

Medical History Report - Summary for Individual Specimen
NATIONAL ZOOLOGICAL PARK

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=====
Scientific Name: ELEPHAS MAXIMUS MAXIMUS           Accession #: 113711
Common Name: SRI LANKAN ELEPHANT                 Male
Name: Kandula                                     Birth: 25.Nov.2001
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.....2001....

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25.Nov Birth,
      Clinical note recorded. (CSD)
26.Nov Clinical note recorded. (CSD)
28.Nov Clinical note recorded. (CSD)
29.Nov Clinical note recorded. (CSD)

 3.Dec Clinical note recorded. (SZM)
 4.Dec Clinical note recorded. (CSD)
21.Dec Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
      NO PARASITES SEEN
      Clinical note recorded. (CSD)
28.Dec Clinical note recorded. (CSD)

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.....2002....

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 3.Jan Clinical note recorded. (CSD)

21.Mar Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
      NO PARASITES SEEN
      Clinical note recorded. (CSD)
22.Mar Clinical note recorded. (CSD)

 2.Apr Clinical note recorded. (SZM)
 5.Apr Clinical note recorded. (SZM)
 8.Apr Clinical note recorded. (SZM)
17.Apr Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
      NO PARASITES SEEN

 8.May Rx: FAMCICLOVIR 1500mg PO TID (5.96 mg/kg)
      Clinical note recorded. (KMS)
      Clinical note recorded. (SZM)
10.May Rx: FAMCICLOVIR 1500mg PO BID for 7 days. (5.96 mg/kg)
      Clinical note recorded. (SZM)

23.Jun Clinical note recorded. (CSD)
24.Jun Clinical note recorded. (CSD)

22.Jul Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
      NO PARASITES SEEN

19.Oct PROBLEM: anaphylaxis (onset)
      Purpose/Problem: anaphylaxis (Confirmed)
      Rx: DIPHENHYDRAMINE HYDROCHLORIDE 150mg PO
      Clinical note recorded. (SLD)

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Name: Kandula                                         Birth: 25.Nov.2001
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.....2002....

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20.Oct Clinical note recorded. (CSD)
21.Oct Purpose/Problem: anaphylaxis (Confirmed); Incase of suspected anaphla
      Rx: DIPHENHYDRAMINE HYDROCHLORIDE 200mg PO as needed
      Clinical note recorded. (SZM)
23.Oct PROBLEM: anaphylaxis (resolved)
      Clinical note recorded. (SLD)

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.....2003....

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30.Jan Parasitology examination: (ROUTINE EXAMINATION/CYTOLOGY) Fecal sample
      NO PARASITES SEEN

28.Mar Clinical note recorded. (SZM)
29.Mar Clinical note recorded. (CSD)
30.Mar Clinical note recorded. (CSD)

10.Apr Clinical note recorded. (SZM)
14.Apr Clinical note recorded. (SZM)
16.Apr Clinical note recorded. (SZM)
24.Apr Rx: FAMCICLOVIR PO bid for 275 days. (8.01 mg/kg)
      Clinical note recorded. (SZM)
25.Apr Clinical note recorded. (SLD)
26.Apr Clinical note recorded. (SLD)
28.Apr Parasitology examination: (FOLLOW-UP/RECHECK EXAMINATION) Fecal sampl
      NO PARASITES SEEN
      Clinical note recorded. (CSD)
29.Apr Clinical note recorded. (CSD)
30.Apr Clinical note recorded. (SLD)

12.May Clinical note recorded. (CSD)

12.Sep Clinical note recorded. (SZM)
13.Sep Clinical note recorded. (EB)

 4.Nov Clinical note recorded. (EB)
26.Nov Parasitology examination: (VETERINARY REQUEST) Fecal sample.
      NO PARASITES SEEN
      Clinical note recorded. (HSZ)
      Clinical note recorded. (SZM)
28.Nov Clinical note recorded. (HSZ)
30.Nov Clinical note recorded. (CSD)

16.Dec Clinical note recorded. (CSD)
17.Dec Clinical note recorded. (EB)

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Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

.....2003....

18.Dec Clinical note recorded. (EB)
30.Dec Clinical note recorded. (CSD)

.....2004....

20.Jan Clinical note recorded. (CSD)
24.Jan Rx: FAMCICLOVIR 9000mg PO BID for 7 days. (9.72 mg/kg)
Clinical note recorded. (CS)
26.Jan Clinical note recorded. (HSZ)
30.Jan Rx: FAMCICLOVIR 4500mg PO BID for 7 days. (4.86 mg/kg)
Clinical note recorded. (CS)

18.Feb Clinical note recorded. (HSZ)
20.Feb Clinical note recorded. (SZM)
21.Feb Clinical note recorded. (EB)
22.Feb Clinical note recorded. (CSD)
23.Feb Clinical note recorded. (SLD)
26.Feb Clinical note recorded. (SLD)

3.Mar Rx: DIPHENHYDRAMINE HYDROCHLORIDE 500mg PO as needed (.502 mg/kg)
Clinical note recorded. (EB)
29.Mar Clinical note recorded. (CSD)
31.Mar Clinical note recorded. (CSD)

5.Apr Clinical note recorded. (CSD)
6.Apr Clinical note recorded. (EB)
7.Apr Clinical note recorded. (EB)
8.Apr Clinical note recorded. (CSD)
17.Apr PROBLEM: decreased alertness
Clinical note recorded. (EB)
18.Apr Clinical note recorded. (CSD)
20.Apr Clinical note recorded. (CSD)
23.Apr Parasitology examination: (VETERINARY REQUEST) Fecal sample.
NO PARASITES SEEN
Clinical note recorded. (EB)
24.Apr Clinical note recorded. (EB)
26.Apr Clinical note recorded. (SLD)
27.Apr Clinical note recorded. (SLD)
29.Apr Clinical note recorded. (CSD)

7.May Clinical note recorded. (CSD)
17.Jun Clinical note recorded. (CSD)
27.Jun Clinical note recorded. (CSD)

Medical History Report - Summary for Individual Specimen
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Scientific Name: ELEPHAS MAXIMUS MAXIMUS           Accession #: 113711
Common Name: SRI LANKAN ELEPHANT                    Male
Name: Kandula                                       Birth: 25.Nov.2001
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.....2004....

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28.Jun  Clinical note recorded. (CSD)
29.Jun  Purpose/Problem: Fly spray
        Rx: SKIN SO SOFT BATH OIL 1spr topically SID for 60 days.
        Clinical note recorded. (CS)

 1.Jul  Rx: FAMCICLOVIR 10.5gm PO BID for 7 days. (9.44 mg/kg)
        Clinical note recorded. (CS)
 8.Jul  Rx: FAMCICLOVIR 5250mg PO BID for 7 days. (4.72 mg/kg)
        Clinical note recorded. (CS)
17.Jul                                     Weight: 1114 Kg ( 2455 Lb)
22.Jul  Clinical note recorded. (CSD)

11.Sep  Rx: NOLVASAN:WATER (1:9) topically BID for 30 days.
        Clinical note recorded. (CS)
12.Sep  Clinical note recorded. (SLD)
13.Sep  Clinical note recorded. (SLD)
14.Sep                                     Weight: 1152 Kg ( 2539 Lb)
15.Sep  Clinical note recorded. (EB)
16.Sep  Clinical note recorded. (CSD)
17.Sep  Clinical note recorded. (CSD)
18.Sep  Clinical note recorded. (CSD)

 7.Oct  Parasitology examination: (ROUTINE EXAMINATION) Fecal sample.
        NO PARASITES SEEN
13.Oct  Clinical note recorded. (CSD)
18.Oct                                     Weight: 1191 Kg ( 2625 Lb)

 1.Nov                                     Weight: 1205 Kg ( 2656 Lb)
 9.Nov  Clinical note recorded. (EB)
21.Nov                                     Weight: 1227 Kg ( 2704 Lb)

 6.Dec  Clinical note recorded. (EB)
 7.Dec  Clinical note recorded. (EB)
 8.Dec  Clinical note recorded. (EB)
16.Dec  Clinical note recorded. (CSD)
                                     Weight: 1262 Kg ( 2781 Lb)

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.....2005....

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 2.Jan                                     Weight: 1290 Kg ( 2843 Lb)
 4.Jan  Clinical note recorded. (EB)
18.Jan                                     Weight: 1308 Kg ( 2883 Lb)

 4.Feb                                     Weight: 1336 Kg ( 2945 Lb)

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Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
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.....2005....

14.Feb Clinical note recorded. (EB)
18.Feb Weight: 1347 Kg (2969 Lb)
4.Mar Weight: 1361 Kg (3000 Lb)
27.Mar PROBLEM: lameness - right front limb (onset)
Clinical note recorded. (EB)
28.Mar Clinical note recorded. (EB)
29.Mar Clinical note recorded. (CSD)
31.Mar Clinical note recorded. (CSD)
19.Apr PROBLEM: lameness - right front limb (resolved)
Clinical note recorded. (EB)
20.Apr Clinical note recorded. (SZM)
26.Apr Clinical note recorded. (EB)
7.Jun Clinical note recorded. (SZM)
13.Jun Clinical note recorded. (EB)
14.Jun Clinical note recorded. (CSD)
15.Jun PROBLEM: vaccination
Clinical note recorded. (EB)
29.Aug Clinical note recorded. (EB)

Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Clinical Note:

25.Nov.2001

Hx: Baby was born at 2:35 pm. Male. Body weight 324 lbs.
Baby delivered after 40 min of oxytocin injected iv to female shanthi.
1. Birth: Baby elephant pulled away from mom (keepers) and placed in scale. Fetal membranes removed and put in container for further pathologic investigation.

