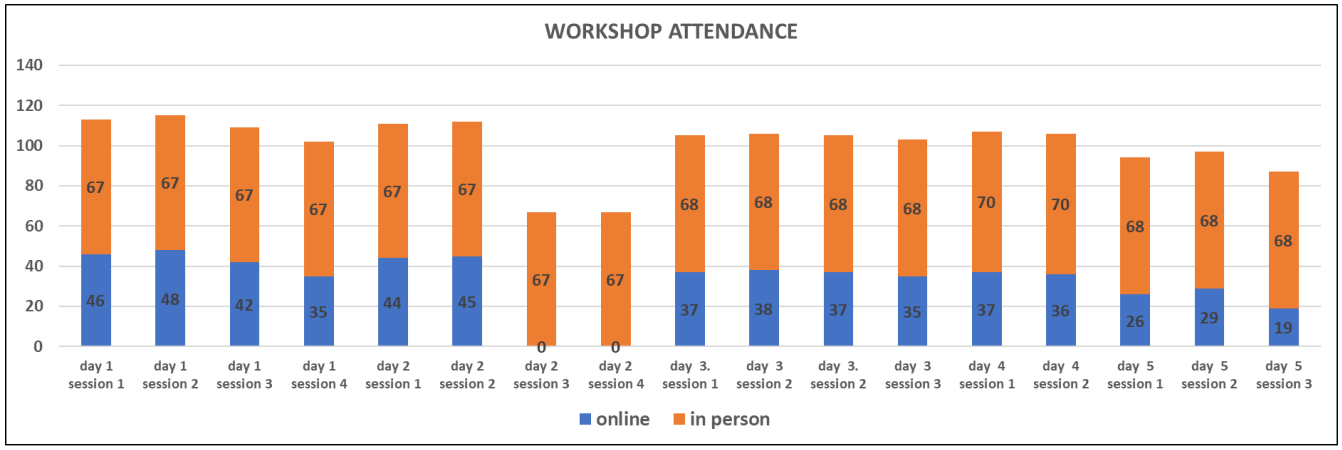
the commonest dental procedure the participants would be called upon to perform and so provided extensive demonstrations on a daily basis.

Orangutan Veterinary Advisory Group Workshop

Section Four

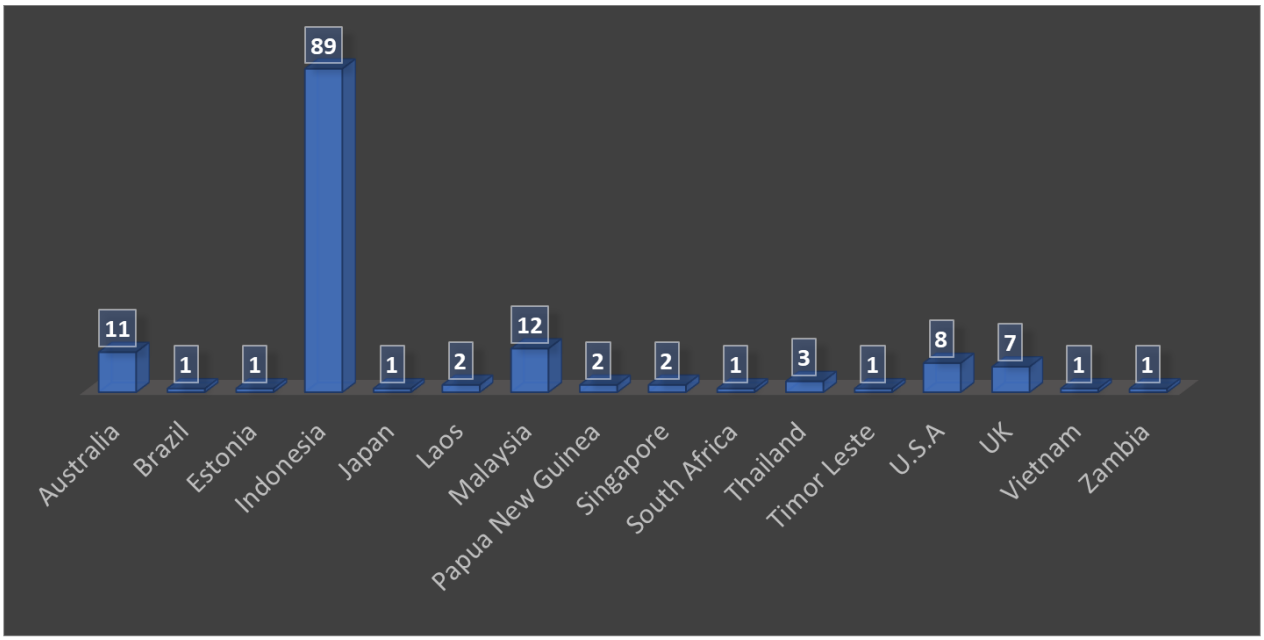
Appendices

OVAG 2023 Post Workshop Evaluation (prepared by Fransiska Sulistyo)

