

Supplementary Digital Content 1  
Survey Questionnaire

Variable / Field Name	Field Type	Field Label	Choices, Calculations, OR Slider Labels	Field Note	Text Validation Type OR Show Slider Number	Text Validation Min	Text Validation Max	Identifier?	Branching Logic (Show field only if...)	Required Field?	Custom Alignment	Question Number (surveys only)	Matrix Group Name	
country_name	dropdown	Please indicate the location of your hospital by country	1, Afghanistan   2, Albania   3, Algeria   4, Andorra   5, Angola   6, Antigua and Barbuda   7, Argentina   8, Armenia   9, Australia   10, Austria   11, Azerbaijan   12, Bahamas   13, Bahrain   14, Bangladesh   15, Barbados   16, Belarus   17, Belgium   18, Belize   19, Benin   20, Bhutan   21, Bolivia   22, Bosnia and Herzegovina   23, Botswana   24, Brazil   25, Brunei   26, Bulgaria   27, Burkina Faso   28, Burundi   29, Cabo Verde   30, Cambodia   31, Cameroon   32, Canada   33, Central African Republic (CAR)   34, Chad   35, Chile   36, China   37, Colombia   38, Comoros   197, Congo   39, Costa Rica   40, Cote d'Ivoire   41, Croatia   42, Cuba   43, Cyprus   44, Czechia   45, Denmark   46, Djibouti   47, Dominica   48, Dominican Republic   49, Ecuador   50, Egypt   51, El Salvador   52, Equatorial Guinea   53, Eritrea   54, Estonia   55, Eswatini (formerly Swaziland)   56, Ethiopia   57, Fiji   58, Finland   59, France   61, Gabon   62, Gambia   63, Georgia   64, Germany   65, Ghana   66, Greece   67, Grenada   68, Guatemala   69, Guinea   70, Guinea-Bissau   71, Guyana   72, Haiti   73, Honduras   74, Hungary   75, Iceland   76, India   77, Indonesia   78, Iran   79, Iraq   80, Ireland   81, Israel   82, Italy   83, Jamaica   84, Japan   85, Jordan   86, Kazakhstan   87, Kenya   88, Kiribati   89, Kosovo   90, Kuwait   91, Kyrgyzstan   92, Laos   93, Latvia   94, Lebanon   95, Lesotho   96, Liberia   97, Libya   98, Liechtenstein   99, Lithuania   100, Luxembourg   101, Madagascar   102, Malawi   103, Malaysia   104, Maldives   105, Mali   106, Malta   107, Marshall Islands   108, Mauritania   109, Mauritius   110, Mexico   111, Micronesia   112, Moldova   113, Monaco   114, Mongolia   115, Montenegro   116, Morocco   117, Mozambique   118, Myanmar (formerly Burma)   119, Namibia   120, Nauru   121, Nepal   122, Netherlands   123, New Zealand   124, Nicaragua   125, Niger   126, Nigeria   127, North Korea   128, North Macedonia (formerly Macedonia)   129, Norway   130, Oman   131, Pakistan   132, Palau   133, Palestine   134, Panama   135, Papua New Guinea   136, Paraguay   137, Peru   138,							y				

