

ZIMS for Care and Welfare

[Contact Species360 Support](#)

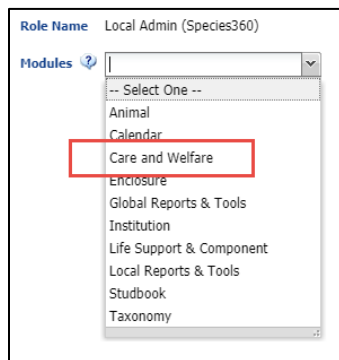
The ZIMS for Care and Welfare project, sponsored by 23 members, will streamline access to critical key care and welfare indicators by enabling ZIMS to systematically track and monitor inputs and outputs of animal care. This community project will expand insights available to our community in support of animal care, while following WAZA's 5-Domain model for welfare by monitoring behavior, physical health, environment, nutrition and mental domain.

- [Indicators](#)
- [Templates](#)
- [Chart](#)
- [Export](#)
- [Best Practices](#)

Activating Module

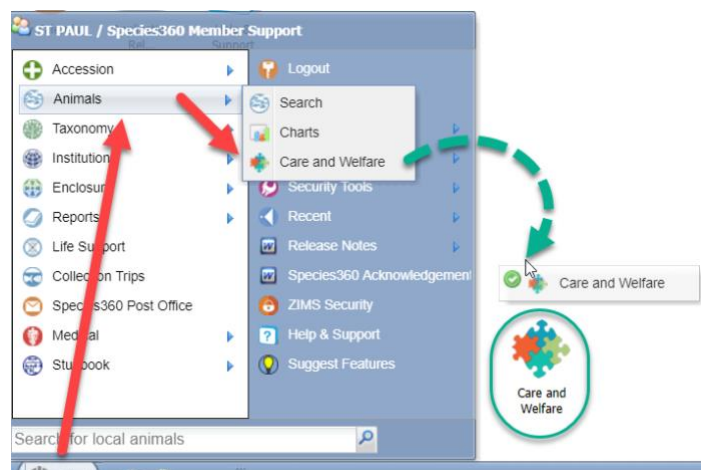
The Care and Welfare module is available by default; the Species360 Global Admin does not have to activate it for your institution. However, your Local Admin must turn it on for your institution. This can be done by going to Institution Preferences > ZIMS Accessibility and Features > Care and Welfare. [Click here for a guided walkthrough in ZIMS on enabling this feature.](#)

Access to the module is under Start > Animals > Care and Welfare. You may want to drag it to your desktop for easy access.



As with all ZIMS functionality the access to Care and Welfare is via your Role. Local Admin is the only Species360 template that has access to it. For

all others you will need to create, or add it to, a custom Role. Add/Edit Indicator and Indicator Value are required to be able to manage Indicators.



Indicators

Before beginning to record data in the system, you must first create templates and configuring indicators. These templates and indicators are institution specific so you design templates for YOUR needs. [Here is a list of the global indicators that are managed by Species360 and their definitions.](#)

Role Name: Keeper

Modules: Care and Welfare Turn on module functionality for this role

Functionality	Actions			
Care and Welfare Indicator	<input checked="" type="checkbox"/> Search/View	<input checked="" type="checkbox"/> Add	<input checked="" type="checkbox"/> Edit	<input type="checkbox"/> Remove
Care and Welfare Indicato...	<input checked="" type="checkbox"/> Search/View	<input checked="" type="checkbox"/> Add	<input checked="" type="checkbox"/> Edit	<input type="checkbox"/> Remove
Care and Welfare Measur...	<input checked="" type="checkbox"/> Search/View	<input type="checkbox"/> Add	<input type="checkbox"/> Edit	<input type="checkbox"/> Remove
Care and Welfare Report	<input type="checkbox"/> Search/View	Add	Edit	Remove

Indicators +

Filter by Category | Filter by Name | Filter by Value Type | Created by

Category	Name	Description	Value Type	Created By
Behavior	Abnormal/undesired behaviors	Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate	Numeric Scale	Species360
Behavior	Activity budget relative to goal	An overall assessment of the extent to which the animals activity budget	Please configure	Species360

When you open the Care and Welfare module the dashboard is displayed. On the left you see three options – Templates, Indicators and Charts. The Templates and Indicators have filter options at the top.