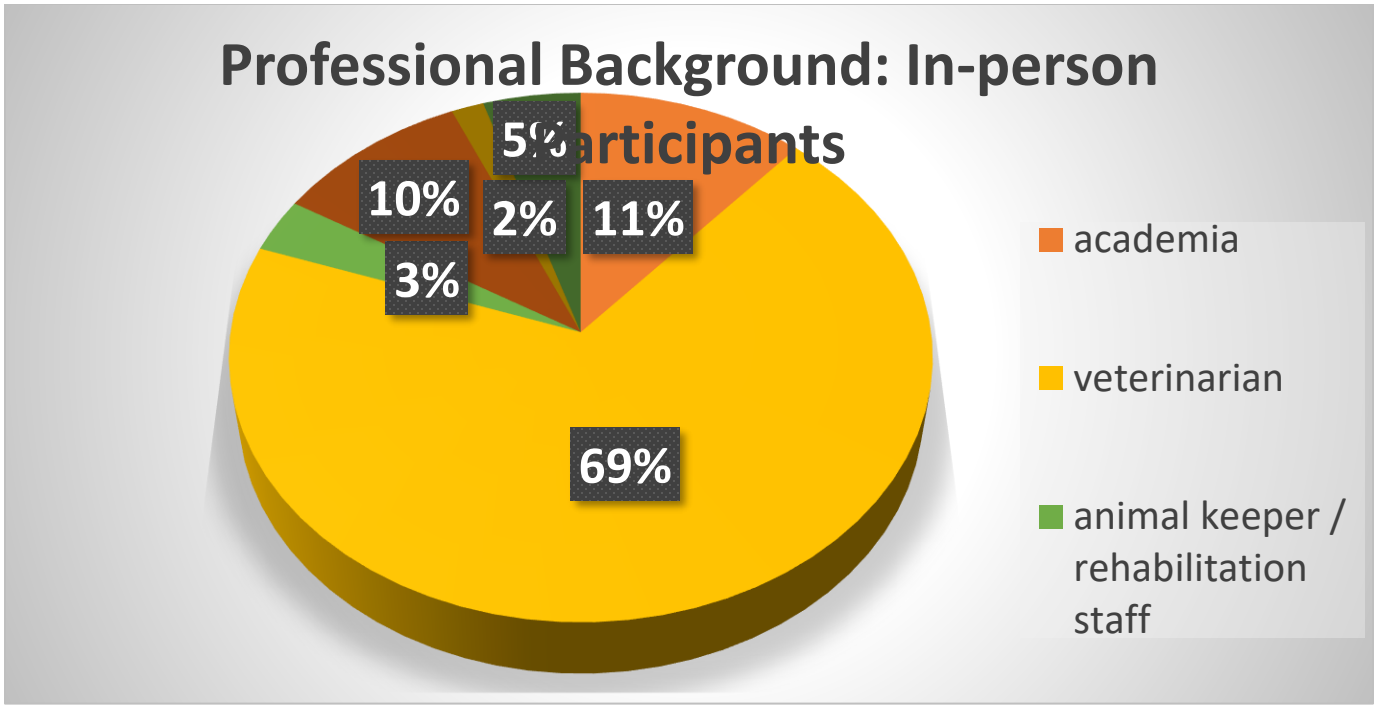


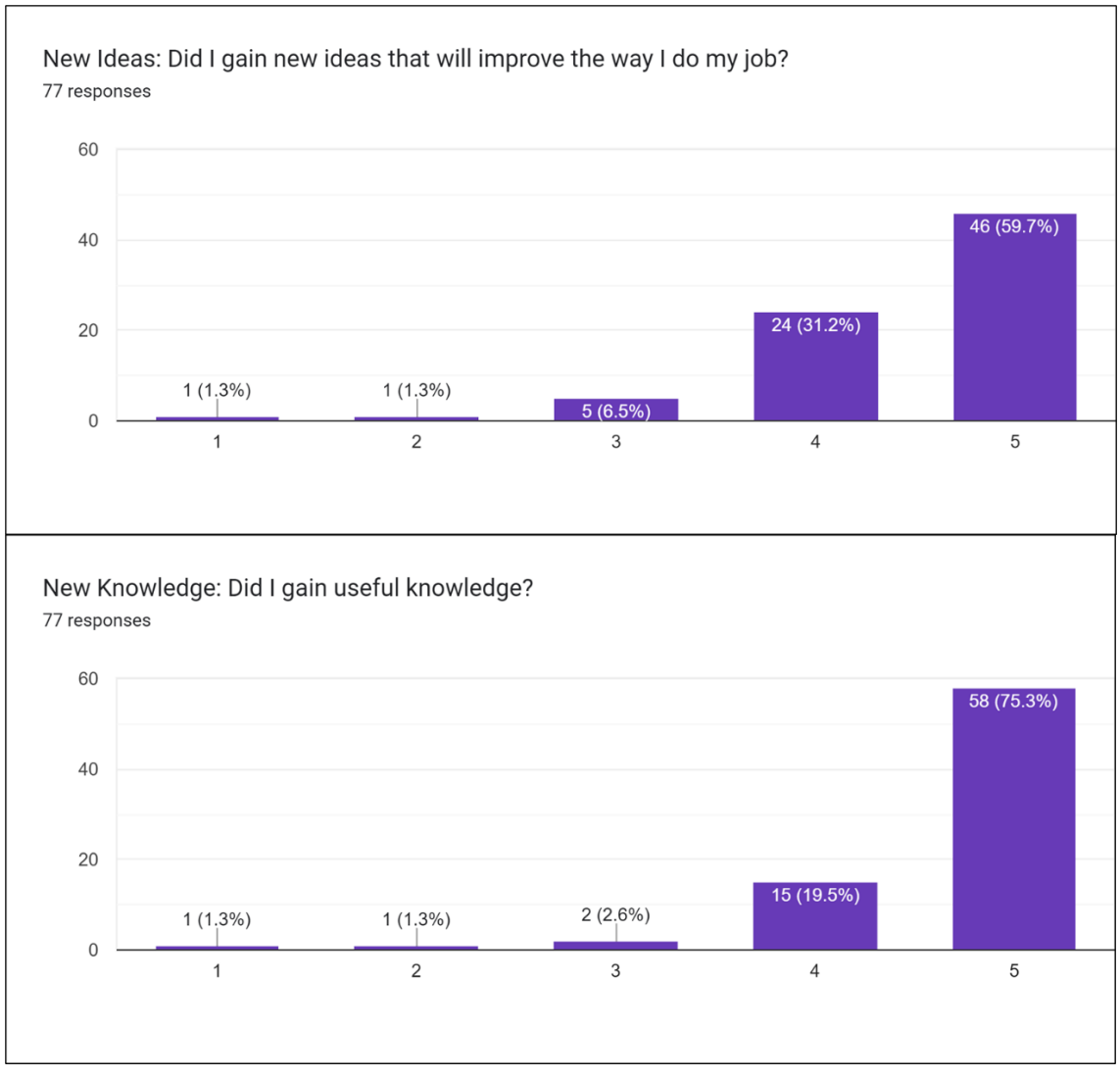
Participants:

- ❑70 in-person.
- ❑74 online, including presenters and panelists. On average each session was attended by 37 online participants (last year's average online attendance was 30).