			Philippines   139, Poland   140, Portugal   141, Qatar   142, Romania   143, Russia   144, Rwanda   145, Saint Kitts and Nevis   146, Saint Lucia   147, Saint Vincent and the Grenadines   148, Samoa   149, San Marino   150, Sao Tome and Principe   151, Saudi Arabia   152, Senegal   153, Serbia   154, Seychelles   155, Sierra Leone   156, Singapore   157, Slovakia   158, Slovenia   159, Solomon Islands   160, Somalia   161, South Africa   162, South Korea   163, South Sudan   164, Spain   165, Sri Lanka   166, Sudan   167, Suriname   168, Sweden   169, Switzerland   170, Syria   171, Taiwan   172, Tajikistan   173, Tanzania   174, Thailand   175, Timor-Leste   176, Togo   177, Tonga   178, Trinidad and Tobago   179, Tunisia   180, Turkey   181, Turkmenistan   182, Tuvalu   183, Uganda   184, Ukraine   185, United Arab Emirates (UAE)   186, United Kingdom (UK)   187, United States of America (USA)   188, Uruguay   189, Uzbekistan   190, Vanuatu   191, Vatican City (Holy See)   192, Venezuela   193, Vietnam   194, Yemen   195, Zambia   196, Zimbabwe							
please_provide_the_zip_cod	text	Please provide the zip code (postal code) for your hospital. (Please note that the zip code/postal code will not be used to identify your hospital. Instead, it will be used to cluster responses to a geographical location, by the number of patients with COVID-19 disease based on data from the John Hopkins COVID reporting center)						y		
us_state	dropdown	Please indicate the location of your hospital in the U.S. (Please note that this information will not be used to identify your hospital. Instead, it will be used to	1, Alabama   2, Alaska   3, Arizona   4, Arkansas   5, California   6, Colorado   7, Connecticut   8, Delaware   9, Florida   10, Georgia   11, Hawaii   12, Idaho   13, Illinois   14, Indiana   15, Iowa   16, Kansas   17, Kentucky   18, Louisiana   19, Maine   20, Maryland   21, Massachusetts   22, Michigan   23, Minnesota   24, Mississippi   25, Missouri   26, Montana   27, Nebraska   28, Nevada   29, New Hampshire   30, New Jersey   31, New Mexico   32, New York   33, North Carolina   34, North Dakota   35, Ohio   36, Oklahoma   37, Oregon   38, Pennsylvania   39, Rhode Island   40, South Carolina   41, South Dakota   42, Tennessee   43, Texas   44, Utah   45, Vermont	[country_name] = '187'	y					

		cluster responses by geographical location)	46, Virginia   47, Washington   48, West Virginia   49, Wisconsin   50, Wyoming										
please_provide_the_bed_cap	radio	Please provide the total number of licensed beds in your hospital.	1, 1-200   2, 201-400   3, 401-600   4, >600							y			
please_provide_the_total_n	radio	Please provide the total number of licensed intensive care unit beds at your hospital	1, 1-50   2, 51-100   3, 101-150   4, >150							y			
institution_type	checkbox	Please choose from the following options what best describes your institution	1, Academic   2, Private non-academic   3, Public non-academic   4, Other							y			
you_selected_the_other_option	text	You selected the "other" option. Please elaborate.							[institution_type(4)] = '1'	y			
please_describe_the_charac	checkbox	Please describe the characteristics of your institution as it pertained to caring for the neurologically ill patients prior to the COVID-19	1, Level I NCCU (advanced monitoring, surgical and medical treatments, the capability to provide physician fellowship and advanced practice professional training)   2, Level II NCCU (stabilize acutely ill patients and safely manage stable neurocritical disease processes, while having established relationships with Level I NCCUs)   3, Level III NCCU (emergent evaluation and stabilization of patients presenting with neurological emergencies and facilitate the transfer of these patients to Level I and Level II NCCUs)   4, Comprehensive stroke center   5, Primary stroke center   6, Thrombectomy capable stroke center   7, Non-stroke center   8, Level I trauma center   9, Level II trauma center   10, Level III trauma center   11, Level IV trauma center   12, Non-trauma center							y			

		pandemic (check all that may apply)											
nccu_organization	check box	Please describe the organizational structure of your neurocritical care unit (NCCU) prior to the COVID- 19 pandemic (check all that may apply)	1, Geograph ically dedicated NCCU   2, Non- geographi cally dedicated /mixed medical/s urgical intensive care unit							y			
what_is_the_bed_ capacity_o	radio	What is the licensed bed capacity of your NCCU?	1, 1-10 beds   2, 11-20 beds   3, 21-30 beds   4, 31 or more beds						[nccu_organization( 1)] = '1'	y			
mixed_icu_beds	radio	What is the licensed bed capacity of your mixed intensive care unit?	1, 1-10 beds   2, 11-20 beds   3, 21-30 beds   4, 31 or more beds						[nccu_organization( 2)] = '1'	y			
co_management_ model	check box	Co- management model	1, Closed NCCU   2, Semi- open/Se mi-closed NCCU   3,						[nccu_organization( 1)] = '1'				