Proc:

2. Quick PEX: Male, membranes removed, mouth cleaned. Looks BAR, no obvious malformations noted.

Baby stood up (with some assistance) after 20 min, slightly uncoordinated at the beginning. Coughed several times over the next 4 hours (Dr Shmitt says it is normal, baby dislodgin mucous from birth). 2 attempts to collect blood from ears were unsuccessful; no more attempts due to stress of baby, mother and staff.

Baby 2 belts was approached to mom (under close invigilation from keepers). She only had a couple of anxious moments otherwise accepted the baby perfectly.

2. Nursing. First time baby sucked calostrum was recorded at 2 hrs 10 min from birth.

A: Birth

P: Flush the umbilicus q 24 hrs x 5 days and monitor weight.

Note: Blood sample still needed for herpesvirus PCR..

Culturette from fetal membranes: Mixed (7+) organism (gram -, gram +).
(CSD)

Clinical Note:

26.Nov.2001

Procedure: Umbilicus flushed with diluted betadine, three times per day. (CSD)

Clinical Note:

28.Nov.2001

Result: PCR from placenta and umbilical cord for herpesvirus: Negative (Dr. Laura Ritchman). Body weight: 306 lbs. (CSD)

Clinical Note:

29.Nov.2001

Result: Fecal culture (taken 11/25/01); Negative for enteric pathogens. (CSD)

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Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
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Clinical Note: 3.Dec.2001

Hx: This baby elephant is bright and alert today. He nurses avidly from both mammary glands, and has nap periods lasting about 25 min throughout the day. Today's weight is 302 lbs, up from 297 on friday (although the scale was broken and then fixed). Baby will be weighed again tomorrow.

Note: the teeth on the right side are just beginning to come in. (SZM)

Clinical Note: 4.Dec.2001

Hx: BW is 307 lbs. Seen during bath. Very active and playful. (CSD)

Clinical Note: 21.Dec.2001

Hx: Fecal: NPS (CSD)

Submission Data >>
Type: Fecal sample
Purpose: ROUTINE EXAMINATION

Sample id.: 2001-4277
Date collected: 21.Dec.2001

Collected from:
From an individual specimen.

Enclosure: EH

Examination Data >>
Storage: room temperature
Consistency: formed
Gross appearance: Typical

Date examined: 21.Dec.2001

Tests & Results >>
FLOATATION - SUGAR

NO PARASITES SEEN

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note: 28.Dec.200

Hx: Kandula's hard palate has a a dark pink tissue around edges,
likely to be a bruise.

A: Oral lesion

P: Monitor TID (CSD)

Clinical Note: 3.Jan.2002

Update: Oral lesion is not present. No concern at this time. Baby is
healthy and playfull. (CSD)

Clinical Note: 21.Mar.200.

Hx: Seen straining during defecation. Blood in stool. Fecal: Sand,
large amount present.

This elephant was seen defecating during the bath and was straining a
little but also vocalizing a couple of times. He produced feces with
minor amount of blood (strings of blood rather than mucoid). He is
also reported that is less active than other days.

NOTE: He had been given bananas that were slightly green.

Fecal sample revealed: NPS, Large amount of sand and no inflammatory
cells seen.

A: Straining,

r/o constipation, GI Upset

Bloody feces

r/o 2ndary to straining (rectum, sphincter), colitis, trauma

P: Monitor for now (CSD)

Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
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Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Parasitology Examination:

Submission Data >>

Type: Fecal sample
Purpose: ROUTINE EXAMINATION

Sample id.: 2002-0811
Date collected: 21.Mar.2002

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature
Consistency: formed
Gross appearance: Atypical
Special note: fresh blood present in stool

Date examined: 21.Mar.2002

Sample description:

Lab notes: large amount of sand in feces

Tests & Results >>

FLOATATION - SUGAR NO PARASITES SEEN

Comments >>

Cytology:

This slide contains a pleomorphic population of gram + and - bacteria
in a 1:1 ratio. No cells seen.

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

22.Mar.200

Hx: Reported as not very active this morning. Small lesion in oral cavity reported today by keeper (Flynn). This elephant was reported as not very active during most of the day yesterday and this a.m. He also defecated after straining a little yesterday. Fecal showed large amount of sand. He has not gaining weight since 19/3/01 but this is not abnormal for this elephant. Keeper mentioned today that he has seen eating sand following mom's habits.

Proc:

1. Observation. This elephant was observed at the end of his daily bath with mom. He was observed playing and moving normally, a "new" behaviour was noticed. He grabs the black bucket with his mouth and carries it (like a dog with a food bowl). He repeated this behavior several times during the 10 min that was observed. He was also seen nursing at least 3 times and urinating 1 time. Finally he was seen "playing" with treats; he is stepping on them so he can break them down and then place the pieces in his mouth.
2. Oral exam. Oral visualization from outside. This elephant is very active and only limited visualization was achieved. There is a circular 0.5-0.7 cm diameter area on R lateral oral mucosa near to lip commissure. This lesion is lighter in color than the rest of the mucosa and is flat on palpation (no raised or blister-like). Other lesions were not evident on limited examination. MM are normal in color (pink). The anal mucosa was also visualized and no abnormalities were noted.

Pictures were taken from the lesion (Volunteer Jim) and will be placed on Kandula photo file.

3. Weight: 508 lb (incr from 504 that was last 3 days).

A: Oral spot

r/o trauma related to "biting-things" behaviour, non-pigmented mucosa, scar secondary to non-noticed laceration, herpesvirus (less likely as behaviour and other signs were not seen).

P: Monitor lesion every day, monitor straining and sand consumption. (CSD)

Clinical Note:

2.Apr.2002

Hx: Keepers were able to obtain a blood sample from Kandula today. This sample was submitted by PCR for herpes virus and the test came back negative. (SZM)

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Name: Kandula
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Accession #: 113711
Male
Birth: 25.Nov.2001
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Clinical Note:
PCR negative for Herpes virus. (SZM)

5.Apr.2002

Clinical Note:

8.Apr.2002

Hx: Over the weekend the keepers reported that Kandula appears to have 2 small bumps on his tongue that appear very similar to the bumps on Shanthi's tongue. Kandula is is bright, alert, and active. His attitude and appetite continue to be good, and he gains about 1-2 lbs a day.

Obs: The bumps are small - 3mm in diameter and are not hyperemic. He does not resent having these bumps palpated.

A: Probably normal for this animal.

P: Continue to monitor daily. (SZM)

Submission Data >>

Type: Fecal sample
Purpose: ROUTINE EXAMINATION

Sample id.: 2002-1161
Date collected: 17.Apr.2002

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature
Consistency: soft
Gross appearance: Not specified

Date examined: 17.Apr.2002

Tests & Results >>

FLOATATION - SUGAR

NO PARASITES SEEN

Comments >>

No sand this sample

Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
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Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Clinical Note:

8.May.2002

Hx: This am keepers noticed a swollen trunk. By mid afternoon they also noticed edema of nipples and prepuce. He also was reportedly less active today than usual. By late afternoon his trunk was significantly less swollen and there was only remaining edema of the prepuce and the front right nipple, less so than the am per keepers. Assessment: Acute, temporary swelling and edema of trunk and ventrum. R/O include allergic reaction to insect sting/bite, food or substrate; unknown early herpesvirus symptom. Rx: Keepers instructed to monitor closely for worsening or change of symptoms. Famcyclovir was dispensed to keepers in case of herpesvirus infection with instructions for 1500mg PO BID for 7 days if necessary. Blood samples will also be obtained and sent in for herpes PCR testing. (KMS)

Clinical Note:

8.May.2002

Hx: Keepers stayed overnight with the elephants and checked Kandula every 3 -4 hrs. There were no signs of trouble at any point. The swelling gradually receded and his attitude and appetite were normal. Keepers were able to obtain a blood sample which was sent to Dr. Laura Richman for herpes testing by PCR. This came back as negative. (SZM)

Prescription Data >>

Starting date: 8.May.2002

Drug: FAMCICLOVIR 1500 mg PO TID
Loading dose was: 3000 mg
Formulation: 500.00 mg tablet
Prescribed by: SZM (8.May.2002)
Drug dosage: 5.96 mg/kg

Filled by: TZ (8.May.2002)
Treatment weight: 251.8 kg

Comments >>

Dispensing Note: Dispense 3 doses. Each dose: 3 tablets. Total to dispense: 9 tablets. Use 500.00 mg tablets.

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
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Clinical Note: 10.May.2002
Hx: Keepers report Kandula is bright and alert. All swelling has disappeared. (SZM)

Prescription Data >> Starting date: 10.May.2002
Drug: FAMCICLOVIR 1500 mg PO BID for 7 days
Formulation: 500.00 mg tablet
Prescribed by: SZM (8.May.2002) Filled by: TZ (8.May.2002)
Drug dosage: 5.96 mg/kg Treatment weight: 251.8 kg

Comments >>

Dispensing Note: Dispense 14 doses. Each dose: 3 tablets. Total to dispense: 42 tablets. Use 500.00 mg tablets.