Countries where participants were coming from / joining in online

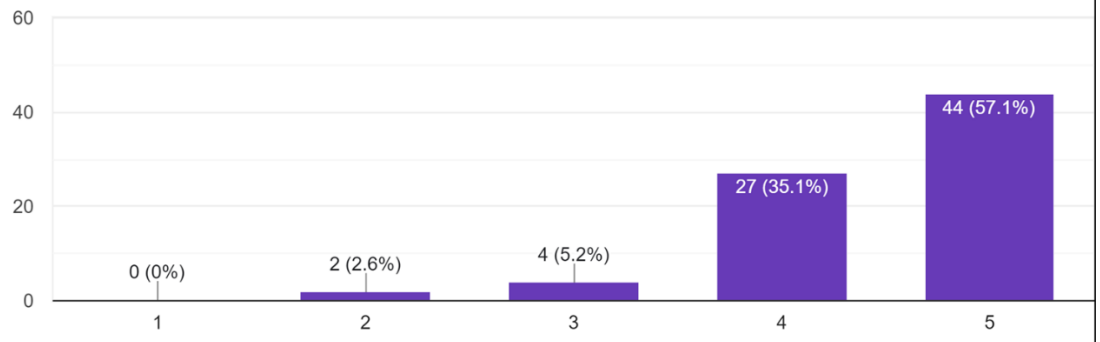

Professional Background: In-person participants
5%
10%
2%
11%
3%
69%
academia
veterinarian
animal keeper / rehabilitation staff