Indicators +

Filter by Category | Filter by Name | Filter by Value Type | Create

Category	Name	Description	Value Type
Behavior	Abnormal/undesired behaviors	Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate	Please configure
Behavior	Activity budget relative to goal	An overall assessment of the extent to which the animals activity budget matches an expected value, based on biology in the wild, behavioral goals established by caretakers, or other data.	Please configure
Behavior	Activity level	Frequency of characteristic movements or actions.	Please configure

You will first need to configure your Indicators. Select Indicators from the upper left to activate. If the Value Type says “Please Configure”, that Indicator has not yet been configured. You do not need to configure all the Indicators, only those you decide to use in your templates. Indicators will not appear for selection in templates if they are not configured.






Some things to consider when you are deciding what Indicators to configure are:

- Any Accreditation requirements
- Any legal requirements (does your state or city require certain monitoring?)
- What your Board wants to know
- What your Staff wants to know

The five categories were taken from the “Five Domains” model from “Caring for Wildlife – the World Zoo and Aquarium Animal Welfare Strategy”

<http://www.waza.org/en/site/media/publications-1264077522/waza-strategies>

- Behavior
 - Indicator’s that reflect the animal’s responses to their surroundings
 - Activity level, aggression, reproductive, parenting
- Environment
 - Indicators that relate to environmental parameters
 - Enclosure access, shelter, external impacts
- Mental Domain
 - Indicators that reflect the affect or disposition of the animal as observed by caretakers
 - Attitude, use of environment, general assessment
- Nutrition
 - Indicators that reflect the animal’s interaction with food and feeding processes
 - Consumption, food choices
- Physical Health
 - Indicators related to the animal’s physical and physiological responses to factors such as disease, parasites, injuries, and developmental abnormalities
 - Evidence of discomfort, fecal quantity & quality, mobility and appearance

 Behavior	Activity level	Frequency of characteristic movements or actions
 Behavior	Aggressive behavior	Aggressive behavior that seems typical for the species in terms of duration, frequency, motivation, or intensity.
 Behavior	Anticipatory behavior	Performance of behavior suggesting anticipation when the animal has a cue that possible reward(s) are imminent. For example repeatedly walking a path near an exhibit access door at feeding time or upon hearing/seeing animal care personnel.
 Behavior	Atypical aggression	Aggressive behavior that seems atypical for the species in terms of duration, frequency, motivation, or intensity.
 Behavior	Behavioral diversity	An assessment of the diversity of behaviors the animal typically performs.

You should read all the Descriptions to help you select the correct Indicator and Name. For example, you have a Board directed requirement to track all aggression that is outside the norm for the species. Reading the definitions, you would select Behavior / Atypical Aggression and NOT Behavior / Aggressive Behavior due to the Description.

Configure Indicator Value Type ✕

Behavior: Abnormal/undesired behaviors

Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate

Value Type *

Please Select ▲

Numeric Value
Press enter to select

Percentage

Numeric Scale

Binary Scale

The first thing you will be asked when you select the Please Configure option is to select the Value Type you want assigned.

What information you hope to record will drive the Value Type

- Binary - Yes or No options as defined
- Numeric Scale - Numbers with definitions. Example a “1” means excellent whereas a “5” means poor, or negative, neutral or positive
- Numeric Value - Free choice numbers with no definition
- Percentage - A rate out of 100

Behavior: Abnormal/undesired behaviors

Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate

Value Type *

Numeric Scale

Next: Define Scale Cancel

In our example for Behavior: Abnormal/undesired behaviors we selected Numeric Scale. We chose this Value because it will allow us to capture the degree of these behaviors, from none to many. We are then asked to “Define Scale”.