Clinical Note: 23.Jun.2002

Problem: Lumps on trunk.
Hx: First lump noticed on 06/21, more lumps noticed on trunk yesterday p.m. Today DAH notified.
Proc:
1. Visual exam: Baby is BAR, moving normally, appetite is rated as excellent by keepers. There are small raised areas on diff areas of trunk including: upper trunk (almost forehead), L side of trunk and 2 smaller raised areas ventral aspect of trunk. The raised areas are soft, not hot, with sizes from 0.5 cm up to 1.5 cm. This elephant doesn't seem to feel when lumps are touched.
2. Pictures: bigger lumps where circled with black sharpie to facilitate visualization. Pictures taken with digital camera.
A: Trunk lumps
r/o bee (or other insect) sting, allergic reaction, viral
P: Monitor for now (CSD)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
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Name: Kandula
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Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

24.Jun.200.

Update: Lumps are getting smaller but still visible. Skin so soft on lumps.

The lesions are still noticeable but the larger ones seem to be regressing from yesterday. His attitude and appetite are WNL (keepers). No more lesions noticed today.

A: Lumps on trunk

P: Start skin so soft today (CSD)

Submission Data >>

Type: Fecal sample

Purpose: ROUTINE EXAMINATION

Sample id.: 2002-2303

Date collected: 22.Jul.2002

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature

Consistency: formed

Gross appearance: Typical

Date examined: 22.Jul.2002

Tests & Results >>

FLOATATION - SUGAR

NO PARASITES SEEN

Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Clinical Note:

19.Oct.200

Problem: anaphylaxis (Confirmed)

HX: Kandula noted to be extremely aggitated in the yard at 9:30 AM. EH keepers brought him and Shanti into house at 9:50 AM. SLD responded to radio call at 9:50 and on site at 9:55 AM.

S/O: Kandula highly aggitated and moving around enclosure in frenzied manner. Itching at all feet, legs and trunks. Bottoms of feet the most. Stiff trunk and legs; began with 1/3 of trunk and then progressed. Swelling started to be noted on different locations on trunk (RT > LT) and then forelimbs (RT > LT) and face (RT > LT). Ears very warm to touch (subjectively LT > RT). Swelling and stiffness increasing. SLD elected to treat for suspected bee stings (multiple).
RX: 10:27 AM 150 mg diphenhydramine PO. Within 10 - 15 mins of PO meds, slowing down of aggitation. Ear warmth decreasing, less itching at body, legs. SLD left Kandula at 11:20 AM. EH keepers left with 150 mg benadryl tablets.

Rx: DIPHENHYDRAMINE HYDROCHLORIDE 150 mg PO for 1 dose.

Addendum: 3:15 PM recheck - Kandula is 97% to normal (per MG). S/O: Active and full of energy. Swelling all but gone but still slight stiffness. EH keepers to recheck at 7 PM and contact SLD if problems. (SLD)

Purpose: anaphylaxis (Confirmed)

Prescription Data >>

Starting date: 19.Oct.2002

Drug: DIPHENHYDRAMINE HYDROCHLORIDE 150 mg PO

Formulation: 50 mg/tab capsule

Prescribed by: SLD (19.Oct.2002)

Filled by: SLD (19.Oct.2002)

Treatment weight: 394.2 kg

Comments >>

Dispensing Note: Dispense one dose. Each dose: 3 tab. Use 50 mg/tab capsules.

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Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Clinical Note:

20.Oct.2002

Problem: anaphylaxis (Confirmed)
Update: Kandula is back to normal today. After the presumptive allergic episode from yesterday he was reported at 8:00 yesterday as almost back to normal. This morning he is playfull and no evidence of swelling on trunk, perineal area or legs is present.
A/P: He will be outside on a diff yard w/ less insects
Monitor (CSD)

Clinical Note:

21.Oct.2002

Problem: anaphylaxis (Confirmed)
Obs: Kandula is bright and alert with no residual signs of either the insect stings or the benadryl treatment. Attitdue and appetite are fine.
A: Followup exam following presumptive insect bite.
P: Keepers to keep 200 mg Benadryl on hand, but will not administer without talking to a vet. Vets to consider having epinepherine on hand as well.
Rx: DIPHENHYDRAMINE HYDROCHLORIDE 200 mg PO as needed for 1 dose. (SZM)

Purpose: anaphylaxis (Confirmed)

Incase of suspected anaphylaxis, contact Veterinarian. Give 200mg Diphenhydramine Hydrochloride by mouth as directed.

Prescription Data >>

Starting date: 21.Oct.2002

Drug: DIPHENHYDRAMINE HYDROCHLORIDE 200 mg PO as needed

Formulation: 50 mg tablet

Prescribed by: SZM (21.Oct.2002)

Filled by: LE (21.Oct.2002)

Treatment weight: 394.2 kg

Comments >>

Dispensing Note: Dispense one dose. Each dose: 4 tablets. Use 50 mg tablets.

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Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

23.Oct.2001

Problem: anaphylaxis (Confirmed)
S/O: Visual - Kandula is 100% to normal. No swellings noted. Moving trunk WNL. Active and good natured.
A/P: EH keeper staff and maintenance personnel working in yard to removed source of yellow jackets. Case resolved. (SLD)

Submission Data >>

Type: Fecal sample
Purpose: ROUTINE EXAMINATION/CYTOLOGY

Sample id.: 2003-0369
Date collected: 30.Jan.2003

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature
Consistency: formed
Gross appearance: Typical

Date examined: 30.Jan.2003

Tests & Results >>

FLOATATION - SUGAR

NO PARASITES SEEN

Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula

Accession #: 113711
Male
Birth: 25.Nov.2001

Clinical Note:

28.Mar.2006

Hx: Kandula has been doing very well. He is bright, alert, active with a great appetite and no signs of any medical problems. However, Toni, an adult Asian female, has a recent history of a small skin wound that may be viral-related. A biopsy of this tissue from Toni demonstrated numerous intranuclear inclusion bodies which is suggestive of herpes virus. Although Kandula has no clinical signs, several steps will be taken to protect his health. Until more information is available, Toni and Kandula will be separated. Keepers will continue to do hourly checks of Kandula (particularly the tongue) during the day, and will organized late night checks for the next several nights. In addition, keepers will continue to work hard to collect blood from him for both PCR and Elisa testing.

Proc: Manual restraint for blood collection - 0.2 ccs of blood in heparin - enough for PCR, but not ELISA.

A: Apparently healthy juvenile elephant with possible exposure to herpes virus.

P: PCR on both this elephant and the adult female elephant, Toni, with the skin lesion. PCR should be available on Monday am.

Numerous consultations with leading herpes-virus researchers and elephant veterinarians including Dr. Montali, Dr. Nichols, Dr. Richman, Dr. Schmitt and Dr. Anikis concerning the clinical status of this elephant as well as possible diagnostic test and treatment protocols. Although famcyclovir appears to be successful in treating herpes virus in young elephants, it is not without side effects and treatment should not be begun until deemed necessary. Also, several suggested protocols exist. For full-blown herpes infections, a loading dose, followed by 3-5 days of human dosage, followed by weeks of metabolically scaled dosages including successive ELISAs and PCRs to follow AB levels and viral loads is suggested. During this time sequential CBCs to monitor PCV is essential since one of the side effects of famcyclovir is anemia. For a case like this, where prophylactic dosing might be considered, it would be more appropriate to forego the loading dose, and perhaps initiate a regime using human dosages first for 3 days, and then transferring to elephant dosages.

At this point, since we do not yet have an etiology for Toni's lesion and we do not know if she is viremic, and since Kandula is so bright and alert, with no clinical signs, anti-viral medication is not yet warranted. Kandula will be closely monitored over the weekend and if

=====
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Name: Kandula
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Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

28.Mar.200

all remains normal, medication will not be initiated. If the PCR comes back positive on Kandula, or he develops clinical signs, a loading dose of Famcyclovir will be given, and then followed by human dosages. If the PCR on Kandula is negative, but positive on Toni, a prophylactic trial will be considered for Kandula. If PCR remains negative on both animals, no treatment will be initiated, but greater emphasis will be placed on getting a baseline blood sample from Kandula on monday - even if this requires sedation. In addition, weekly PCR/Elisa testing may be considered on all elephants if Dr. Richman is able to provide this service. (SZM)

Clinical Note:

29.Mar.200

O/S: This elephant is BAR, showing normal appetite and food consumption (by keepers). At midnight check Keeper (Galloway) reported Kandula was sleep but once he was awaked he was normal, BAR.

1. Visual.

Checked throught the bars in 2nd stall under command. This elephant is BAR, food oriented and ready to follow command. In oral exam: There is no evidence of swollen, discoloration, or any change in oral cavity (checked with flashlight). No presence of blister, lumps, abrassin, ulcer or other abnormal structure found during exam. He readily accepted treats after each visual uneventfully.