New Ideas: Did I gain new ideas that will improve the way I do my job?
77 responses
60
40
20
0
1 (1.3%)
1 (1.3%)
5 (6.5%)
24 (31.2%)
46 (59.7%)
1
2
3
4
5

New Knowledge: Did I gain useful knowledge?
77 responses
60
40
20
0
1 (1.3%)
1 (1.3%)
2 (2.6%)
15 (19.5%)
58 (75.3%)
1
2
3
4
5

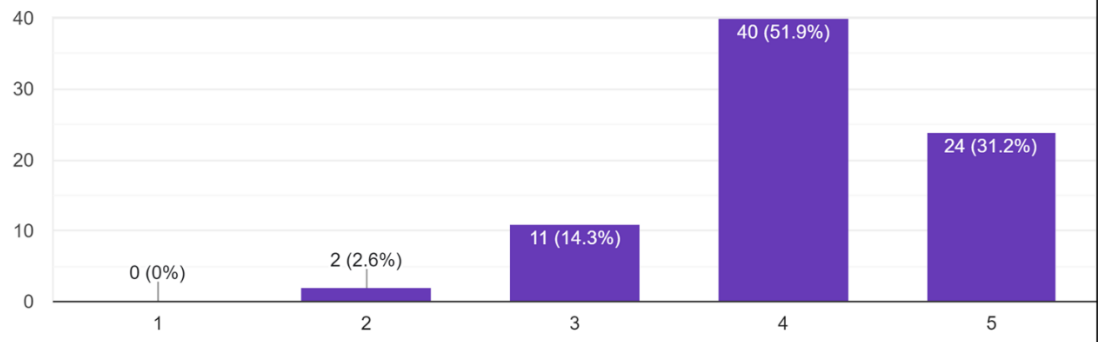
Applying the learning: Will I use the information?

77 responses



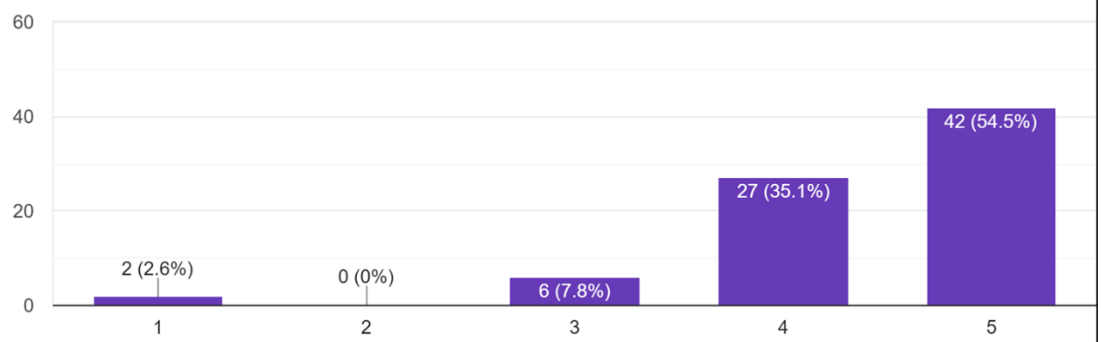
Applying the learning: Have I been shown how to impart this knowledge to colleagues and managers?

