



دائرة الصحة  
DEPARTMENT OF HEALTH

# **JAWDA KPI for Organ Donation Program (ODP) Service Providers**

January 2020

# Table of Contents

<b>Executive Summary</b> .....	3
<b>About this Guidance</b> .....	4
<b>Donation process procedures</b> .....	5
<b>Donation team full time availability</b> .....	6
<b>Identification of all Possible Donors in the ICU</b> .....	7
<b>Identification of Death by Neurological Criteria</b> .....	9
<b>Referral of Potential Deceased Brain Death (DBD) Donors</b> .....	10
<b>Patient Family Consent</b> .....	11
<b>Appendix A-ICD- 10 Codes</b> .....	12
Summary of Code Changes to 2018 code sets .....	15

## Executive Summary

The Department of Health– Abu Dhabi (DOH) is the regulatory body of the healthcare sector in the Emirate of Abu Dhabi and ensures excellence in healthcare for the community by monitoring the health status of its population.

The Emirate of Abu Dhabi is experiencing a substantial growth in the number of hospitals, centers and clinics. This is ranging from school clinics and mobile units to internationally renowned specialist and tertiary academic centers. Although, access and quality of care has improved dramatically over the last couple of decades, mirroring the economic upturn and population boom of Emirate of Abu Dhabi, however challenges remain in addressing further improvements.

The main challenges that are presented with increasingly dynamic population include an aging population with increased expectation for treatment, utilization of technology and diverse workforce leading to increased complexity of healthcare provision in Abu Dhabi. All of this results in an increased and inherent risk to quality and patient safety.

DOH has developed dynamic and comprehensive quality framework in order to bring about improvements across the health sector. This guidance relates to the quality indicators that DOH is mandating the quarterly reporting against by the operating general and specialist hospitals in Abu Dhabi.

The guidance sets out the full definition and method of calculation for patient safety and clinical effectiveness indicators. For enquiries about this guidance, please contact [jawda@DoH.gov.ae](mailto:jawda@DoH.gov.ae)

This document is subject for review and therefore it is advisable to utilize online versions available on the DOH at all times.

Issued: January 2020  
Published Update: Version 2, October 2021

## About this Guidance

The guidance sets out the definitions and reporting frequency of JAWDA Organ Donation Program (ODP) performance indicators. The Department of Health (DoH), with consultation from local and international expertise of organ donation processes, has developed organ donation performance Indicators. The implementation of quality indicators in organ donation programs assure the establishment of quality procedures and consequently it guarantees increasing not only the number of organ donors but also the quality of the organs for transplant.

The Jawda KPI for brain deaths patients in this guidance include measures to monitor I.e. donation process procedures, availability of donation team, Identification of all possible donors in the ICUs and Referral of possible DBD donors, brain death identification, and patient /family consent.

### Who is this guidance for?

All DoH licensed healthcare facilities providing organ donation program services in the Emirate of Abu Dhabi.

### How do I follow this guidance?

Each provider will nominate one member of staff to coordinate, collect, monitor and report organ donation program quality indicators data as per communicated dates. The nominated healthcare facility lead must in the first instance e-mail their contact details (if different from previous submission) to [JAWDA@doh.gov.ae](mailto:JAWDA@doh.gov.ae) and submit the required quarterly quality performance indicators through Jawda online portal.

### What are the Regulation related to this guidance?

- Ministry Decree No 550 – 2017, defining criteria for diagnosing death.
- UAE Protocol for Organ Donation.
- Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.
- Federal law No 4 for Medical Liability.
- Legislation establishing the Health Sector
- As per DoH [Policy for Quality and Patient Safety](#) issued January 15<sup>th</sup> 2017, this guidance applies to all DoH Licensed Hospital Healthcare Facilities in the Emirate of Abu Dhabi in accordance with the requirements set out in this Standard.