P: Follow plan sumarized 03/28/03. Wait for lab results and pursue collecting sample from this elephant on 03/31. No treatment for now. (CSD)

Clinical Note:

30.Mar.200

Results: Blood result is negative for herpesvirus (L. Rithoman). Elephant on visual exam is BAR. Appetite and behavior are rated as normal.

P: Consider getting blood sample for baseline data week 03/31.

Cont monitoring for any oral lesion, or abnormal behaviour routinely as before. (CSD)

Clinical Note:

10.Apr.200

Comt: Kandula is bright and alert. Keepers have been training him for blood collection and feel they have made excellent progress. (SZM)

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Clinical Note:

14.Apr.2001

Hx: Kandula remains bright and alert. Training is progressing well. Today keepers were able to collect 3 ccs of blood - probably just enough to run ELISA. Keepers to continue with daily training in hopes of getting routine blood samples as well as a baseline CBC/Chem. (SZM)

Clinical Note:

16.Apr.2001

Hx: Keepers have been training elephant for blood draws. Today was very successful and they were able to collect 24 ccs of blood for CBC/Chem and banking.
Proc: Blood/EDTA and Clot. WBC = 18,900. 24 % neutrophils, 42 % lymphs, and 34 % monos.
A: Although WBC appears elevated for elephants, this may be normal for young calves.
P: Research normal values.
Comt: Kandula remains bright and alert. (SZM)

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Clinical Note:

24.Apr.2003

Hx: Kandula had a 30 min episode of not doing well this afternoon after acting completely normal in the am. Just after lunch keepers noted that Kandula appeared depressed, was unresponsive to their commands, and appeared to be straining to defecate. He defecated a small amount, then continued in his slightly off behavior for another 30 min or so. During this time period, the keepers gave him a bath and he slowly began to get more active and alert. He began playing around, responding to commands, and had a good bout of nursing. From that time on he has been completely normal.

Proc: Exam: Bright and alert. Mucous membranes are pink, as is tongue.

Proc: Blood/ EDTA for PCR - to be run tonight by Laura Richman.

Proc: Rectal culture for enteric pathogens.

A: 30 min episode of not acting right - possible GI distress. Due to the high incidence of herpes in young calves, this possibility must be considered (although the clinical signs are not pathognomonic for herpes). GI disturbance must also be considered.

Rectal swab: negative for enteric pathogens

P: Keepers to institute a 24 hr watch. PCR to be run tonight by Laura Richman. Famcyclovir (8 mg/kg) to be sent to elephant house tonight - but elephant not to be treated until results of PCR are available. If negative, no treatment necessary. If positive - treat immediately.

Keepers to page Dr. Murray tonight with results.

Note: Recent PCR on all elephants was negative, and recent ELISA demonstrates low titers in adults with no evidence of ABS in Kandula. Blood will be drawn on all adults as well to see if viral shedding is occurring.

Rx: FAMCICLOVIR 5.06 gm PO bid until further notice. (SZM)

Prescription Data >>

Starting date: 24.Apr.2003

Drug: FAMCICLOVIR PO bid for 275 days

Formulation: 500.00 mg tablet

Prescribed by: SZM (24.Apr.2003)

Filled by: LE (24.Apr.2003)

Drug dosage: 8.01 mg/kg

Treatment weight: 632 kg

Comments >>

Dispensing Note: Use 500.00 mg tablets. dispensing 40 tablets
Give 10 tablets by mouth twice daily UPN

Originally prescribed until further notice.

Discontinued on 23.Jan.2004

Not necessary to give. Change in weight/change in dose.

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Clinical Note:

25.Apr.200

S/O: AM vet check. Kandula is BAR. Normal stool and urine present in enclosure. Oral exam WNL with tongue pink.

Last night Kandula slept normal amount, defecated and urinated, and nursed periodically during night.

Test result: PCR herpes negative for Kandula (and all other elephants) from test finished at 1 AM this morning.

Blood results: CBC and profile are normal in comparison with other Asian elephants of the same age cohort.

A/P: Top R/Os for abnormal behavior yesterday are 1. GIT upset or less likely 2. insect bite.

P: Two vet checks today and daily checks starting tomorrow.

PM vet check at 3:30 - Kandula sleepy but no more than usual for this time of day. Normal behavior during day. However, was not interested in blood drawl practice and stools may have been somewhat less than normal and slightly more moist (per MG). (SLD)

Clinical Note:

26.Apr.200

Comment: Kandula did great overnight. Keeper check at midnight - normal oral examination.

S/O: BAR. Defecating, urinating and eating normally.

A/P: Continue with daily vet checks. Keeper (Debbie) has asked curator (TB) to have horticulture check the grasses/plants under hotwire. Kandula eats these. (SLD)

Clinical Note:

28.Apr.200

O/S: BAR. No abnormalities noted. Eating, acting and defecating normally.

In oral exam: MM are normal in color, no lesions or other abnormalities noted.

A/P: Cont with daily vet checks for a total of 1 week.

Fecal submitted today was NPS. (CSD)

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Parasitology Examination:

Submission Data >>
Type: Fecal sample
Purpose: FOLLOW-UP/RECHECK EXAMINATION

Sample id.: 2003-1447
Date collected: 28.Apr.2003

Collected from:
From an individual specimen.

Enclosure: EH

Examination Data >>
Storage: room temperature
Consistency: formed
Gross appearance: Typical

Date examined: 28.Apr.2003

Tests & Results >>
FLOATATION - SUGAR

NO PARASITES SEEN

Clinical Note:
O/S: Kandula is reported as normal by curator. (CSD)

29.Apr.200

Clinical Note:
S/O: Kandula BAR. WNL with exception of no longer will stand for blood drawl. Keepers will begin training again.
A/P: Keepers to continue close watch. (SLD)

30.Apr.200

Clinical Note:
Note: Around 12:00 EH staff noted that the sand in the elephant yard appeared to have something leeching out of it, which has an iridescence like oil. CURator (TB) made clear that there was no reason for there to be oil or hydraulic fluid out in the yards. If its unknown in this elephant or other elphant consumed this but all elephants eat some sand regularly.
Dr Montali will be checking the yard tomorrow in a.m with EH staff. (CSD)

12.May.200

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Clinical Note:

12.Sep.2001

Comt: Keeper Marie reports recent weight loss (28 lbs? over a few weeks) - but also notes that his weight tends to fluctuate, and he is bright, alert, active, and acting normally.
A: Weight loss R/o WNL, dietary, illness.
P: Visual exam tomorrow. Keeper to contact nutritionist to discuss hay quality, feeds, etc (SZM)

Clinical Note:

13.Sep.2001

Proc: visual recheck due to recent weight loss (24 lbs in 2 days). Gained 21 lb. overnight. Not unusual for weight to fluctuate, although these are bigger jumps than previously.
S/O: BAR, eating and defecating well, seems completely WNL.
A/P: discuss diet with nutritionist, may just be bigger growth spurts. (EB)

Clinical Note:

4.Nov.2003

Comment: curator TB reports that Kandula acting off at noon today, not cooperating with keepers, and not eating for 1-2 hours. Was brought inside and began acting normally in afternoon.

16:00 Proc: visual exam with one keeper present (Shawn). Sleeping quietly when arrived (normal for him this time of day). Keeper reports that he had been eating grain, produce and hay in past hours since short episode. Mother Shanti approached and woke him up, he rose and began playing with ball. Keepers had checked mouth earlier and saw no abnormalities. He opened mouth while I was in front of cage, no abn seen, was uniformly pink, but view was very brief and not very close. (EB)

Clinical Note:

26.Nov.2001

Results: Fecal cytology - Mixed bacterial population, predominantly gram negatives, with many protozoa. No inflammatory cells seen.
Dx: Normal flora.

Fecal float - no parasites seen. (HSZ)

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Clinical Note:

26.Nov.2003

Comt: Yesterday was Kandula's introduction to his new elephant yard. He was bright, alert, and active all day. This morning keepers noted a few piles of loose stools.

Obs: Kandula is bright and alert. Mucous membranes pink and moist - tongue WNL. No evidence of straining to defecate during observation, however, a few loose piles of feces noted

A: Since Kandula is so bright and alert, his diarrhea may be either secondary to a dietary indiscretion (he ate some banana leaves yesterday), may be secondary to the excitement and increased activity, or perhaps another gi disturbance.

P: Collect feces for parasite check and cytology. Keepers and curator to monitor closely and call back if he worsens. If he improves, keepers to call back with report. (SZM)

Submission Data >>
Type: Fecal sample
Purpose: VETERINARY REQUEST

Sample id.: 2003-3827
Date collected: 26.Nov.2003

Collected from:
From an individual specimen.

Enclosure: EH

Examination Data >>
Storage: room temperature
Consistency: liquid to watery
Gross appearance: Atypical

Date examined: 26.Nov.2003

Tests & Results >>
FLOATATION - SUGAR

NO PARASITES SEEN

Comments >>

Cytology:
Mixed bacterial population, predominantly gram negative with many protozoa. No inflammatory cells seen. Dx: Normal flora.