Define Scale

Behavior: Abnormal/undesired behaviors

Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate

Scale Min * 1 **Scale Max *** 3

Definitions

	Definitions	Expected Value/Range ?
1 *	No Abnormal/undesirable behaviors	<input checked="" type="checkbox"/> 4
2 *	A few Abnormal/undesirable behaviors	<input type="checkbox"/>
3 *	Many Abnormal/undesirable behaviors	<input type="checkbox"/>

Back Add taxonomic exception(s) **Save** Cancel

- 1-Use Scale Min to reduce the number of lines.
- 2-Use Scale Max to increase the number of lines.
- 3-Define what the numbers mean.
- 4-Select what you want as the Expected Value. Although indicating the Expected Value is optional, if anything other than that is entered you will get a warning in red that it is not what you desired it to be.
- 5-To define a different scale for a different taxonomy check this box.

Category	Name	Description	Value Type	Created By
Behavior	Abnormal/undesired behaviors	Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate	Numeric Scale	Species360
Behavior	Activity budget relative to goal	An overall assessment of the extent to which the animals activity budget matches an expected value, based on biology in the wild, behavioral goals established by caretakers, or other data.	Please configure	Species360
Behavior	Activity level	Frequency of characteristic	Please configure	Species360

Once the Value Type is Configured the Value will display in that column. If you want to edit the Value Type select the Edit icon. For most of our animals we want to capture only the 3 Values. But for our Primates we want more detail. We select to Edit.

Define Scale ✕

Behavior: Abnormal/undesired behaviors
Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate

Scale Min * **Scale Max** *

	Definitions	Expected Value/Range ?
1 *	No Abnormal/undesirable behaviors	<input checked="" type="checkbox"/>
2 *	A few Abnormal/undesirable behaviors	<input type="checkbox"/>
3 *	Many Abnormal/undesirable behaviors	<input type="checkbox"/>

Add taxonomic exception(s)

In the Define Scale screen we check the Add Taxonomic Exceptions box. The taxonomy selected can be at any node of the tree and you can select to include taxa below or not. Note that the Save button now says Next.

Define Scale

Behavior: Abnormal/undesired behaviors
Behaviors believed to be atypical of wild animals in form or frequency, includes self-harming and other undesirable behaviors that are not species-appropriate

Taxonomy *
Primates/Primates x Set 1 taxonomy

Include taxa below

Scale Min * 1 Scale Max * 5

	Definitions	Expected Value/Range ?
1 *	No Abnormal/undesired behaviors	<input checked="" type="checkbox"/>
2 *	Intermittent/Few Abnormal/undesired behaviors	<input type="checkbox"/>
3 *	Some Abnormal/undesired behaviors	<input type="checkbox"/>
4 *	Many Abnormal/undesired behaviors	<input type="checkbox"/>
5 *	Extreme Abnormal/undesired behaviors	<input type="checkbox"/>

Back Add another taxonomic exception Save Cancel

Because we want more detail in what we gather for our Primates (1) we have expanded the lines from 3 to 5 (2). We redefined the number scale (3) and checked our expected value (4). We do not want to add another taxonomy exception so we have unchecked that box (5) and Save.

Indicator is in use

Changes made to this indicator will also apply to previously recorded observations. Continue?

Yes No

For Environment: Interaction with Environment we have chosen a Value of Percentage. However, we recorded an Expected Range of 50-80% and we want to change it. When we select to edit we receive a warning that the Indicator is in use. We select Yes, understanding that any changes will also apply to previous records.

Configure Indicator Value Type

Environment: Interaction with environment
Evidence of exploration that demonstrate engagement/interest in the environment.

Value Type ?
Percentage

Next Cancel

Because the Indicator has been used in previous records we cannot edit the Value Type, it is greyed out.

Expected Values


Environment: Interaction with environment
Evidence of exploration that demonstrate engagement/interest in the environment.


