The following content was supplied by the author as supporting material and has not been copy-edited or verified by JBJS.

CORTICES

Advancing evidence-based orthopedic care

Floating Knee

Data Dictionary

Column A - Patient code

This should be the study number for the patient, so it should be the first 3 letters of your site and the patient number ie for CHOP - PHI1,2,3 etc.

Column B - Sex

Male or Female discrete fields, just click from the drop down which the patient is.

Column C - Race

These are discrete fields also, choices are American Indian or Alaskan native, Asian, Black or African American, Hispanic or Latino, Hawaiian or Pacific Islander, or White.

Column D - Age

Age is recorded in months, please free text **just the number** in months. This age is the age on the day of injury.

Column E - Weight (kg)

Weight is recorded in kilograms on the day of injury or as close as you can find it to the day of injury. Please free text **just the number**.

Column F - Height (cm)

Height is recorded in centimeters on the day of injury or as close as you can find it to the day of injury. Please free text **just the number**.

Column G - BMI

This is a calculation which is obtained by dividing the weight in kg by the height in meters. Please free text **just the number**.

Column H - Admission Diagnosis

Please free text the admission diagnosis for this it should be the primary and secondary diagnoses the patient was treated for during the admission in question, where possible, any secondary diagnoses such as spleen laceration pulmonary contusion should be included.

Column I - Past medical and surgical history

Please free text any preexisting conditions which were present (asthma diabetes, cerebral palsy etc.).

Column J - Mechanism of injury

For this column we would like the mechanism of injury, this will be a discrete field with the following values:

1. MVA - Motor vehicle accident, this includes street motorcycles and mopeds as well, as well as auto versus another motor vehicle such as a motorized scooter or motorcycle
2. ATV - All terrain vehicle accident, this includes dirt bikes
3. AVP - Auto versus pedestrian, this includes non-motorized bicycle versus car as well, as well as children struck on skateboards and non-motorized scooters
4. Fall - Any fall from height not accounted for in another category
5. Sports - Including skiing and snowboarding
6. NAT – Non-accidental trauma
7. Other - Any mechanism not otherwise included

Column K - Discharge Diagnosis

This column includes any diagnosis not included in admission diagnosis, ie if the patient had a PE or ARDS, or other medical issue other than what they came in with, admit diagnosis is not needed in this column.

Column L - Femur fixation strategy

This indicates the primary strategy employed to fix the femur, and should be one of the following choices (discrete field):

RIMN - Reamed IMN

ESIN - Flexi nail

ORIF - Plates screws or screws

CRPP - perc pins or perc screws

Cast - LLC or spica (as primary RX)

Ex fix - for definitive RX only, staged ex fix converted to something else would be listed as the other strategy

- There is a notes column at the end use it to indicate situations where multiple strategies were employed or just email me.

Column M - Tibia fixation strategy

This indicates the primary strategy employed to fix the tibia, and should be one of the following choices (discrete field):

RIMN - Reamed IMN

ESIN - Flexi nail

ORIF - Plates screws or screws

CRPP - perc pins or perc screws

Cast - LLC or cast (as primary RX)

Ex fix - for definitive RX only, staged ex fix converted to something else would be listed as the other strategy

- There is a notes column at the end use it to indicate situations where multiple strategies were employed or just email me.

Column N - Complications detected

Any complication from treatment or injury. We would not consider hardware removal a complication. Please be sure to check to see if the patient had malunion of more than 10 degrees in any plane and note this in free text in this column, also mention compartment syndromes infections, non-unions leg length discrepancy or any follow-up surgery the patient needed that was not related to hardware removal (like corrective osteotomy or guided growth).

Column O - total length of stay (days)

This is total length of inpatient hospitalization. If the patient was discharged more than a week and then readmitted only count the first hospitalization count the second as a complication (column N) but do not add them together, if the patient was home or in rehab less than 7 days count it as one hospitalization.

Column P - Time to unsupported ambulation

Time until the patient did not require walker, crutches, cane, wheelchair or other assistive device for locomotion. This should be in days. If the patient was never again able to do this write "never".

Column Q - Time until union tibia (weeks)

For standardization of union we will code it in the following fashion - Each cortex on the AP and lateral view gets scored as below:

1. Fracture line visible, no callus visible

2. Fracture line visible, callus visible

3. Fracture line invisible, callus visible

Add the scores together the fracture will be considered united on the first x-ray where the score is 10/12 or better. An example would be a tibia where on the AP both cortexes were 3s and the lateral both cortexes were 2.