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Accession #: 113711
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Clinical Note:

28.Nov.2001

Proc: Visual exam, fecal sample for cytology and parasite screen.
S/O: Elephant BAR, eating and drinking normally, normal feces (HSZ
visualized in stall, as well as reported by keepers.)
Results:
Parasite screen: NPS
Cytology: Mixed bacterial population, predominantly gram negative. No
inflammatory cells seen. Protozoa are rare.
Dx: Rule out normal bacterial flora.
A/P: Monitor closely to ensure stabilized condition. (HSZ)

Clinical Note:

30.Nov.2001

Update/Visual: This elephant is reported as BAR and eating normally.
This case is resolved as it was likely a GI upset due to new items
(some of them not approved by DONR) few days ago. (CSD)

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Clinical Note:

16.Dec.200

Prob: Ulcers on oral cavity reported today.

Hx: This elephant receives daily (2-3x) oral exams. This morning keepers noticed 1 small ulcer on surface of tongue. Curator informed and DAH contacted.

Proc:

1. Visual: Elephant is BAR, no evidence of oral, nasal or ocular discharge. MM are pink and moist. There is a small (<1mm) round ulcer (seems superficial) on the R side of tongue surface. No bleeding noted. On close inspection with penlight another round ulcer (approx 0.5cm) was found on upper palate (right side). The ulcer is pinker than the rest of the mucosa. There is a small amount of white material packed in ulcer. No other abnormalities noted in oral cavity. Body inspected while he was instructed to turn around. No abnormalities noted.

Note: Keeper (Debbie) reported this elephant is 100% normal as far as appetite, urine/fecal intake/outake, demenour and activity level.

2. Sample from ulcer on palate submitted for cytology (slides).

Results: Preliminary report showed inflamm cells (neutrophils).

Results: Mod # of superficial epithelial cells and neutrophils, mod # of cocci. Dx: Acute inflammatin, significance of bacteria uncertain.

A: Oral cavity ulcers, acute

R/O Trauma (harsh hay), infectious (herpes)

P: Monitor very closely for now

Visual exam 12/17 (CSD)

Clinical Note:

17.Dec.200

Proc: repeat exam or oral cavity

S/O: elephant remains 100% normal, eating and defecating well, acting normally. On oral exam with pen light, small ulcer on right side of tongue visualized yesterday is now hardly visible, is still slightly red but now pinpoint-sized. Ulcer on right palate is no longer red, and smaller, approx. 5mm in diameter. No food particles in this lesion today.

A: resolving minor oral ulcerations, most likely trauma-induced.

P: continue to monitor elephant very closely to r/o any viral infection. (EB)

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Clinical Note:

18.Dec.200:

Proc: visual recheck for oral lesions
S/O: BAR, animal is reported to be 100% today. Eating and defecating and acting normally. Lesion on tongue no longer visible according to keeper (Marie) and ulcer is very small and no longer red on right palate.
A/P: continue to monitor but seems to be resolving quickly (EB)

Clinical Note:

30.Dec.200:

Proc: Physical exam, and vaccination today.
Hx: No abnormalities reported. Its BW (2040) is expected for this growing elephant. Food consumption is reported as normal by keepers (Sean, MM). Next trunk washes are scheduled for April 2004 (keepers optimistic that he will be cooperative next time TW are scheduled).

Proc:

1. PEx: (PEx and vaccination performed under training command)
S/O: This elephant is good>excellent body condition. Integ: NSF. Feet: Excellent condition. EENT: OU: Eyelids, sclera: NSF (fundic: Pupa was contracted therefore was not possible to perform fundic exam). Exam was performed with ophthalmoscope. Oral cavity (flashlight): MM are bright pink, saliva is of normal consistency. No abnormalities noted on teeth (3rd set erupting already). H/L: Not possible to auscultate or palpate pulse as Kandula didn't stand still. Rectal palpation: Excellent results under trainign. Almost 1 min wiht arm inside with only minor response (movement). Digital thermometer didn't work. G/U: NSF.

2. Keepers to attempt getting a blood sample later on the day but this male is not fully trained for this.
Rx: Vaccination (3cc syringe with 1 1/2,18" gauge needle): Tetanus

A: Apparently healthy (CSD)

Clinical Note:

20,Jan.200

Urinalysis as part of routine exam: SpG: 1.012, Ketone: trace (floor sample). Crystal 3+.
A: Urinalysis WNL (CSD)

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=====

Clinical Note:

24.Jan.2004

Rx: FAMCICLOVIR 9000 mg PO BID for 7 days. (CS)

Prescription Data >>

Starting date: 24.Jan.2004

Drug: FAMCICLOVIR 9000 mg PO BID for 7 days
Formulation: 500.00 mg tablet
Prescribed by: CS (23.Jan.2004)
Drug dosage: 9.72 mg/kg

Filled by: JLK (23.Jan.2004)
Treatment weight: 925.6 kg

Comments >>

Dispensing Note: Dispense 14 doses. Each dose: 18 tablets. Total to dispense: 252 tablets. Use 500.00 mg tablets.

Clinical Note:

26.Jan.2004

Comt: Urinalysis results (free catch, mid-stream urine) - pale, cloudy
s.g. = 1.003, pH = 7.5, 3+ amorphous crystals, all else WNL.

This was an opportunistic urine sample. (HSZ)

Clinical Note:

30.Jan.2004

Rx: FAMCICLOVIR 4500 mg PO BID for 7 days. (CS)

Prescription Data >>

Starting date: 30.Jan.2004

Drug: FAMCICLOVIR 4500 mg PO BID for 7 days
Formulation: 500.00 mg tablet
Prescribed by: CS (23.Jan.2004)
Drug dosage: 4.86 mg/kg

Filled by: JLK (23.Jan.2004)
Treatment weight: 925.6 kg

Comments >>

Dispensing Note: Dispense 14 doses. Each dose: 9 tablets. Total to dispense: 126 tablets. Use 500.00 mg tablets.

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Clinical Note:

18.Feb.2004

Results: Chemistry Panel - WNL.
CP was run on blood collected on 16.Feb.2004. Keepers have been working with this 2-year-old elephant to achieve successful blood collection - this was opportunistic. No major health concerns at this time. (HSZ)

Clinical Note:

20.Feb.2004

Comt: Keepers report intermittent loose stools over the last 24 hrs, but also note that the hay quality changed 2 days ago and he has been eating a lot of hay. In addition, his right tusk just erupted.
Obs: Kandula is bright and alert. Attitude and appetite are normal. No evidence of loose feces during time of exam.
Proc: culture of feces for enteric pathogens and fecal float.
A: Intermittent loose stools of 24 hrs duration. R/O change in hay quality or perhaps teething pain.
P: Phone checks next few days - Keepers to call back if anything worsens or changes. (SZM)

Clinical Note:

21.Feb.2004

Comt: Keeper (Debi) reports hat Kandula is acting completely normal today, normal appetite and attitude. One pile of slightly loose stool (less loose than yesterday) and several piles of normal stool found from overnight. (EB)

Clinical Note:

22.Feb.2004

Visual: Elephant is BAR. Keeper MG reports that Kandula is 100% normal. (CSD)

Clinical Note:

23.Feb.2004

Comment: Keeper (MG) reports that she thinks Kandula may have eaten a nail. Keeper staff is not sure where the nail went. Kandula is acting normal and has no GIT signs. Animal care staff to monitor and inform DAH if any abnormal behavior/CSS occur. (SLD)

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Name: Kandula
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Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

26.Feb.2004

Comment: Keeper (MG) reports that nail was found in enclosure.
Kandula had not eaten it. (SLD)

Clinical Note:

3.Mar.2004

Rx: DIPHENHYDRAMINE HYDROCHLORIDE 500 mg PO as needed for 1 dose.

Note: dispensed to be kept at Elephant house to be on hand in the case
of beesting, (due to past sting) in order to give meds immediately. (EB)

Prescription Data >>

Starting date: 3.Mar.2004

Drug: DIPHENHYDRAMINE HYDROCHLORIDE 500 mg PO as needed

Formulation: 50 mg capsule

Prescribed by: EB (3.Mar.2004)

Filled by: JLK (3.Mar.2004)

Drug dosage: .502 mg/kg

Treatment weight: 996 kg

Comments >>

Dispensing Note: Dispense 10 doses. Each dose: 10 capsules. Total to
dispense: 100 capsules. Use 50 mg capsules.

Clinical Note:

29.Mar.2004

Proc: Blood sample today (keepers). Result: Low Hct, Hb and RBC in
addition the WBC is also very low on this animal when compared with
previous results on this elephant and ISIS.

WBC=2.3, Hct= 27.5, RBC= 2.64. CP: WNL.

ISIS (both sexes 8D-9Y) REF:WBC 18.96+/- 5.4, Hct 35.6 +/- 6.4, RBC
3.26 +/- 0.68. MCV and MCH (but not MCHC) are also low for Kandula
when compared with normal ISIS values.

A: Unexpected low values for WBC, RBC, Hct and Hb.

R/O Real (anemia) vs artifact of blood sample

P: Request new sample to compare if in fact real, pursue further
diagnostics. (CSD)

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Clinical Note:

31.Mar.2004

Proc: Visual exam. Hx: Blood sample 3/29 showed low RBC and Hct.
Keepers report this elephant has normal appetite, attitude and fecal
output.