			Open NCCU										
co_mgt_model	radio	Co-management model	1, Open intensive care unit   2, Semi-open/se mi-closed intensive care unit   3, Closed intensive care unit						[nccu_organization(2)] = '1'	y			
please_describe_informatio	checkbox	Please describe the type of intensivists that attend to the neurocritically ill patients (check all that may apply)	1, Neurointensivists with neurology training   2, Neurointensivists with pulmonary critical care /medicine critical care training   3, Neurointensivists with anesthesia critical care training   4, Neurointensivists with an emergency medicine training   5, Neurointensivists with a pediatric critical care training   9, Neurointensivists with a general surgery/neurosurgery training   6, General intensivists with pulmonary critical care /medicine critical care training   7, General intensivists with anesthesia critical care training   8, General intensivists with emergency medicine training   10, General intensivists with surgical critical care training							y			
advanced_practice_provider	yesno	Are advanced practice providers/physician assistants members of your neurocritical care team?								y			
do_you_currently_have_a_de	yesno	Do you currently have a dedicated neurocritical care/general critical care pharmacist?								y			
do_you_have_a_neurocritica	checkbox	Please choose from the	1, Neurocriti							y			

		following options the type of critical care or neurocritical care fellowships offered at your institution (Check all that may apply)	cal care fellowship   2, Non-neurocritical care fellowships   3, None										
please_describe_resident_t	checkbox	Please describe resident trainees that rotate in your NCCU (check all that may apply)	1, Anesthesia   2, Neurology   3, Neurosurgery   4, Internal medicine   5, Emergency medicine   6, Pediatrics   8, Surgery   9, None   10, Other							y			
you_checked_the_other_opti	text	You checked the other option. Please elaborate.							[please_describe_resident_t(10)] = '1'	y			
please_describe_fellow_lev	checkbox	Please describe fellow-level trainees that rotate in your NCCU (check	1, Anesthesia   2, Neurology   3, Neurosurgery   4,							y			

		all that may apply)	Pulmonary critical care   5, Anesthesia critical care   6, Pediatric critical care   7, Surgical critical care   8, Emergency medicine critical care   9, None   10, Other										
you_checked_the_other_opti	text	You checked the other option. Please elaborate							[please_describe_following_low_level(10)] = '1'	y			
describe_the_time_period_a	checkbox	From the following options, please chose the time period when your hospital experienced a surge in the COVID-19 cases (check all that may apply)	14, End of December to Mid January   15, Mid-January to end of January   16, End of January to mid-February   17, Mid to end of February   2, End of February to Mid March   3, Mid to the end of March   4, End of March to mid-April   5, Mid to the end of April   6, End April to Mid May   7, Mid to the end of May   8, End of May to Mid June   9, Mid to end of June   10, End of June to Mid July   18, Mid to end of July   19, End July to Mid August   12, Did not experience a surge yet   13, Surge is ongoing							y			
ncc_attending_physicians	yesno	Were any members of your critical care team unavailable as they were								y			

		tested due to COVID or COVID-like symptoms or were quarantined?											
how_many_neuro_critical_car	radio	Please provide an estimate of the proportion of your critical care team workforce that were affected	6, 1-5%   7, 6-10%   8, 11-20%   9, >20%   10, I don't know the exact number, but aware that some proportion was affected   11, Not applicable										
unit_structure	radio	NCCU /CCU location (Contingency plans for surge capacity)	1, Adequate time available to plan ahead   2, Some time (though inadequate) to plan ahead   3, Surge hit us before any planning could be						y				surge_planning



			thought of										
nccu_staffing_contingency	radio	NCCU /CCU staffing (Contingency plans for surge capacity)	1, Adequate time available to plan ahead   2, Some time (though Inadequate) to plan ahead   3, Surge hit us before any planning could be thought of							y			surge_planning
nccu_workflow_contingency	radio	NCCU /CCU workflow (Contingency plans for surge capacity)	1, Adequate time available to plan ahead   2, Some time (though Inadequate) to plan ahead   3, Surge hit us before any planning could be							y			surge_planning

			thought of									
physicians	radio	The total number of NCC/CC physicians available to staff your neurocritical care service	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up							y		ncc_staffing
app_pa	radio	The total number of NCC/CC advanced practice providers/physician assistants available to staff your neurocritical care service	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up							y		ncc_staffing
resident	radio	The total number of resident trainees rotating on your neurocritical care service	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up							y		ncc_staffing
ncc_fellow	radio	The total number of NCC/CC fellows available	1, No change   2, Reduced   3, Increased							y		ncc_staffing

