

Appendix 3– Data Fields

1. ADMISSION DATA AND CLINICAL CHARACTERISTICS

Site Unique Patient Identifier	
Biological Sex	Male, Female
Date of Birth	dd/mm/yyyy
Date of admission to hospital	dd/mm/yyyy
Date of referral	dd/mm/yyyy
Referred by (choose one)	Primary healthcare facility/ general practitioner General Surgery Adult Medicine Paediatric medicine ENT Orthopaedics Infectious diseases specialist Other surgical specialty Other (text)
Admission location (choose highest level of admission)	<ul style="list-style-type: none"> • General ward • High care unit • Intensive care unit
Duration of symptoms (of longest-standing symptom)	1-7 days 8-14 days More than 14 days
Presenting symptoms (tick all that apply)	Pain – Headache/ Back + neck pain Fever Night sweats Loss of weight Seizures Decreased level of consciousness Focal deficit Visual disturbance Cerebellar symptoms Sensorimotor symptoms Other (specify)
GCS on arrival to your institution (if intubated on arrival, V=T)	GCS: E= M= V=
Neurological deficit (select all that apply)	Cranial nerve palsy (any)

	<ul style="list-style-type: none"> Hemiparesis Monoparesis Paraparesis Sensory deficit Cerebellar signs Other (specify)
Pupillary reaction (choose one)	<ul style="list-style-type: none"> Both pupils equal and reactive Both pupils reactive but sluggish Unilateral unreactive pupil Bilateral unreactive pupils
Raised intracranial pressure suspected (clinically and/or radiologically)	<ul style="list-style-type: none"> Yes No
Source of infection (if known)	<ul style="list-style-type: none"> Ear Cranial air sinus Dental Systemic sepsis Organ infection elsewhere IV drug abuse
Any systemic features? (select all that apply)	<ul style="list-style-type: none"> Fever Hypotension Hypoxia Respiratory pathology Cardiovascular pathology Renal pathology Liver pathology Other (specify)
Co-morbidity/ preceding condition (select all that apply)	<ul style="list-style-type: none"> Malnutrition HIV Previous direct trauma to CNS Drug abuse Immunocompromise (other) Previous CNS infection Surgery (outside of CNS) Diabetes Systemic tuberculosis Systemic sepsis Chronic ear disease Chronic sinus disease Cardiac disease Liver disease Respiratory disease Renal disease GIT disease Dental disease

	Other (specify)
Type of Infection (what is the main presenting clinical syndrome?) Choose one or more	<ul style="list-style-type: none"> ● Meningitis ● Tuberculous meningitis ● Empyema ● Abscess ● Hydatid cyst ● Brain abscess ● Tuberculoma ● Neurocystercosis ● Fungal mass ● Bony involvement – cranial/ spinal ● Associated hydrocephalus ● Diffuse inflammation
Focal <u>or</u> diffuse/multicentric lesion (eg. Single tuberculoma or abscess <u>Vs</u> Meningitis or multiple abscesses)	Focal Diffuse
Main location of pathology (Can choose more than one)	Cranial <ul style="list-style-type: none"> ● Bone ● Extra-axial ● Intra-axial ● Supratentorial ● Infratentorial cerebellum ● Infratentorial brainstem Spinal <ul style="list-style-type: none"> ● Bone ● Disc ● Extradural ● Intradural extramedullary ● Intradural intramedullary Any additional comment:

1.2 IMAGING DATA

Was a lumbar puncture performed before first neuro-imaging?	Yes No
Date of first neuro-imaging	dd/mm/yyyy
Most advanced type of imaging performed	<ul style="list-style-type: none"> ● Plain film radiograph ● Ultrasound ● Non-contrasted CT Scan ● Contrasted CT Scan ● MRI Scan
Main pathology location	Frontal Temporal Parietal Occipital

	Cisternal Intraventricular Cerebellar Brainstem Craniocervical junction Cervical Thoracic Lumbar Sacral Diffuse brain Diffuse spine Diffuse brain and spine
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1.3 INFECTION MANAGEMENT

Microbiological organism confirmation status	Suspected Confirmed
Causative organism category (suspected <u>or</u> confirmed)	Bacterial Tuberculous Fungal Neurocystercosis Hydatid Toxoplasmosis Cryptococcus Malaria Unknown Other (specify)
Specific causative organism (suspected or confirmed), e.g. Haemophilus influenzae	
Mechanism of organism identification?	Culture PCR Serological marker Other (specify)
What was the intended infection management?	No intervention Oral antibiotics IV antibiotics Operative
Was there antibiotic resistance to first-line agents?	No Yes Unknown Not applicable

1.4 OPERATIVE DATA

Was neurosurgery performed?	Yes No
If yes, what was the first procedure? (select multiple)	Burrhole Craniotomy Craniectomy External ventricular drainage Ventriculoperitoneal shunt Drainage of lesion Excision of lesion Laminectomy Laminotomy Vertebrectomy
Date of (first) Operation	dd/mm/yyyy
Grade of <u>most</u> senior surgeon present in the operating theatre?	<ul style="list-style-type: none"> ● Fully qualified neurosurgeon ● Neurosurgical trainee/s ● Other qualified surgeon/ surgical trainee ● Medical doctor
Type of anaesthesia administered	<ul style="list-style-type: none"> ● General ● Local ● Other
Anaesthesia administered by?	<ul style="list-style-type: none"> ● Anaesthetist ● GP with an anaesthetic diploma ● GP ● Other:
Duration of operation	<ul style="list-style-type: none"> ● Less than 1 hour ● 2-3 hours ● More than 3 hours
Were pre-incision prophylactic antibiotics given?	<ul style="list-style-type: none"> ● Yes ● No
Were there any intra-operative complications during any of the procedures and if so, what?	None Operative site bleeding Haemodynamic instability Cardiac arrest Respiratory complications, including ETT problems Unintended durotomy Death Other (specify)
Were there any postoperative complications of any of the procedures (early or late) and if so, what?	New neurological deficit Postoperative bleed Surgical site infection EVD or shunt infection CSF leak from wound