The only abnormality from collecting day is that purple tube (glass)
was expired. Unknown if this can cause low RBC/

Visual

Baby elephant is BAR, ORal MM: Pink, CRT <3sec. No evidence of nasal,
ocular or oral discharge.

A: Anemia

R/O artifact vs real

P: Keepers to collect new sample (CSD)

Clinical Note:

5.Apr.2004

Hx: Routine trunk wash. Day 1/3. First TW on this elephant ever.
This elephant has been trained to perform trunk washes for several
months.

Proc

1. Trunk wash: 40 ml saline instilled in trunk by keepers. Trunk
raised then lowered as animal blows contents of trunk into plastic
bag. Wash fluid transferred to sterile centrifuge tube (30 ml of fluid
back).

Note: Elephant cooperated very well, keeper had to instill saline
twice as he has been trained w/ only 20 mls.

A: Routine 3 day trunk wash, day 1/3
R/O tuberculosis

P: Next trunk wash 4/6/04
Repeat annual? Bi-annual? (CSD)

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Accession #: 113711
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Clinical Note:

6.Apr.2004

Hx: Routine trunk wash. Day 2/3.
S/O: 40 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube (collected 30ml with two 40ml syringes)
A: Routine 3 day trunk wash, day 2/3
R/O tuberculosis
P: Next trunk wash 4/7/04 (EB)

Clinical Note:

7.Apr.2004

Hx: Routine trunk wash. Day 3/3.
S/O: 40 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube (collected 30ml with two 40ml syringes)
A: Routine 3 day trunk wash, completed
R/O tuberculosis
P: await results (EB)

Clinical Note:

8.Apr.2004

Proc: Radiograph of both front feets and left rear foot.

Hx: No health concerns at this time. Kandula was very cooperative today.
Kandula has been trained from outside as part of the protected contact training.

Proc:

1. Radiographs: Portable machine. Asked elephant to place feet on top of plate while the plate was put on top of training device. Worked fine for most limbs but he moved last minute for RR leg.

See Xray log book for technique description.

Results: Excellent radiographs: All digits observed: NSF.

A: Toe radiographs, NSF

P: Keepers to cont training this elephant
Repeat RR when convenient (CSD)

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Clinical Note:

17.Apr.2004

Problem: decreased alertness (Confirmed)
Proc: visual exam for short bout of lethargy, soft stools
Hx: keeper (MG) reported at 1pm that elephant has defecated 5x in past hour, stools are formed but soft on outside, and he was not responsive to keepers as he usually is, slightly lethargic, and not eating hay, just pellets. Keeper (MG) reports oral cavity completely unremarkable. Elephants have been locked out during daytime past 2 days due to recent painting in the building.
S/O: visual exam 45 min. later in yard. He is playing and completely submerged in pool, VERY active. No feces seen in past hour. Responsive again to keepers and mother.
A: appears to be back to normal now. Possibly short GI upset.
P: continue to monitor for further signs. (EB)

Clinical Note:

18.Apr.2004

Verbal update: Kandula remains normal, he ate all its food and its attitude and feces are reported as normal by primary keeper (MG).
A: Loose stool, mod lethargy, 1 day
R/O GI upset due to ingestion of foreign item (material)
P: Keepers to monitor and report any abnormality (CSD)

Clinical Note:

20.Apr.2004

Review and comparison of blood sample results (3/29/04) and values from a similar age elephant at Burnet Park Zoo (3 years old).
A: The results of this female elephant from EPZoo are very close to the ones from ISIS (8D-9Y) with WBC of 11.6, RBC 3.3, Hgb 14.4 and Hct 40.
For normal ISIS see record 3/29/04.
P: Keepers have been (unsuccessfully) trying to collect more blood to R/O artifact in sample. (CSD)

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Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

23.Apr.2004

Clinical Note:

Proc: visual recheck for continued mild lethargy and loose stools
Hx: keepers report very mild intermittent bouts of lethargy and slightly loose stools and "cranky" since seen originally for short bout of similar behavior 4/17. Keepers report it could be heat, since it has been >70 F since last week when originally started. Could also be teething or normal behavior for male getting older.

S/O: BAR, came inside eagerly after being in pool. Allowed EB to palpate body while standing parallel to bars. Oral cavity exam: 3mm laceration and slight redness on hard palate. Does not appear to be ulceration. Stool collected for O&P and Cx, appeared normal bolus. Fecal O&P: NPS. Cx: no salmonella or shigella isolated. (added by EB 5/1/04)

A/P: continue to monitor once weather cools over next few days. Keepers continue to attempt repeat blood draw.

Addendum: keepers able to collect blood this pm but clotted and unable to process. (EB)

Submission Data >>

Type: Fecal sample
Purpose: VETERINARY REQUEST

Sample id.: 2004-1295
Date collected: 23.Apr.2004

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature
Consistency: formed
Gross appearance: Atypical

Date examined: 23.Apr.2004

Tests & Results >>

FLOATATION - SUGAR

NO PARASITES SEEN

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note: 24.Apr.2004
Proc: verbal recheck with elephant keepers: no abn. noted today. Seems normal. (EB)

Clinical Note: 26.Apr.2004
Comment: Curator (TB) reports that elephant is doing well. (SLD)

Clinical Note: 27.Apr.2004
Comment: Keepers (Deb and Sean) report Kandula is doing well today and feces are WNL. (SLD)

Clinical Note: 29.Apr.2004
Verbal update: Elephant acting, defecating and eating normally (DF), no health concern at this time.
A: REsolved (CSD)

Clinical Note: 7.May.2004
Proc: Blood sample today (keepers) show normal PVC (35.5) and normal WBC 19.1 suggesting that low PVC and WBC in previous sample (03/29) was due to artifact rather than real anemia. (CSD)

Clinical Note: 17.Jun.2004
Result: Trunk washes from 4/5/04-4/7/04: Neg for Mycobacterium (NVSL) (CSD)

Clinical Note: 27.Jun.2004
Prob: Flies are bothering this elephant.
During visit it was observed that elephant was very uncomfortable due to fly attack. The flies are concentrating more on feet and above the nail area.
A: Start anti-fly tx (skin so soft) after consultation with curator (CSD)

Clinical Note: 28.Jun.2004
Comt: Curator (TB) gave the OK to start anti-fly tx on this elephant. (CSD)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

Clinical Note: 29.Jun.2004
Rx: SKIN SO SOFT BATH OIL 1 spr topically SID for 60 days. (CS)

Purpose: Fly spray

Prescription Data >> Starting date: 29.Jun.2004
Drug: SKIN SO SOFT BATH OIL 1 spr topically SID for 60 days
Formulation: solution
Prescribed by: CS (29.Jun.2004) Filled by: JLK (29.Jun.2004)
Treatment weight: 1112 kg

Comments >>
Topical treatment: Apply to legs once daily for 60 days.

Dispensing Note: Dispense 60 doses. Mix 1:1 ratio of mineral oil to skin so soft.

Clinical Note: 1.Jul.2004
Rx: FAMCICLOVIR 10.5 gm PO BID for 7 days. (CS)

Prescription Data >> Starting date: 1.Jul.2004
Drug: FAMCICLOVIR 10.5 gm PO BID for 7 days
Formulation: 500.00 mg tablet
Prescribed by: CS (28.Jun.2004) Filled by: JLK (28.Jun.2004)
Drug dosage: 9.44 mg/kg Treatment weight: 1112 kg

Comments >>

Dispensing Note: Dispense 14 doses. Each dose: 21 tablets. Use 500.00 mg tablets.
Dispensed, give only when necessary.

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=====
Scientific Name: ELEPHAS MAXIMUS MAXIMUS           Accession #: 113711
Common Name: SRI LANKAN ELEPHANT                   Male
Name: Kandula                                     Birth: 25.Nov.2001
=====

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Clinical Note: 8.Jul.2004
 Rx: FAMCICLOVER 5250 mg PO BID for 7 days. (CS)

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Prescription Data >>                               Starting date: 8.Jul.2004
Drug: FAMCICLOVER 5250 mg PO BID for 7 days
Formulation: 500.00 mg tablet
Prescribed by: CS (28.Jun.2004)                   Filled by: JLK (28.Jun.2004)
Drug dosage: 4.72 mg/kg                           Treatment weight: 1112 kg

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Comments >>

 Dispensing Note: Dispense 14 doses. Each dose: 10.5 tablets. Total to dispense: 147 tablets. Use 500.00 mg tablets.

Maintenance dose
 Use when necessary

Clinical Note: 22.Jul.200

Proc: Xray from RF foot.
 Hx: No abnormalities reported. Today Xrays of the RF foot will be taken as part of the AZA recommendations.

PROC:
 Radiographs: Extremity, AP. Results: Good technique (see chart): No abnormalities noted.

A/P: Feet Xrays completed (CSD)

Clinical Note: 11.Sep.200

Rx: NOLVASAN:WATER (1:9) topically BID for 30 days. (CS)

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Prescription Data >>                               Starting date: 11.Sep.2004
Drug: NOLVASAN:WATER (1:9) topically BID for 30 days
Formulation: solution
Prescribed by: CS (11.Sep.2004)                   Filled by: VA (11.Sep.2004)
Treatment weight: 1114 kg

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Comments >>

Medical History Report - Individual Specimen
NATIONAL ZOOLOGICAL PARK

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=====
Scientific Name: ELEPHAS MAXIMUS MAXIMUS           Accession #: 113711
Common Name: SRI LANKAN ELEPHANT                   Male
Name: Kandula                                     Birth: 25.Nov.2001
=====

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Prescription Record (continued):

Topical treatment: Flush sulcus twice daily for 30 days.