No Expected Value Expected Value Expected Range


50 % - 100 %


Back

We can, however, change the Expected Values and we change the Expected Range maximum from 80 to 100, meaning we would like to see the animal use the entire enclosure.

Indicators 


 Chart

 Indicators

 Templates

Filter by Category


Category

 Behavior

If you do not find an Indicator and a Description that meets your needs, you can add a local one by selecting the green circle/plus sign Add New icon. The keepers have noticed that some members of our penguin colony are exhibiting excessive vocalizations. They would like to capture and compare it with other factors to see what may be causing it. There is not a Global Indicator to capture this so we will create a Local Indicator.

Select Add New.

Add New Indicator

Make this indicator available to other ZIMS institutions  1

Category *

Behavior 2

Name *

Excessive Vocalization 3

Description

Animal is exhibiting vocalization in excess of the norms/other colony members 4

Value Type *

Binary Scale 5

Available for All animals Specific taxonomic group(s) 6

Next: Taxonomic group(s) Cancel

1-Sharing Indicators is a coming attraction!

- 2-Select a Category from the five options
- 3-Name it so you will remember
- 4-Describe what you are trying to capture
- 5-Select Value Type. We have selected a Value Type of Binary because we want a simple Yes or No for the behavior.
- 6-We want this Indicator available only for our penguins so we check the Specific Taxonomic Groups checkbox.

Define Scale ✕

Behavior: Excessive Vocalization
Animal is exhibiting vocalization in excess of the norms/other colony members

Taxonomy *




Sphenisciformes/Penguins ✕ 1

Include taxa below

	Definitions	Expected Value ?
Yes *	Excessive vocalization is observed 2	<input type="checkbox"/>
No *	Normal vocalization is observed	<input checked="" type="checkbox"/> 3

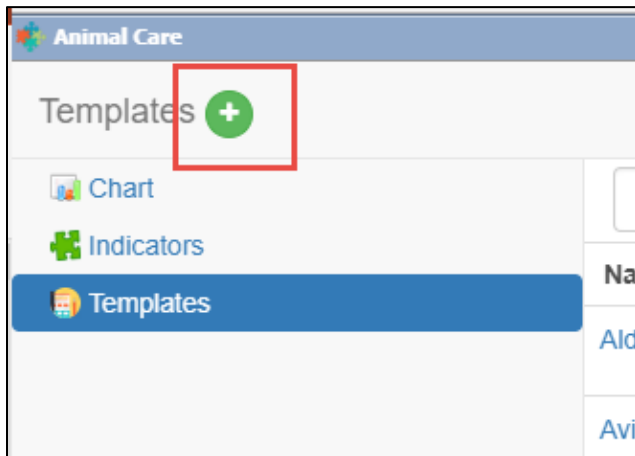
4 Add another indicator
 Configure this indicator for a different taxonomy

We limit the Taxonomy to penguins (1). We then define the Yes or No responses (2), checking the desired Value of normal vocalization (3). We then have the options to add another indicator or another taxonomy. We are done so we Save.

 Behavior	Atypical aggression	Aggressive behavior that seems atypical for the species in terms of duration, frequency, motivation, or intensity.	Please configure
 Behavior	Behavioral diversity	An assessment of the diversity of behaviors the animal typically performs.	Please configure
 Behavior	Excessive Vocalization	Animal is exhibiting vocalization in excess of the norms/other colony members	Binary Scale

The Behavior is added to your list of Indicators. The house icon indicates that it is a Local Indicator. Only your institution will have this Indicator available as a selection.

Templates













To create a template using the Indicators you have configured, select Templates and the Add New icon.




- 1-The name must be unique.
- 2-Select if you want to share with others or allow others to edit the template.
- 3-Select the entity you want the template to cover. If you do not have Animal or Enclosure Lists those options will not display for selection.
- 4-If you want to add another entity select Add Another. You can mix and match Animals, Enclosures and Taxonomy. When selecting Enclosures, it will pull from the current Occupants.
- 5-Select your Indicators. Checking the top level Category will select all the Indicators under it.
- 6-You can easily Add Another Template from here. You can select the same animals and/or the same Indicators.