	Shunt obstruction Deep venous thrombosis Respiratory infection Renal failure Electrolyte imbalances Death
What was the patient's postoperative course?	Stable Improved Neurological deterioration
What was the result of postoperative imaging performed, if any, after the first surgery?	Not applicable (no surgery performed) Improved Similar to preoperative scan Worse No postoperative imaging obtained.
Were there any other neurosurgical procedure performed thereafter?	Y N
If yes, how many neurosurgical procedures were performed in total?	1 2 3 4 or more
What other neurosurgical procedures were performed after the first (at any stage)?	Burrhole Craniotomy Craniectomy External ventricular drainage Endoscopic third ventriculostomy Endoscopic fenestration Ventriculoperitoneal shunt Drainage of lesion Excision of lesion Laminectomy Laminotomy Vertebrectomy Other (specify)
What adjuncts were used in any of the surgical procedures, if any?	None Ultrasound Microscope Endoscope Neuronavigation Other (text)
What other non-CNS surgical procedures were performed, if any?	ENT sinus surgery ENT mastoidectomy Dental surgery

	Cardiac surgery Other (specify)
Funding for clinical management, including surgery (Select all who contributed)	<ul style="list-style-type: none"> ● Patient ● Family ● Government ● Insurer ● Hospital ● NGO ● Other (specify)

1.5 OUTCOME DATA

Date of discharge (if applicable)	dd/mm/yyyy
Survival to discharge from hospital/30 days post-admission?	<ul style="list-style-type: none"> ● Yes ● No
If no, when was the death (post-referral to neurosurgery)?	1 day 2 days 3-7 days 8-14 days 14-30 days More than 30 days
If the patient survived, where were they discharged to?	Not discharged, still an inpatient (at 30 days post-admission) Discharged home. Discharged to rehabilitation facility.
If the patient survived, what was the patient's condition at discharge/30 days post-admission?	ADULTS: GOS-E 1 [dead] GOS-E 2 [vegetative] Absence of awareness of self and environment. Unable to obey simple commands. GOS-E 3 [lower severe disability] Needs full assistance in activities of daily living. Unable to look after themselves for 8h. GOS-E 4 [upper severe disability] Needs partial assistance in activities of daily living. Unable to look after themselves for 24h, or unable to shop or unable to travel. GOS-E 5 [lower moderate disability] Independent, but cannot resume work/ school or all previous social activities. Unable to work/study/ participate. Constant problems with family and friends. GOS-E 6 [upper moderate recovery]

	<p>Some disability exists but can partly resume work or previous activities. Reduced work capacity, participates less.</p> <p>GOS-E 7 [lower good recovery] Minor physical or mental deficits that affect daily life. Participates a bit less in social and leisure activities. Occasional problems with personal relationships.</p> <p>GOS-E 8 [upper good recovery] Full recovery or minor symptoms that do not impair life.</p> <p>CHILDREN (note: reversed order):</p> <p>PGOS-E 1 [upper good recovery] Full recovery or minor symptoms that do not impair life.</p> <p>PGOS-E 2 [lower good recovery] Minor physical or mental deficits that affect daily life.</p> <p>PGOS-E 3 [upper moderate recovery] Some disability/ symptoms exist but can partly resume work or previous activities. Participates less often.</p> <p>PGOS-E 4 [lower moderate recovery] Able to go to school/work only in a sheltered environment/ special school, or unable to go to school/work.</p> <p>PGOS-E 5 [upper severe disability] Does not need frequent help at home, but unable to shop or travel without assistance or behave appropriately outside the home.</p> <p>PGOS-E 6 [lower severe disability] Needs frequent help from a caretaker to accomplish tasks they should be able to do at this age.</p> <p>PGOS-E 7 [vegetative] Unable to obey simple commands, unable to act/react beyond reflexes.</p> <p>PGOS-E 8 [dead]</p>
<p>For Category B sites, what was the patient's condition at 6 months post-admission/referral?</p>	<p>ADULTS:</p> <p>GOS-E 1 [dead]</p> <p>GOS-E 2 [vegetative] Absence of awareness of self and environment. Unable to obey simple commands.</p> <p>GOS-E 3 [lower severe disability] Needs full assistance in activities of daily living. Unable to look after themselves for 8h.</p>

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	PGOS-E 8 [dead]
In the overall management of the patient, what resources did you not have but would have ideally used that you think could have assisted management of the patient?	<p>No additional resources needed.</p> <p>CT (pre- or post-operative)</p> <p>MRI</p> <p>Microbiological tests (eg. Culture, GeneXpertUltra, etc)</p> <p>Surgical tools</p> <p>Intraoperative ultrasound</p> <p>Neuronavigation</p> <p>Access to an ICU bed</p> <p>Rehabilitation therapies</p> <p>Other (specify)</p>
Any additional comments?	