Dispensing Note: Dispense 60 doses.

NOLVASAN:WATER (1:9) = CHLORHEXIDINE DIACETATE + WATER

Clinical Note:

12.Sep.200

S/O: Right sulcus - warm to touch and swollen tissue. Tissue in cranial, ventral aspect most swollen. No discharge noted. Tusk approximately 2 inch up sulcus. Left sulcus palpates WNL. Keeper (DF) reports Kandula is painful. He is eating WNL and defecation/urination are normal. Kandula blew with trunk into both sulcus during my visit.

A/P: Keepers to do nolvasan flushes BID. SLD requested culturette sample if discharge noted priort to nolvasan flush. (SLD)

Clinical Note:

13.Sep.200

Comment: Keeper (DF) says treatments are going well. Kandula allows nolvasan flushes. He still seems painful but no discharge has been noted.

P: CWPT. (SLD)

Clinical Note:

15.Sep.200

Proc: visual recheck of tusks

S/O: mild swelling still present in both sulci, soft tissue covers ends of tusks. He seems less painful to keepers and bothering area less. Flushing is going well.

A/P: continue flushing. Recheck visual weekly. (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

16.Sep.200

Proc: Culturettes from tissue from sulcus submitted.
Hx: Sample was submitted directly to lab w/o consulting with DAH.
Later on it was reported that sample (Piece of tissue) was taken off
the floor.

A: Results should be viewed with reserve due to possible
contamination. (CSD)

Clinical Note:

17.Sep.200

Result: Preliminary results showed Gram (+) organism (Strep). This
organism has been commonly isolated from non-clinical elephants at NZP
suggesting is normal flora.

A: Inflamed sulcus

P: Repeat exam week 9/20 and get new sample if sulcus inflammation is
worsening. (CSD)

Clinical Note:

18.Sep.200

Update: Keeper (MG) reports the swollen on both tusks areas has
improved significantly and Kandula is showing normal behaviour.

A: The inflammation of both sulcus is likely to be related to eruption
of tusks.

P: Keepers to report if areas become swollen again. (CSD)

Submission Data >>

Type: Fecal sample
Purpose: ROUTINE EXAMINATION

Sample id.: 2004-3591
Date collected: 7.Oct.2004

Collected from:

From an individual specimen.

Enclosure: EH

Examination Data >>

Storage: room temperature
Consistency: formed
Gross appearance: Typical

Date examined: 7.Oct.2004

Tests & Results >>

FLOATATION - SUGAR

NO PARASITES SEEN

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

13.Oct.2004

Proc: Visual exam.

S/O: Animal is BAR, no abnormalities noted in mouth, nares or eyes. Both sulcus are pink and no inflammation is present. Mod amount of debri (sand mainly) present in R sulcus. No discharge, bleeding noticed. External areas palpated: No evidence of inflammation or local incr temp.

A: The sulcus of this elephant have been flushed with nolvasan for approx 30 days.

P: D/C nolvasan today and cont flushing the sulcus (to remove debri) during hosing-bath time. (CSD)

Clinical Note:

9.Nov.2004

Proc: verbal recheck

Curator TB reports that tusks appear normal. He recently had 1-2 day period of blowing on tusks, but likely due to growth. No redness, swelling, or discharge reported around sulci.

P: resolve. Keepers will continue long-term to hose area with water. (EB)

Clinical Note:

6.Dec.2004

Hx: Routine trunk wash. Day 1/3.

Note: Last TW was done 7 months ago. USDA recommends once a year and for the past 3 years all the elephants have been negative on all trunk washes. Vets recently decided to continue twice yearly trunk washes in NZP elephants for now.

Proc

1. Trunk wash: 60 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.

A: Routine 3 day trunk wash, day 1/3

R/O tuberculosis

P: Next trunk 12/7/04 (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

7.Dec.2004

Proc: Routine trunk wash. Day 2/3.

S/O: 60 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.

A: Routine 3 day trunk wash, day 2/3

R/O tuberculosis

P: Next trunk wash 12/8/04 (EB)

Clinical Note:

8.Dec.2004

Proc: Routine trunk wash. Day 3/3.

S/O: 60 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.

A: Routine 3 day trunk wash, day 3/3

R/O tuberculosis (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

Clinical Note: 16.Dec.200

Proc: Physical exam and rabies vaccination today.
Hx: No abnormalities reported. Trunk washes were also performed last week.

Proc: BW reported as 1262 kg.

1. PEx: (PEx and vaccination performed under training command from outside enclosure)

S/O: This elephant is in excellent body condition

Integ: NSF;

EENT: OU: NSF. Oral cavity (flashlight): MM are bright pink, saliva is of normal consistency. Both tusks sulcus are normal and no evidence of discharge or inflammation noticed.

Feet and nails: All NSF.

H/L: It was not possible to auscultate with stethoscope. RR: 24/ min.

Temp: 98.5 taken from fecal bolus.

GI/UG: NSP.

Rx: Vaccination (3cc syringe with 18 ga x 1.5 in needle):

Vaccination: Imrab 3 1.0 ml sc (RR), serial #12480, exp. 01/01/06.

Injected while elephant was laying on four knees.

A: Apparently healthy.

P: Vaccinate with tetanus as soon as available in next month.

Keepers to keep trying for blood sample. (CSD)

Clinical Note: 4.Jan.2005

Proc: exam performed for conditioning and tet vax postponed for 6 mo
Note: due to change in behavior and change to protected contact in this young male, keepers have requested staggering vaccines to enable behavior to be properly trained before attempting second vaccination. SLD agreed since this animal received tet vaccine in 12/03, although it should be repeated within next 6 mo. (EB)

Clinical Note: 14.Feb.200

Results of trunk wash from 12/6-12/8/04: no Mycobacterium isolated. (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

27.Mar.200

Problem: lameness - right front limb (Confirmed)

Proc: right foreleg lameness

S/O: BAR, oral cavity WNL, moving quickly and eagerly for food and on command.

He keeps right front leg stiff at the elbow and shoulder, but bends carpus and scrapes/shuffles on bottom of foot when walking, due to straightening of leg. He can override it when excited and is then not obviously lame. Possible swelling around medial and dorsal sides of elbow, but hard to discern. Grade III/V lameness. Stands squarely on leg at rest with full weight.

Noticed by keepers right away this am, appears to have happened overnight.

A: acute moderate front leg lameness, likely upper leg. Likely due to trauma overnight of unknown cause.

P: keep inside today to limit movement. If no improvement by tomorrow, consider short course of NSAIDs. (EB)

Clinical Note:

28.Mar.200

Problem: lameness - right front limb (Confirmed)

Proc: recheck right forelimb lameness

S/O: BAR, very responsive and very willing to move for keepers and when not following commands. When he initially started moving during visit, he again kept upper leg at elbow straight and shuffled with foot, but seemed to improve while walking and was then bending leg normally for several steps, only occas. walking with leg stiff. He is able to bend entire leg normally and lift it up on command, and also put entire weight on this leg when holding the other foreleg up without problems. No obvious swelling seen, possibly slightly on medial surface of elbow joint. Area is not warmer than other elbow according to keepers. Foot palpated by EB and no abnormalities seen or felt. Oral cavity WNL. Lost lower right molar last week.

A: improved, still mild right upper forelimb lameness, r/o acute trauma

P: keep him inside again today and do not give pain meds, so to keep him somewhat more quiet. Continue to monitor. (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: SRI LANKAN ELEPHANT
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

29.Mar.200

Problem: lameness - right front limb (Confirmed)
Proc: Visual exam for R forelimb lameness.
Hx: Keepers reported that this elephant is back to normal.

S/O: BAR, no abnormalities noted during motion. No inflammation noted on R forelimb.

A: Lameness on R forelimb has almost resolved as today

P: Plan to do a final visual on 3/31 before fully resolve this case.
(CSD)

Clinical Note:

31.Mar.200

Problem: lameness - right front limb (Confirmed)
Proc: Visual exam; Lameness has completely resolved. Keepers have no concerns at this time.
A: Case resolved (CSD)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS*
Common Name: *SRI LANKAN ELEPHANT*
Name: Kandula
=====

Accession #: 113711
Male
Birth: 25.Nov.2001
=====

Clinical Note:

19.Apr.2001

Problem: lameness - right front limb (Confirmed)

Proc: episode of anorexia, lethargy, and partially loose stool
Hx: curator JG called at 15:00 informing that Kandula has become progressively lethargic today, esp. in past hour, not eating much of anything, not motivated to respond to commands, and quite lethargic. Several piles of loose stool reported.