			4, Does not apply to my hospital set up									
non_ncc_fellow	radio	The total number of rotating CC fellows from non-neurocritical care fellowship programs	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up						y			ncc_staffing
nurses	radio	The total number of NCC/CC care nurses available to attend to the neurocritically ill patients	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up						y			ncc_staffing
the_total_number_of_ncc_cc	radio	The total number of NCC/CC pharmacist(s)	1, No change   2, Reduced   3, Increased   4, Does not apply to my hospital set up						y			ncc_staffing
staffing	radio	NCCU/CCU remained in its usual location with	1, Yes   2, No						y			nccu_structure

		standard staffing											
covid_cohort	radio	NCCU /CCU was partly or completely converted to a COVID-cohorting unit	1, Yes   2, No							y			nccu_structure
nonnccu_nccu	radio	All neurocritical care patients were admitted to a non-neurocritical care unit and managed by neurocritical care clinicians	1, Yes   2, No							y			nccu_structure
non_nccu_non_nccu	radio	All neurocritical care patients were admitted to a non-neurocritical care service and managed by non-neurocritical care clinicians	1, Yes   2, No							y			nccu_structure
some_nccu	radio	Some patients were admitted to a non-neurocritical care unit but were still managed by neurocritical care clinicians	1, Yes   2, No							y			nccu_structure
some_nonnccu	radio	Some patients were admitted to a non-neurocritical	1, Yes   2, No							y			nccu_structure

		care unit and managed by non-neurocritical care clinicians											
regular_floor_beds_were_co	radio	Regular floor beds were converted into ICU beds	1, Yes   2, No							y			nccu_structure
emergency_room_beds_were_c	radio	Emergency room beds were converted into ICU beds	1, Yes   2, No							y			nccu_structure
operating_rooms_were_conve	radio	Operating rooms were converted into ICU beds	1, Yes   2, No							y			nccu_structure
post_anesthesia_care_unit	radio	Post-anesthesia care unit (PACU) beds were converted into ICU beds	1, Yes   2, No							y			nccu_structure
overall_admission_to_neuro	radio	Number of admissions to neurocritical unit / general critical care unit	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
patients_with_acute_ischem	radio	Patients with acute ischemic stroke	1, No change in the number   2, Reduced number							y			admissions

			3, Increased number									
patients_with_non _traumati	radio	Patients with non-traumatic intraparenchy mal hemorrhage	1, No change in the number   2, Reduced number   3, Increased number						y			admissions
patients_with_ane urysmal_s	radio	Patients with aneurysmal subarachnoid hemorrhage	1, No change in the number   2, Reduced number   3, Increased number						y			admissions
patients_with_trau matic_br	radio	Patients with traumatic brain injury	1, No change in the number   2, Reduced number   3, Increased number						y			admissions
patients_with_trau matic_sp	radio	Patients with traumatic spinal cord injury	1, No change in the number   2, Reduced number   3,						y			admissions

			Increased number										
central_nervous_system_inf	radio	Central nervous system infections	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
status_epilepticus	radio	Status epilepticus	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
neuromuscular_weakness_gbs	radio	Neuromuscular weakness (GBS, Myasthenia, and others)	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
post_cardiac_arrest_hypoxia	radio	Post-cardiac arrest (hypoxic-ischemic encephalopathy)	1, No change in the number   2, Reduced number   3, Increased number							y			admissions

acute_symptomatic_hydrocephalus	radio	Acute symptomatic hydrocephalus from CSF shunt malfunction/infections	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
patients_s_p_surgery_for_intracranial_tumor	radio	Elective surgery for intracranial tumor	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
patients_s_p_surgery_for_unruptured_intracerebral_aneurysm	radio	Elective surgery for repair of unruptured intracerebral aneurysm	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
patients_s_p_endovascular_repair_of_unruptured_arteriovenous_malformations	radio	Elective endovascular repair of unruptured arteriovenous malformations	1, No change in the number   2, Reduced number   3, Increased number							y			admissions