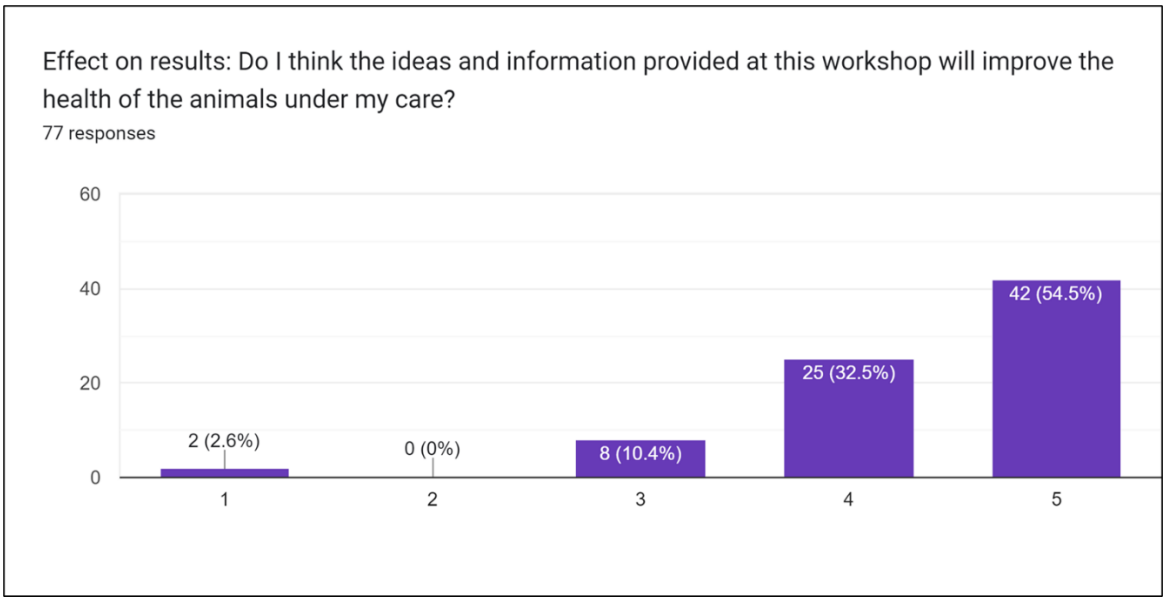
77 responses



Effect on results: Do I think the ideas and information provided at this workshop will improve the way I do my job?

77 responses





BEST THING

- Making friends, networking, share knowledge with varied speakers (23x)
- Anesthesia session (12x)
- Case sharing (11x)
- Forensics session (9x)
- Dentistry session (9x)
- Mindfulness session (8x)
- Orangutan behaviour, ecology, and management (5x)
- Clinical topics (3x)
- Evaluation session (2x)
- Time keeping
- Microbiome session
- Sample handling talks
- Balanced sessions of relaxing/well-being focus (mindfulness session, coffee breaks, day 5 mental health) with teaching/learning sessions.

THINGS TO IMPROVE

- Logistical aspects:
  - Unstable internet connection (4x)
  - Room too cold (3x)
  - Ppt materials / screen too small (2x)
  - Language barrier (2x)
  - Zoom link keep changing
- More of:
  - Practical sessions (9x)
  - Diagnostics / clinical topics (5x)
  - Mental health (5x)
  - Case study (5x)
  - Discussion time (4x)
  - Field visit
  - Soft skill building

THINGS TO IMPROVE

- Flow of the workshop:
  - ✓ Need better moderation / take care of the online participants (unclear opening/closing sessions/days) (4x)
  - ✓ Day 2: would have been better with shorter sessions, more discussion time (3x)
  - ✓ Time management
  - ✓ Day 1: would have been better if there is a visual (ppt) material before open panel discussion.
  - ✓ Suggest that each speakers provide key takeaways from each topic / follow up plan (2x)

- Ppt materials to be distributed to participants
- Contact list to be distributed to participants
- Forensic → more field-based
- Invite field team from other backgrounds
- Remove westerners from Jeopardy
- Mental health session: balanced with other speaker from different background?

APPLYING THE KNOWLEDGE

- Share / disseminate the new information with colleagues, supervisors, team member (29x)
- Adapting the new information/knowledge in the daily practice at home centres (23x)
- Improve SOPs at home centers (5x)
- Improve protocols/practice about anesthesia (4x)
- Networking with other centers (4x)
- Improve recording method/protocol on orangutan behaviour monitoring & enclosure design (3x)
- Apply techniques on handling difficult conversation (2x)
- Use materials to teach (2x)
- Improve dentistry practice (2x)

- Do WDRA
- Copy OVAG's evaluation method
- Apply mindfulness in daily work
- Better support their vets
- Start a framework research project for gibbons
- Start a collaborative microbiome project

TOPIC FOR NEXT YEAR

Asian Apes behaviour, management, rescue, rehabilitation, reintroduction:

- Orangutan behaviour & management, management of abnormal behaviour, enrichment improvement, positive reinforcement training (6x)
- Nutrition (6x)
- Animal welfare (4x)
- Release/translocation, habitat monitoring, post-release monitoring (4x)
- Rescue, human-orangutan conflict mitigation (3x)
- Management of wildlife around rescue center, macaques (2x)
- Disaster management (2x)

Mental well-being (3x)

Investigation, Research, & Surveillance:

- Wildlife forensic (6x)
- Scientific writing & research (2x)
- One Health in the field level, focused on animal husbandry (2x)
- Communication, public awareness, management of volunteers @ rehab center (2x)

CLINICAL:

- Disease diagnostic work-up, common diseases in Asian apes, management (12x)
- Anesthesia (4x)
- Radioimaging diagnostic (ECG, USG, x-ray, MRI) (3x)
- Oncology (3x)
- Opthalmology (3x)
- Dermatology (3x)
- Management of respiratory disease (2x)
- Management of gastrointestinal problems, infectious & non-infectious (2x)
- Emergency care (2x)
- Pathology (2x)
- Dentistry (2x)
- Cardiology (2x)