Templates +

↻

Name	Created By	Created Date	Shared	Editable	
Aldabrans	Adrienne Miller	Jul 12, 2018	✔	✔	 
Aviary	Adrienne Miller	Jul 12, 2018	✔	✔	 
Aviary birds	Adrienne Miller	Jul 18, 2018	✘	✘	 
Chihuahuas	Adrienne Miller	Jul 12, 2018	✔	✔	 
Penguins	Adrienne Miller	Jul 23, 2018	✔	✘	 

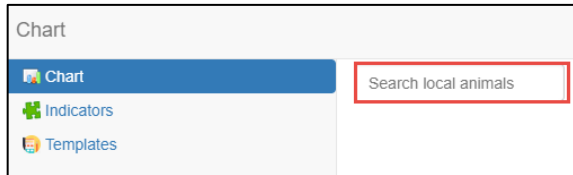
To use the Template, select the hyperlink from the list of Templates. This is also where you would edit or delete a template.

Date of Observation *	Observation Time	Observed By *		
9/5/2018	00 : 00	Adrienne Miller		
Animal	Environment	Behavior		Physical Health
	Interaction with environment	Abnormal/undesired behaviors	Excessive Vocalization	Evidence of pain/discomfort
Spheniscus / Penguin				
4 / Spheniscus demersus / African penguin	80 % 	1 - No Abnorm	vocalization is: 	Please Select
5 / Spheniscus demersus / African penguin	70 % 	2 - A few Abnormal/unde	Please Select	Please Select
6 / Spheniscus demersus / African penguin	%	Please Select	Please Select	Please Select
7 / Spheniscus demersus / African penguin	%	Please Select	Please Select	Please Select
8 / Spheniscus demersus / African penguin	%	Please Select	Please Select	Please Select
9 / Spheniscus demersus / African penguin	%	Please Select	Please Select	Please Select

Copy value to applicable blank rows (this action cannot be automatically undone)

Complete the template. Selecting the copy icon will copy the value in the remaining records in that column for any animals with the same Configuration for that Indicator. You do not have to complete all the fields to Save. Save and Repeat will save the data and keep the template open for additional entries.

Chart



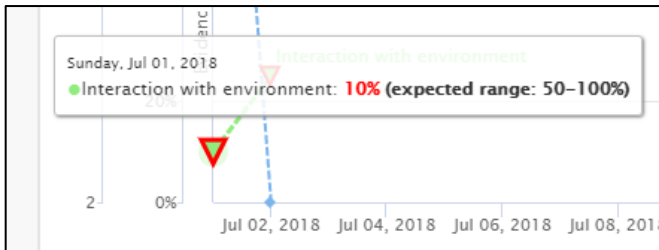
To view the Charts, select Chart and enter a GAN or other identifier.



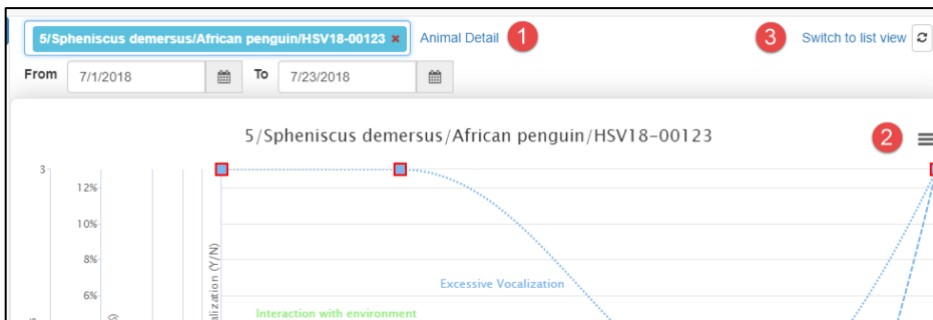
The Chart will display the data recorded during the selected date range.