other_neurourgical_and_non	radio	Other elective neurosurgical cases	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
other_elective_non_neurosu	radio	Other elective non-neurosurgical cases	1, No change in the number   2, Reduced number   3, Increased number							y			admissions
was_any_virtual_neurocriti	yesno	Was any telemedicine service provided to neurocritically ill patients during the pandemic?								y			
the_telemedicine_provided	checkbox	This telemedicine service was provided. (check all that may apply)	1, Remotely   2, Locally   3, Both						[was_any_virtual_neurocriti] = '1'	y			
daily_lectures	radio	Daily lectures	1, In-person meeting only   2, Activity was canceled   3,							y			academic_administrative_mission

			Virtual medium only   4, In-person meeting plus option to attend in a virtual medium									
journal_club	radio	Journal Club	1, In-person meeting only   2, Activity was canceled   3, Virtual medium only   4, In-person meeting plus option to attend in a virtual medium						y			academic_administrative_mission
gc	radio	Grand rounds	1, In-person meeting only   2, Activity was canceled   3, Virtual medium only   4, In-person meeting plus						y			academic_administrative_mission



			<p>compared to pre-pandemic numbrs   2, Increased participat ion   3, Reduced participat ion   4, Meetings were canceled, thus does not apply</p>									
faculty_and_staff_meetings	radio	Faculty and staff meetings	<p>1, No change compared to pre-pandemic numbrs   2, Increased participat ion   3, Reduced participat ion   4, Meetings were canceled, thus does not apply</p>						y			attendance_virtual
qi	radio	Quality improvement or mortality and morbidity meetings	<p>1, No change compared to pre-pandemic numbrs   2, Increased</p>						y			attendance_virtual

			participation   3, Reduced participation   4, Meetings were canceled, thus does not apply									
jc	radio	Journal club	1, No change compared to pre-pandemic numbrs   2, Increased participation   3, Reduced participation   4, Meetings were canceled, thus does not apply						y			attendance_virtual
grand_rounds	radio	Grand rounds	1, No change compared to pre-pandemic numbrs   2, Increased participation   3, Reduced participation   4, Meetings						y			attendance_virtual

			were canceled, thus does not apply									
neurology_neurointensivist	radio	Neurology neurointensivists deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital						y			deployment
pulmonary_critical_care_de	radio	Pulmonary critical care neurointensivists deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital						y			deployment
anesthesia_critical_care_d	radio	Anesthesia critical care neurointensivists deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital						y			deployment
all_neurointensivists_were	radio	Emergency medicine neurointensivists were deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable						y			deployment

			e to our hospital										
all_neurocritical_care_adv	radio	Neurocritical care advanced practice providers were deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
all_neurocritical_care_fel	radio	Neurocritical care fellows were deployed in a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
all_neurocritical_care_nur	radio	Neurocritical care nurses were deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
clinical_pharmacists	radio	Clinical pharmacists were deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment

ret_phy_covid	radio	Retired physicians were reactivated and integrated in the COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
retired_nurses	radio	Retired nurses were deployed to a COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
retired_physicians_were_re	radio	Retired physicians were reactivated and integrated into a neurocritical care unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
retired_nurses_were_deploy	radio	Retired nurses were deployed to a neurocritical care unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
nonnccsp	radio	Non-neurocritical	1, All providers							y			deployment



		care based physicians were deployed to the neurocritical care unit	2, Some providers   3, No providers   4, Not applicable to our hospital									
nonccsnurs	radio	Non-Neurocritical care based nurses were deployed to the neurocritical care unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y		deployment
nonccsapp	radio	Non-Neurocritical care based advanced practice providers were deployed to the neurocritical care unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y		deployment
neurointensivists_deployed	radio	Neurointensivists were deployed to other areas of the hospital such as wards/floor	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y		deployment
neurocritical_care_pharmac	radio	Neurocritical care pharmacists	1, All providers   2, Some							y		deployment

		were deployed in a COVID unit	providers   3, No providers   4, Not applicable to our hospital										
nonnccvovid	radio	Non Neurocritical Care pharmacists were deployed in the NCCU	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
non_intensive_care_pharmac	radio	Non intensive care pharmacists were deployed in the COVID unit	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
non_inten_nccu	radio	Non intensive care pharmacists were deployed in the NCCU	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
non_critical_care_allied_n	radio	Non critical care allied nursing providers (such as	1, All providers   2, Some providers   3, No							y			deployment