S/O: visual exam with SZM and EB at 15:15: Kandula is dull, with ears flat and not moving much, however when stimulated by keepers, he responds to some commands. Not as eager as usual. He had begun eating some hay during 15 min previous to visit, and was eating some hay during entire exam, and also seen drinking water. Oral cavity appeared normal, pink MM. Small 1 cm long horizontal laceration between nares at septum at tip of trunk, appeared old and healing.
Feces in cage from past hour. 2 piles of solid boli surrounded by dark brown liquid fecal material. Liquid aspirated for Cx and cytology.
Results of cytology: pleomorphic bacterial population (80% gram neg) with many ciliates and botryoid clusters of yeast-like organisms. Dx: floral shift.

Weather today >80 degrees F and much warmer than past days.

Update 18:00 from keeper Simeon: has been seen eating hay in past 3 hours during most of this time. One normal bolus of feces, no more liquid seen. Seems normal to him, maybe slightly dull, but not as lethargic as earlier.

A: episode of GI upset, seems to be resolving by evening.
P: monitor closely. Keeper will check on him later tonight and report any problems. (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

Clinical Note: 20.Apr.2005

Comt: Evening check last night went well - keepers report Kandula was behaving normally and had a normal defecation overnight

Comt: Phone conversation with curator Grisham this am - he visited kandula twice today and reported he was acting very well - no abnormalities noted. Agreed that a vet visit would not be necessary today, but DAH would be contacted asap if any abnormality was noted.

P: case resolved. (SZM)

Clinical Note: 26.Apr.2005

Results of fecal Cx from 4/19/05:
No salmonella or shigella isolated. Heavy mixed flora. (EB)

Clinical Note: 7.Jun.2005

Comt: Over the past few weeks an elephant urine study was being conducted at the elephant house (with prior IACUC approval). Blood will be requested on all elephants to run Herpes tests. In addition, some of the urine samples will be run by PCR to test for Herpes. It may or may not be possible for keepers to collect blood from this elephant, but they will try. (SZM)

Clinical Note: 13.Jun.2005

Hx: Routine trunk wash, Day 1/3.
Proc: Trunk wash: 60 ml saline instilled in trunk by keepers with protected contact. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.

A: Routine 3 day trunk wash, day 1/3
R/O tuberculosis

P: Next trunk wash 6/14. (EB)

=====
Scientific Name: *ELEPHAS MAXIMUS MAXIMUS* Accession #: 113711
Common Name: SRI LANKAN ELEPHANT Male
Name: Kandula Birth: 25.Nov.2001
=====

Clinical Note: 14.Jun.200

Hx: Routine trunk wash. Day 2/3.
Proc: Trunk wash: 60 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.
A: Routine 3 day trunk wash, day 2/3
R/O tuberculosis
P: Next trunk wash 6/15. (CSD)

Clinical Note: 15.Jun.200

Problem: vaccination
Hx: Routine trunk wash. Day 3/3. Tetanus vaccination.
Proc: Trunk wash: 60 ml saline instilled in trunk by keepers. Trunk raised then lowered as animal blew contents of trunk into plastic bag. Wash fluid transferred to sterile centrifuge tube.

Vaccination: Tetanus toxoid, 1.0 ml im, serial #277334A, exp.1/4/06 with 6 ml syringe and 18 x 1.5 in. needle in right thigh through bars, uneventful and elephant was very cooperative.

A: Routine 3 day trunk wash, day 3/3
R/O tuberculosis
P: Trunk washes completed; culture results pending. Tetanus due again by 6/06. (EB)

Clinical Note: 29.Aug.200

Results of mycobacterium culture from trunk washes 6/13-15/05 are negative (NVSL) (EB)

Clinical Pathology Records Report - ISIS/In-House Reference Values
NATIONAL ZOOLOGICAL PARK

Scientific name: *ELEPHAS MAXIMUS*
Common Name: ASIATIC ELEPHANT

		ISIS Values				
		Mean	S.D.	Min.	Max.	(N)
WBC	*10 ³ /UL	14.43 ±	4.409	5.800	33.30	(1779)
RBC	*10 ⁶ /UL	3.06 ±	0.51	1.78	5.15	(1501)
HGB	GM/DL	13.2 ±	2.2	6.6	24.9	(1568)
HCT	%	37.1 ±	6.0	20.3	68.0	(1890)
MCH	MG/DL	43.3 ±	4.8	16.6	63.2	(1464)
MCHC	ug	35.4 ±	3.6	16.9	68.6	(1536)
MCV	fL	122.3 ±	13.4	47.1	213.2	(1491)
SEGS	*10 ³ /UL	4.822 ±	2.925	0.291	23.90	(1502)
BANDS	*10 ³ /UL	1.402 ±	2.124	0.000	11.40	(307)
LYMPHOCYTES	*10 ³ /UL	5.243 ±	3.223	0.196	20.60	(1513)
MONOCYTES	*10 ³ /UL	3.677 ±	2.909	0.000	9.983	(1273)
EOSINOPHILS	*10 ³ /UL	0.465 ±	0.551	0.000	4.520	(1093)
BASOPHILS	*10 ³ /UL	0.173 ±	0.105	0.000	0.508	(119)
NRBC	/100 WBC	1 ±	1	0	3	(85)
PLATE. CNT.	*10 ³ /UL	469 ±	215	121	1394	(428)
RETICS	%	0.8 ±	1.6	0.0	4.4	(10)
GLUCOSE	MG/DL	91 ±	21	33	223	(1257)
BUN	MG/DL	13 ±	4	4	30	(1260)
CREAT.	MG/DL	1.6 ±	0.4	0.7	3.3	(1230)
URIC ACID	MG/DL	0.2 ±	0.3	0.0	3.4	(286)
CA	MG/DL	10.6 ±	0.8	7.8	14.8	(1184)
PHOS	MG/DL	5.0 ±	1.2	1.9	11.1	(724)
NA	MEQ/L	130 ±	6	99	181	(859)
K	MEQ/L	4.6 ±	0.5	3.2	6.6	(861)
CL	MEQ/L	89 ±	4	77	103	(731)
IRON	MCG/DL	65 ±	23	29	158	(82)
MG	MG/DL	2.10 ±	0.53	0.00	2.90	(68)
HCO3	MMOL/L	26.3 ±	3.0	19.0	32.3	(55)
CHOL	MG/DL	48 ±	19	0	189	(599)
TRIG	MG/DL	61 ±	42	10	329	(745)
T. PROT. (C)	GM/DL	8.1 ±	0.8	5.8	11.3	(1227)
T. PROT. (R)	GM/DL	8.4 ±	0.4	7.8	9.2	(23)
ALBUMIN (C)	GM/DL	3.2 ±	0.5	1.9	4.7	(648)
GLOBULIN (C)	GM/DL	5.0 ±	1.0	2.7	8.6	(639)
AST (SGOT)	IU/L	22 ±	11	4	97	(1227)
ALT (SGPT)	IU/L	7 ±	8	0	72	(781)
T. BILI.	MG/DL	0.2 ±	0.2	0.0	1.2	(765)
D. BILI	MG/DL	0.1 ±	0.1	0.0	1.3	(233)
I. BILI.	MG/DL	0.1 ±	0.1	0.0	0.6	(224)
AMYLASE	U/L	3017 ±	2492	0	9866	(170)
ALK. PHOS.	IU/L	143 ±	66	28	641	(1157)
LDH	IU/L	655 ±	703	46	4769	(495)

Clinical Pathology Records Report - ISIS/In-House Reference Values
NATIONAL ZOOLOGICAL PARK

Scientific name: *ELEPHAS MAXIMUS*
Common Name: ASIATIC ELEPHANT

		ISIS Values				
		Mean	S.D.	Min.	Max.	(N)
CPK	IU/L	225 ±	170	23	1260	(486)
OSMOLARITY	MOSMOL/L	264 ±	29	0	325	(98)
ALPHA GLOB.	MG/DL	250.4 ±	353.1	0.7	500.0	(2)
ALPHA-1 GLOB	MG/DL	0.8 ±	0.1	0.7	1.0	(6)
ALPHA-2 GLOB	MG/DL	0.9 ±	0.2	0.7	1.1	(6)
BETA GLOB.	MG/DL	1.0 ±	0.6	0.6	1.4	(2)
Body Temperature:		36.3 ±	0.5	36.0	37.0	(4)
CO2	MMOL/L	24.8 ±	4.0	15.8	37.0	(230)
CORTISOL	UG/DL	2.0 ±	1.0	0.5	5.4	(35)
ESR	MM/HR	98 ±	32	53	130	(7)
FIBRINOGEN	MG/DL	371 ±	181	0	810	(238)
GGT	IU/L	7 ±	5	0	33	(314)
LIPASE	U/L	19 ±	30	0	127	(53)
PROGESTERONE	NG/DL	18.82 ±	62.45	0.020	346.0	(379)
TESTOSTERONE	NG/ML	20.34 ±	27.95	0.570	40.10	(2)
A-TOCOPHEROL	UG/DL	19 ±	15	0	42	(8)
TOT. T4 (RIA)	UG/DL	10.0 ±	2.7	4.2	12.6	(10)
T3 UPTAKE	%	28 ±	2	26	29	(2)
ALBUMIN (E)	GM/DL	4.1 ±	0.6	3.5	4.9	(4)
GAMMA GLOB	GM/DL	2.9 ±	2.9	0.0	9.0	(11)