KPI Description (title):	<b>Donation process procedures</b>
<b>Domain</b>	Quality
<b>Sub-Domain</b>	Effectiveness
<b>Definition:</b>	<p>All the main steps of the donation process are covered by protocols and procedures (Donor identification, Death declaration, Donor evaluation, Donor maintenance, Family interview, Operating theatre organization, Organ packaging and transportation, Communication with the Abu Dhabi Organ Donation &amp; Transplantation Center (ADODTC), Reconstruction of the donor body), which ensure the proper and standardized performance of each step of the donation process.</p> <p><b>Relevant steps:</b></p> <ol style="list-style-type: none"> <li>1. Donor identification</li> <li>2. Death declaration</li> <li>3. Donor evaluation</li> <li>4. Donor maintenance</li> <li>5. Family approach</li> <li>6. Operating theatre organisation</li> <li>7. Communication with the sharing/allocation office</li> <li>8. Organ packaging and transportation (if applicable)</li> </ol> <ul style="list-style-type: none"> <li>• Existence of protocols and procedures: Each protocol and procedure must include the following information: <ul style="list-style-type: none"> <li>- Who performs the procedure</li> <li>- When</li> <li>- How</li> </ul> </li> <li>• The protocol is considered current if it has been developed or updated within the last 3 years.</li> <li>• The protocol should be available to all the people involved in the organ donation process.</li> </ul>
<b>Calculation:</b>	Existence of protocols and procedures for all relevant steps of the donation process (Yes /100 % or No / 0%)
<b>Inclusion</b>	Not applicable
<b>Exclusion</b>	Not applicable
<b>Reporting Frequency:</b>	Quarterly
<b>Unit of Measure:</b>	Percentage
<b>International comparison if available</b>	Quality Criteria and Quality Indicators in Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
<b>Desired direction:</b>	100%
<b>Notes for all providers</b>	
<b>Data sources and guidance:</b>	<p><b>NOTE:</b> The protocols' 8 sections can be part of the same document or they can be independent documents, but they must be covered in order to meet the indicator. These protocols could be developed by the hospital or by the region/nation. If they are developed by the region/nation, the hospital should still have them available.</p> <ol style="list-style-type: none"> <li>1. Ministry Decree No 550 – 2017, defining criteria for diagnosing death.</li> <li>2. Standardized Critical Care Cases Notification and UAE Organ Brain Death Diagnosis Protocol</li> <li>3. Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>4. Federal law No 4 for Medical Liability.</li> </ol> <p><a href="https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation">https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation</a></p>

<b>KPI Description (title):</b>	<b>Donation team full time availability</b>
<b>Domain</b>	Quality
<b>Sub-Domain</b>	Effectiveness
<b>Definition:</b>	Organ donation is an unplanned activity. Potential donors are unstable and need urgent care. Detection and management of the potential donor by the donation team (DT) is needed 24/7 for the entire process, from the detection to the retrieval, to avoid losing a donor. Because many things need to be done, the direct implication of the DT is mandatory. DT is available in every shift every day (24/7).
<b>Calculation:</b>	Availability of the Donation team 24/7 (Yes/100% or No/0%)
<b>Inclusion</b>	Not applicable
<b>Exclusion</b>	Not applicable
<b>Reporting Frequency:</b>	Quarterly
<b>Unit of Measure:</b>	Percentage
<b>International comparison if available</b>	Quality Criteria and Quality Indicators in Organ Donation Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
<b>Desired direction:</b>	100%
<b>Notes for all providers</b>	
<b>Data sources and guidance:</b>	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• The physical presence of the DT is not necessarily 24 hours a day in hospitals with a low activity of donation. They can be on call at least part of the day.</li> <li>• Documentation about the organisation of the Donor Team (ICU Director and ICU Nurse as minimum) in the hospital.</li> <li>• Documentation from the Human Resources Department, for example, contracts, organisational charts, job descriptions, call schedule, etc.</li> </ul>