You can filter the Indicators to make the Chart easier to read by clicking on them (see yellow below). If they are greyed out they will not display in the chart. By removing some Indicators we can easily see that Excessive Vocalization, Interaction with Environment and Abnormal/Undesired Behaviors appear to be related.



If an Observation is outside the desired Value/Range it will be outlined in red on the graph. Hovering over will display the desired Value.

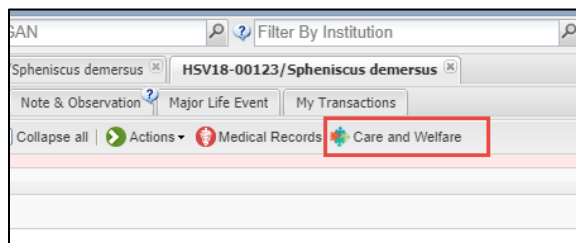


Other options in the Charts are:

- 1-Selecting Animal Detail will take you directly into the animal record
- 2-Selecting the hamburger icon allows you to print the Chart
- 3-Switch to List View will change the view

Date	Time	Category	Indicator	Observed By
2018-07-05		Environment	Interaction with environment	Adrienne Miller
2018-07-05		Behavior	Abnormal/undesired behaviors	Adrienne Miller
2018-07-05		Behavior	Excessive Vocalization	Adrienne Miller
2018-07-05		Physical Health	Evidence of pain/discomfort	Adrienne Miller
2018-07-04		Environment	Interaction with environment	Adrienne Miller
2018-07-04		Behavior	Abnormal/undesired behaviors	Adrienne Miller
2018-07-04		Behavior	Excessive Vocalization	Adrienne Miller
2018-07-04		Physical Health	Evidence of pain/discomfort	Adrienne Miller

List View shows the Observations in a list. The columns can be sorted in ascending or descending order. If you want to filter the list to fewer categories, simply uncheck (or press Enter when highlighted) the categories you do not want to see. You can edit or delete the observation from List View. This is also where any Notes would display.



From within the animal record you can open the Chart and have access to the List View by selecting the Care and Welfare tab at the top of the record.

Export

The Export option allows you to export data for an animal. You can export for multiple animals by using Animal Lists, Enclosures or Taxonomy.

Export Care and Welfare Data

Start Date: 6/1/2018 End Date: 9/26/2018

Animal
 Animal List
 Enclosure
 Enclosure List
 Taxonomy

5/Spheniscus demersus/African penguin/HSV18-00123

Add another

Indicators

<input type="checkbox"/> 12	<input checked="" type="checkbox"/> Abnormal/undesired behaviors	<input checked="" type="checkbox"/> Evidence of pain/discomfort	<input type="checkbox"/> Happiness
<input checked="" type="checkbox"/> Interaction with environment	<input checked="" type="checkbox"/> Excessive Vocalization	<input type="checkbox"/> Fecal quantity	<input type="checkbox"/> shared mental test 2
<input type="checkbox"/> test 1	<input type="checkbox"/> Kemal Test		
	<input type="checkbox"/> test		
	<input type="checkbox"/> use for program		