Column R - Time until union femur (weeks)

For standardization of union we will code it in the following fashion - Each cortex on the AP and lateral view gets scored as below:

1.   Fracture line visible, no callus visible

2.   Fracture line visible, callus visible

3.   Fracture line invisible, callus visible

Add the scores together the fracture will be considered united on the first x-ray where the score is 10/12 or better. An example would be a femur where on the AP both cortexes were 3s and the lateral both cortexes were 2.

Column S - Karlstrom Criteria

Highest minimum value where all are true do your best. I can check it based on some of your other answers. This is a discrete value:

Excellent

Good

Acceptable

Poor

Table 3: Karlstrom criteria for functional assessment after management of floating knee injuries

CRITERION	EXCELLENT	GOOD	ACCEPTABLE	POOR
Subjective symptoms from thigh or leg	none	Intermittent slight symptoms	More severe symptom impairing function	Considerable functional impairment: pain at rest
Subjective symptoms from knee or ankle joint	none	Same as above	Same as above	Same as above
Walking ability	Unimpaired	Same as above	Walking distance restricted	Uses cane, crutch or other support
Work and sports	Same as before the accident	Given up some sport; work same as before accident	Change to less strenuous work	Permanent disability
Angulation, rotational deformity or both	0	<10 degrees	10 – 20 degrees	> 20 degrees
Shortening	0	< 1 centimetre	1 – 3 centimetres	> 3 centimetres
Restricted joint mobility	0	<10 degrees at ankle; <20 degrees at hip, knee or both	10 – 20 degrees at ankle; 20 – 40 at hip, knee or both	>20 degrees at ankle; >40 degrees at hip, knee or both

Column T - Range of motion at follow-up

This is also a discrete field this is at the final clinical follow up or as close to it as you can reasonably get. Range of motion choices are "full" limited 10 degrees or less, or limited 10 degrees or more. Full ROM will be considered 0-135 degrees.

Column U - Pain at follow up

This is a discrete field and should be recorded for the last available follow up. Please code the pain as "none" if there is no pain, "occasional" if the patient complains of pain less than 50% of the time, or "constant" if the patient complains of pain more than half the time.

Column V - Walking ability

This is a discrete field, the values are "normal" if it is the same as the patients pre morbid condition, "distance restricted" if they can't walk as far as prior to injury, or "uses device or cannot" if they require an assistive device or cannot walk.

Column W - Time to return to sports

Time in weeks for the patient to return to sports or gym. This can be any type of athletic activity, and not necessarily what they were doing prior to injury. It should be in weeks from date of injury.

Column X - Return to sports

This is a discrete column, which the following options are available - "same sport" in which the same sport is played with the same intensity (effectively the same as premorbid), "lesser sport" is either less participation in the same sport, or requiring a change of sport participation in some way; "none" the child no longer participates.

Column Y - Femur fracture AO classification

Using AO typical classification as a discrete field, we did not use the pediatric AO classification but rather the regular one. The classification may be found here:

https://www2.aofoundation.org/wps/portal/surgery?showPage=diagnosis&bone=Femur&segment=Shaft

Column Z - Tibia AO classification

Using AO typical classification as a discrete field, we did not use the pediatric AO classification but rather the regular one. The classification may be found here:

https://www2.aofoundation.org/wps/portal/surgery?showPage=diagnosis&bone=Tibia&segment=Shaft

Column AA - Letts Floating Knee Classification

This pediatric floating knee classification populates discrete fields with the following values:

- A- Both Diaphyseal Closed fractures
- B- At least one metaphyseal but both closed fractures
- C- At least one epiphyseal but both closed fractures
- D- One fracture open
- E- Both fractures open

Column AB - Open fracture GA classification

Type in the fracture type for each you will list 2 types if both the femur and tibia are open. Below is a summary of the GA fracture classification. 3B are type 3 fractures that require soft tissue coverage and type 3 C have a vascular injury that requires repair.

Type	Description
I	Skin wound less than 1 cm
	Clean
	Simple fracture pattern
II	Skin wound more than 1 cm
	Soft-tissue damage not extensive
	No flaps or avulsions
	Simple fracture pattern
III	High-energy injury involving extensive soft-tissue damage
	Or multifragmentary fracture, segmental fractures, or bone loss irrespective of the size of skin wound
	Or severe crush injuries
	Or vascular injury requiring repair
	Or severe contamination including farmyard injuries

Gustilo and Anderson classification of open fractures

Column AC - Total length follow up (weeks)

Free text the number of weeks to the last clinical visit OR radiologic follow up (whichever is longer). This should be recorded from date of injury.

Column AD - Intraoperative complications

This should be free text for only complications which occurred intraoperatively.

Any questions regarding how a patient should be recorded should be directed to Keith Baldwin: baldwink@email.chop.edu