<b>KPI Description (title):</b>	<b>Identification of all Possible Donors in the ICU</b>
<b>Domain</b>	Quality
<b>Sub-Domain</b>	Efficiency, effectiveness
<b>Definition:</b>	<p>Percentage of comatose patients with devastating cerebral lesion admitted to the ICU who are identified and reviewed by the Organ Donation Champion within 24 hours of meeting the clinical criteria.</p> <p><b>Justification:</b>                      Identification of potential organ donors in the ICU is a critical step of the donation process. The monitoring of referred patients with death by neurological criteria may underestimate the real number of possible deceased after death by neurological criteria donors. Obtaining more reliable data depends on monitoring all comatose patients with acute cerebral lesion who are admitted to the ICU, will help to identify the subgroup of patients who meet the brain-death criteria.                      Identification of potential organ donors will be enhanced by establishing robust communication between Donation Champion and the ICU Unit personnel (Physicians &amp; Nurses), and having smart electronic solutions such efficient trigger or alert system. Measurement of this trigger-capacity may represent a major target for quality improvement.</p> <p><b>Explanation of terms:</b>  <b>Criteria for <u>identification</u> of Critical Care Cases who are possible organ donor:</b>                      GCS &lt; 8 <u>and</u> intubated <u>and</u> devastating cerebral lesion (as per definition below and ICD 10 codes, Appendix A).  <b>Organ Donation Champion(s):</b> ICU nurse, Intensivist or other qualified clinical staff as assigned Health Care Facility Management.  <b>Comatose patients:</b> GCS&lt; 8 on admission to the hospital or during ICU management reasonably not caused by sedation.  <b>Devastating cerebral lesion:</b> Any cerebral lesion potentially causing (or being co-factor of or complication) death by neurological criteria in ICU. This also includes:                      - Acute cerebral lesion (brain trauma, postanoxic, stroke etc.) that supervenes as a complication.                      - Sub-acute or chronic disorders such as brain tumors when spontaneous or postoperative intracranial hypertension, hemorrhagic and cerebral oedema occur.  <b>Patient identification:</b> Patient with devastating cerebral lesion admitted to the ICU who are identified and reviewed by the Donation Champion within 24 hours of meeting the clinical criteria.                      Identified patients are documented in a registry (in which clinical data and the time of triggering are reported) that is maintained by the Organ Donation Champion.  <b>Donor hospital:</b> Any hospital with Intensive Care Unit.  <b>Possible Deceased Brain Death (DBD) Donor:</b> A patient with a devastating brain injury or lesion and apparently medically suitable for organ donation.</p>
<b>Calculation:</b>	$\frac{\text{Number of comatose patients with devastating cerebral lesion admitted to the ICU who are identified and reviewed by the Organ Donation Champion within 24 hours of meeting criteria}}{\text{Number of comatose patients with devastating cerebral lesion admitted to the ICU meeting the criteria for identification of critical care cases}} \times 100$
<b>Inclusion</b>	All comatose patients with devastating cerebral lesion admitted to the Intensive Care Unit.
<b>Exclusion</b>	Patients not meeting inclusion criteria as specified
<b>Reporting Frequency:</b>	Quarterly

<b>Unit of Measure:</b>	Percentage
<b>International comparison if available</b>	Quality Criteria and Quality Indicators in Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
<b>Desired direction:</b>	75%
<b>Notes for all providers</b>	
<b>Data sources and guidance:</b>	ICU clinical charts (review). <ol style="list-style-type: none"> <li>1. Ministry Decree No 550 – 2017, defining criteria for diagnosing death.</li> <li>2. Standardized Critical Care Cases Notification and UAE Organ Brain Death Diagnosis Protocol</li> <li>3. Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>4. Federal law No 4 for Medical Liability.</li> </ol> <a href="https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation">https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation</a>