Entity Name	Scientific Name	Date of measurement	Indicator	Value	Scale	Observed By
5	Spheniscus demersus	2018-07-01	Abnormal/undesired behaviors	2.000000	1 - 8	Adrienne Miller
5	Spheniscus demersus	2018-07-01	Evidence of pain/discomfort	0.000000	0/1	Adrienne Miller
5	Spheniscus demersus	2018-07-01	Excessive Vocalization	1.000000	0/1	Adrienne Miller
5	Spheniscus demersus	2018-07-01	Interaction with environment	100.000000	%	Adrienne Miller
0	Spheniscus demersus	2018-07-02	Abnormal/undesired behaviors	2.000000	1 - 8	Adrienne Miller
1	Spheniscus demersus	2018-07-02	Excessive Vocalization	1.000000	0/1	Adrienne Miller
2	Spheniscus demersus	2018-07-02	Interaction with environment	100.000000	%	Adrienne Miller
3	Spheniscus demersus	2018-07-04	Abnormal/undesired behaviors	1.000000	1 - 8	Adrienne Miller
4	Spheniscus demersus	2018-07-04	Evidence of pain/discomfort	0.000000	0/1	Adrienne Miller
5	Spheniscus demersus	2018-07-04	Excessive Vocalization	0.000000	0/1	Adrienne Miller
5	Spheniscus demersus	2018-07-04	Interaction with environment	50.000000	%	Adrienne Miller
7	Spheniscus demersus	2018-07-05	Abnormal/undesired behaviors	3.000000	1 - 8	Adrienne Miller
8	Spheniscus demersus	2018-07-05	Evidence of pain/discomfort	0.000000	0/1	Adrienne Miller
9	Spheniscus demersus	2018-07-05	Excessive Vocalization	1.000000	0/1	Adrienne Miller
0	Spheniscus demersus	2018-07-05	Interaction with environment	100.000000	%	Adrienne Miller
1	Spheniscus demersus	2018-08-06	Interaction with environment	7.000000	%	Adrienne Miller

Best Practices

The following are some Best Practices suggestions to get the most out of Care and Welfare:

- Try to get the involvement of all Staff members who will be using the Care and Welfare module to help plan how it will be used and who will be using it. You only want to configure the Indicators and create the Templates once. The expected usage is:
 - Indicators are owned by the welfare officer at your institution
 - Templates are used by the animal care staff

- Charts are Curatorial, Veterinary and others with animal collection oversight
- Whenever possible try to use the Global Indicators
 - Care and Welfare information is not currently shared but hopefully it will be in the future
 - Using standard Global Indicators will assist with this sharing
- When creating Local Indicators
 - Try to use the default of assigning to All Animals when possible
 - Taxonomic exceptions cannot be changed after observations are recorded
 - If “specific taxonomic group(s)” is used you cannot go back and select All Animals – you would need to create a new Indicator
 - Indicators can be set now and add/edit expected values later
- Editing an Indicator
 - Before data entry all fields can be edited
 - Once data has been recorded for Indicators, the following fields CAN be edited
 - Category (warning will be given if associated with records)
 - Description (warning will be given if associated with records)
 - Explanation
 - Value Definition
 - Expected Value/Range
 - Once data has been recorded the Indicators, the following fields CANNOT be edited
 - Name
 - Value Type
 - Add/remove Taxonomic Exceptions
 - If an Indicator is edited, you should add a batch Note to animals affected that includes what was changed on date “x”
- Taxonomic Exceptions
 - All of the Indicators that have been Configured will display to select from when creating a template regardless of taxonomy selected
 - If an Indicator has been used for a taxa, you cannot remove that taxa from the exception
 - When actually using the template, if a taxa is not included in the indicator the data entry will be greyed out and a “NA” displayed by default, data cannot be recorded
 - This is an example:
 - Indicator A
 - Numeric scale is 1-5
 - Taxa exclusion = cheetah
 - Numeric scale for cheetah is 1-10
 - Data is recorded on cheetah
 - Oops – you really wanted cheetah to be 1-5
 - Not going to happen – skews data already recorded
 - Oops – you don’t care about cheetah being an exception
 - Not going to happen – skews data already recorded
- Deleting an Indicator
 - Care and Welfare data does not go into the animal record, they are retained in the module

-
- Deleting an Indicator will delete all the observations recorded using it
 - You have 3 months to “Roll Back” a deletion using Data Entry Monitor
 - Chart Considerations
 - Weight, Health Status and Body Condition Score automatically populate the Charts
 - They do not display on List View
 - List View allows you to edit the date, time, value and observed by fields
 - List View is also where any Notes will display

Revised 19 December 2018