		CRNAs) were deployed in the COVID unit	providers   4, Not applicable to our hospital										
crnas_in_nccu	radio	Non critical care allied nursing providers (such as CRNAs) were deployed in NCCU	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
critical_care_fellow_train	radio	Critical care fellow trainees functioned at the level of a critical care attending	1, All providers   2, Some providers   3, No providers   4, Not applicable to our hospital							y			deployment
what_measures_were_put_in	checkbox	What measures were put in place to educate critical care physicians, nurses, advanced practice providers, and pharmacists for management of COVID-19 and for non-neurocritical	1, Learning how to prone patients   2, Lecture on COVID-19 disease   3, Lecture on the management of adult respiratory distress syndrome							y			

		care physicians and nurses to manage the neurocritical ill patients? (Check all that may apply)	in patients with COVID-19 disease   4, Other										
you_checked_other_option_f	text	You checked "other" option for the previous question. Please clarify							[what_measures_were_put_in(4)] = '1'	y	RH		
pt	radio	Availability of a dedicated physical therapist	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
ot	radio	Availability of a dedicated occupational therapist	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist

chaplain	radio	Availability of a healthcare chaplain	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
slp	radio	Availability of speech and language pathologist	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
social_worker	radio	Availability of a social worker	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist

cultural_mediator_interpre	radio	Availability of a cultural mediator/interpreter	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
availability_of_a_dietician	radio	Availability of a dietician	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
availability_of_a_nursing	radio	Availability of a certified nursing assistant	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist

availability_of_a_housekeeper	radio	Availability of a housekeeper	1, No change   2, Reduced availability   3, Not available at our hospital   4, Available only in a virtual medium							y			dedicated_pharmacist
hypertonic_saline_2_3_23_4	radio	Hypertonic saline (3%, 5% 23.4% saline or any compounded preparation i.e 2%)	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know							y			pharmaceuticals
sodium_acetate_used_to_make	radio	Sodium acetate used to make hypertonic solutions such and 2% or 3% saline	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary							y			pharmaceuticals

			/not available in my country   5, I do not know									
fludocortisone	radio	Fludocortisone	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
slat_tabs	radio	Salt tabs	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals



mannitol	radio	Mannitol (20 or 25% solutions)	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know							y			pharmaceuticals
propofol	radio	Propofol	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know							y			pharmaceuticals
dexmedetomidine	radio	Dexmedetomidine (vials or pre-mixed bags)	1, No change in availability   2, Reduced availability   3, Unable to							y			pharmaceuticals

			obtain   4, Non- formulary /not available in my country   5, I do not know									
ketamine	radio	Ketamine	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know						y			pharmaceuticals
acetaminophen_in travenous	radio	Midazolam	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country						y			pharmaceuticals

			5, I do not know									
lorazepam	radio	Lorazepam	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
diazepam	radio	Diazepam	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
benzodiazepines	radio	Rocuronium	1, No change in availability   2, Reduced availability						y			pharmaceuticals

			y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know									
neuromuscular_blockade	radio	Vecuronium	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know						y			pharmaceuticals
cisatracurium	radio	Cisatracurium	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non- formulary /not available in my						y			pharmaceuticals

			country   5, I do not know									
atracurium	radio	Atracurium	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know						y			pharmaceuticals
phenobarbital	radio	Phenobarbital	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know						y			pharmaceuticals
pentobarbital	radio	Pentobarbital	1, No change in availabilit y   2, Reduced						y			pharmaceuticals