KPI Description (title):	Identification of Death by Neurological Criteria
Domain	Quality
Sub-Domain	Effectiveness, continuity of care
Definition:	<p>Percentage of deaths of patients with devastating cerebral injury or lesion (DCIL) declared dead by neurological criteria.</p> <p><b>Justification:</b> Not all patients who die after a devastating cerebral injury or lesion (DCIL) do so in death by neurological criteria. Proper treatment of patients with DCL increases their chances of recovery and at the same time increases the chances that if they die, they do so in death by neurological criteria. An index reflecting the % of deaths of patients with devastating cerebral injury lesion declared brain dead will not only reflect the awareness of the healthcare personnel about donation, but also the appropriateness of the treatment. Both aspects refer to the ICU personnel.</p> <p><b>Explanation of terms:</b></p> <ul style="list-style-type: none"> <li>• <b>Devastating cerebral injury or lesion (DCIL):</b> any cerebral lesion potentially causing (or being a co-factor or complication of) death by neurological criteria in the ICU. This is also includes: <ul style="list-style-type: none"> <li>- An acute cerebral lesion that supervenes as a complication such as (Postanoxic, Stroke. Etc.)</li> <li>- Sub-acute Or chronic disorders such as Brain Tumors when spontaneous on postoperative intracranial hypertension, hemorrhagic &amp; cerebral oedema.</li> </ul> </li> </ul> <p><b>ICD 10 codes for acute cerebral lesion are listed in Appendix A.</b></p> <ul style="list-style-type: none"> <li>• <b>Dead by neurological criteria:</b> patient who died after a devastating cerebral injury lesion and who has been declared dead according to neurologic criteria as stipulated by UAE laws and regulation.</li> </ul> <p>For additional guidance regarding confirmation of death by neurological criteria, follow the UAE Protocol For Organ Donation: Standardized Critical Care Cases Notification and Referral of Possible Deceased Organ Donor<sup>2</sup>.</p> <p><b>Potential Deceased Brain Death (DBD) Donor:</b> A person whose clinical condition is suspected to fulfill death by neurological criteria.</p>
Calculation:	$\frac{\text{Number of deaths of patients with DCIL declared dead by neurological criteria}}{\text{Total number of Deaths of patients with DCIL}} \times 100$
Inclusion	All dead by neurological criteria patients with DCIL occurring in the ICU.
Exclusion	Patients not meeting inclusion criteria as specified
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	Quality Criteria and Quality Indicators in Organ Donation Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
Desired direction:	50%
<b>Notes for all providers</b>	
Data sources and guidance:	<p>Medical records review.</p> <ol style="list-style-type: none"> <li>1. Ministry Decree No 550 – 2017, defining criteria for diagnosing death.</li> <li>2. Standardized Critical Care Cases Notification and UAE Organ Brain Death Diagnosis Protocol</li> <li>3. Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>4. Federal law No 4 for Medical Liability.</li> </ol> <p><a href="https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation">https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation</a></p>

KPI Description (title):	Referral of Potential Deceased Brain Death (DBD) Donors
Domain	Quality
Sub-Domain	Effectiveness
Definition:	<p>Percentage of potential Deceased Brain Death (DBD) Donor who are <b>referred</b> to the Abu Dhabi Organ Donation &amp; Transplantation Center (ADODTC).</p> <p><b>Justification:</b> The lack of donor identification by the donation systems is one of the main causes of donor losses. The implementation of an alert system for the referral of all possible donors to the Donation Team will maximize donor identification.</p> <p><b>Explanation of terms:</b> <b>Criteria for referral of Critical Care Cases who are potential DBD donor:</b> GCS &lt; 5 <u>and</u> intubated <u>and</u> devastating cerebral lesion (ICD 10 codes, Appendix A). <b>Potential Deceased Brain Death (DBD) Donor:</b> A person whose clinical condition is suspected to fulfill death by neurological criteria. <b>Donor Referral:</b> Act by which the Organ Donation Champion communicates with the ADODTC regarding the identified patient as a potential donor. The referral could occur through a written document, a phone call or any other message transmission media, and there should be a written record of the referral. <b>Patient referred:</b> Patient with devastating cerebral lesion admitted to the ICU who are reported to the ADODTC as soon as they meet the clinical criteria for referral. Any local trigger or warning system can be used. Referred patients are documented in a registry (in which clinical data and the time of triggering are reported) that is maintained by the Organ Donation Champion.</p>
Calculation:	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: auto;"> <p><b>Number of potential DBD Donors referred to ADODTC</b></p> <p>----- x 100</p> <p><b>Total number of potential DBD Donors meeting the criteria for referral</b></p> </div>
Inclusion	All patient with a devastating brain injury or lesion and apparently medically suitable for organ donation.
Exclusion	Patients not meeting inclusion criteria as specified.
Reporting Frequency:	Quarterly
Unit of Measure:	Percentage
International comparison if available	Quality Criteria and Quality Indicators in Organ Donation Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
Desired direction:	100%
<b>Notes for all providers</b>	
Data sources and guidance:	<p>Medical records, Organ Donation Unit referral registry.</p> <ol style="list-style-type: none"> <li>1. Ministry Decree No 550 – 2017, defining criteria for diagnosing death.</li> <li>2. Standardized Critical Care Cases Notification and UAE Organ Brain Death Diagnosis Protocol</li> <li>3. Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>4. Federal law No 4 for Medical Liability.</li> </ol> <p><a href="https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation">https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation</a></p>

KPI Description (title):	<b>Patient Family Consent</b>
Domain	Quality
Sub-Domain	Effectiveness
<b>Definition:</b>	<p>Percentage of potential donors for whom any family member has been interviewed and they <b>have no</b> opposition after interview.</p> <p><b>Justification:</b> Family opposition to donation is one of the major causes of loss of donors in countries with presumed consent legislation (opt-out). The comparison of the local consent index with the national index may be useful in identifying local problems of personal attention to the patients' relatives and of the coordinators' social skills.</p> <p><b>Explanation of terms:</b></p> <ul style="list-style-type: none"> <li>• <b>Family member:</b> As per the Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>• <b>Number of families interviewed:</b> donor cases in which the relatives are interviewed in order to obtain consent to donation. If several interviews are conducted for the same donor, these are counted as one case.</li> <li>• <b>Number of no oppositions:</b> Number of cases (donors) in which family members do not show oppositions or lack of consent to donation.</li> </ul> <p><b>Breaking Bad News:</b> Breaking bad news is a complex task that causes anxiety and discomfort for the person who is delivering it, and leaves an indelible memory in the mind of the person who receives it. Death by neurological criteria is communicated by the physicians in charge of the Potential Deceased Brain Death (DBD) Donor, followed by the family approach for organ donation conducted by the authorized interviewer.</p> <p><b>Interviewer:</b> physician or healthcare professional who is authorized by Abu Dhabi Organ Donation &amp; Transplantation Center (ADODTC) to conduct family approach for organ donation.</p>
<b>Calculation:</b>	<div style="border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> <math display="block">\frac{\text{Number of no oppositions}}{\text{Number of families interviewed}} \times 100</math> </div>
<b>Inclusion</b>	All potential donors for whom any family member has been interviewed.
<b>Exclusion</b>	Not meeting the inclusion criteria above.
<b>Reporting Frequency:</b>	Quarterly
<b>Unit of Measure:</b>	Percentage
<b>International comparison if available</b>	Quality Criteria and Quality Indicators in Organ Donation Organ Donation European Quality System (ODEQUS). University of Barcelona. Executive Agency for Health and Consumers. <a href="#">Quality Criteria and Quality Indicators in Organ Donation</a>
<b>Desired direction:</b>	Not less than 50%
<b>Notes for all providers</b>	
<b>Data sources and guidance:</b>	<p>Donation Team Records.</p> <ol style="list-style-type: none"> <li>1. Ministry Decree No 550 – 2017, defining criteria for diagnosing death.</li> <li>2. Standardized Critical Care Cases Notification and UAE Organ Brain Death Diagnosis Protocol</li> <li>3. Federal law No 5- 2016 for regulating organ and human tissue transfer and transplant.</li> <li>4. Federal law No 4 for Medical Liability.</li> </ol> <p><a href="https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation">https://www.government.ae/en/information-and-services/health-and-fitness/blood-and-organ-donation</a></p>

**Appendix A-ICD- 10 Codes**  
Deaths with Acute Cerebral lesion

**Appendix A-ICD- 10 - Deaths with Acute Cerebral lesion**

<b>Trauma</b>	S06.1X7A	Traumatic cerebral edema with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.1X8A	Traumatic cerebral edema with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.2X7A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.2X8A	Diffuse traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.307A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.308A	Unspecified focal traumatic brain injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.317A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.318A	Contusion and laceration of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.327A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.328A	Contusion and laceration of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.337A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.338A	Contusion and laceration of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.347A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter

S06.348A	Traumatic hemorrhage of right cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
S06.357A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
S06.358A	Traumatic hemorrhage of left cerebrum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
S06.367A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
S06.368A	Traumatic hemorrhage of cerebrum, unspecified, with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
S06377A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
S06.378A	Contusion, laceration, and hemorrhage of cerebellum with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
S06.387A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
S06.388A	Contusion, laceration, and hemorrhage of brainstem with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
S06.4X7A	Epidural hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
S06.4X8A	Epidural hemorrhage with loss of consciousness of any duration with death due to other causes prior to regaining consciousness, initial encounter
S06.5X7A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to brain injury before regaining consciousness, initial encounter
S06.5X8A	Traumatic subdural hemorrhage with loss of consciousness of any duration with death due to other cause before regaining consciousness, initial encounter
S06.6X7A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter

	S06.6X8A	Traumatic subarachnoid hemorrhage with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.817A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.818A	Injury of right internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.827A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.828A	Injury of left internal carotid artery, intracranial portion, not elsewhere classified with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.897A	Other specified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.898A	Other specified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
	S06.9X7A	Unspecified intracranial injury with loss of consciousness of any duration with death due to brain injury prior to regaining consciousness, initial encounter
	S06.9X8A	Unspecified intracranial injury with loss of consciousness of any duration with death due to other cause prior to regaining consciousness, initial encounter
<b>Cerebrovascular Accidents</b>	I60#	Subarachnoid Hemorrhage
	I61#	Intracranial Hemorrhage
	I62#	Other Non-Traumatic Intracranial Hemorrhage
	I63#	Cerebral Infarction
	I65#	Occlusion And Stenosis Of Precerebral Arteries
	I66#	Occlusion And Stenosis Of Cerebral Arteries
	I67.9	Unspecified Cerebrovascular Accident
<b>Cerebral Damage</b>	G93.1	Anoxic Brain Damage

	G93.5	Compression Of Brain
	G93.6	Cerebral Oedema
<b>Cerebral Neoplasm</b>	C71#	Malignant Neoplasm Of The Brain
	D33#	Benign Neoplasm of the Brain
<b>Infections</b>	G00-G0#	Meningitis
<b>Brain Death</b>	G93.82	Brain Death

Note: # indicates as code series, therefore locate specific code appropriate per actual condition

## Summary of Code Changes to 2018 code sets (Quarter 3 2021)

No changes from update to 2018 code sets

### Summary of Updates in Appendix-A

2015 ICD code	Code Description	Updated to	Remarks
S02	Fracture Of Skull And Facial Bones		Added complete codes with 7 characters
S061	Traumatic Cerebral Oedema		Added complete codes with 7 characters
S062	Diffuse Brain Injury		Added complete codes with 7 characters
S063	Focal Brain Injury		Added complete codes with 7 characters
S064	Extradural Hemorrhage		Added complete codes with 7 characters
S067	Intracranial Hemorrhage With Prolonged Coma		Invalid code - Deleted
S068	Other Intracranial Injuries		Added complete codes with 7 characters
S069	Intracranial Injuries Unspecified		Added complete codes with 7 characters
I64	Stroke Not Specific As Stroke Or Infraction	I67.9	Unspecified Cerebrovascular Accident
		G93.82	Brain Death (Addition)