			<p>availability   3,          Unable to obtain            4, Non-formulary /not available in my country            5, I do not know</p>									
thiopental	radio	Thiopental	<p>1, No change in availability   2,          Reduced availability   3,          Unable to obtain            4, Non-formulary /not available in my country            5, I do not know</p>						y			pharmaceuticals
phenytoin	radio	Phenytoin	<p>1, No change in availability   2,          Reduced availability   3,          Unable to obtain            4, Non-formulary /not available</p>						y			pharmaceuticals

			in my country   5, I do not know									
fosphenytoin	radio	Fosphenytoin	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
levetiracetam	radio	Levetiracetam	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
valproic_acid	radio	Valproic acid/valproate	1, No change in availability   2,						y			pharmaceuticals

			Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know									
lacosamide	radio	Lacosamide	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
bronchodilators_mdi	radio	Bronchodilators MDI/nebulizers/other formulations	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not						y			pharmaceuticals



			available in my country   5, I do not know									
acetaminophen_ental_form	radio	Acetaminophen (enteral formulation/intravenous formulation) or paracetamol	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
nicardipine	radio	Nicardipine	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
clevipine	radio	Clevipine	1, No change in availability						y			pharmaceuticals

			y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know									
nimodipine	radio	Nimodipine	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary /not available in my country   5, I do not know						y			pharmaceuticals
nefopam	radio	Nefopam	1, No change in availabilit y   2, Reduced availabilit y   3, Unable to obtain   4, Non- formulary						y			pharmaceuticals

			/not available in my country   5, I do not know									
fentanyl	radio	Fentanyl	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
morphine	radio	Morphine	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
hydromorphone	radio	Hydromorphone	1, No change in						y			pharmaceuticals

			availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know									
alfentanil	radio	Alfentanil	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
sufentanil	radio	Sufentanil	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-						y			pharmaceuticals

			formulary /not available in my country   5, I do not know									
remifentanil	radio	Remifentanil	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals
antimicrobials_antibiotics	radio	Antimicrobials (antibiotics/antivirals)	1, No change in availability   2, Reduced availability   3, Unable to obtain   4, Non-formulary /not available in my country   5, I do not know						y			pharmaceuticals

indicate_if_any_other_medi	text	Indicate if any other mediations were in short supply during the pandemic											
how_was_the_drug_shortage	checkbox	How was the drug shortage mitigated during the pandemic? (Check all that may apply)	1, Using benzodiazepines bolus or infusion for sedation   2, Using oral opioids for sedation   3, Use of ketamine for sedation   4, Use of fentanyl infusion for sedation   5, Use of remifentanil infusion for sedation   6, Use of inhalational anesthetics for sedation   7, Switching propofol based sedation to dexmedetomidine-based sedation   8, Switching dexmedetomidine based-sedation to propofol-based sedation   11, We obtained non-formulary medications   12, We received medications from non-preferred manufacturers   9, Other   10, We did not experience any critical care drug shortages						y				
you_checked_other_response	text	You checked the "other" response to the previous question. Please elaborate						[how_was_the_drug_shortage(9)] = '1'	y				
lab_draws_and_processing	radio	Lab draws and processing	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_oth	
ct_scans	radio	CT scans (regular or routine, requiring intrahospital transport)	1, No change in availability   2, Reduced availability   3,						y			lab_imaging_and_oth	

			Increased availability   4, Does not apply to my set up									
portable_ct_scan	radio	Portable CT scan	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_oth
mrisc	radio	MRI	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_oth
transcranial_doppler	radio	Transcranial Doppler	1, No change in availability   2, Reduced availability   3, Increased availability   4,						y			lab_imaging_and_oth

			Does not apply to my set up									
duplex_scans	radio	Ultrasound	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_o ther
echocardiograms	radio	Echocardiogram	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_o ther
peripherally_placed_centra	radio	Peripherally placed central line placement team	1, No change in availability   2, Reduced availability   3, Increased availability   4, Does not apply to my set up						y			lab_imaging_and_o ther



please_indicate_if_you_obs	text	Please indicate if you observed changes in any other areas not specified above											
at_the_time_of_this_survey	radio	At the time of this survey, it has been _ weeks since the surge. Fill in the blanks with the most appropriate response	1, less than 2 weeks   2, 2-4 weeks   3, greater than 4 weeks   4, My institution did not experience any surge in patients   5, We are still in the midst of the surge						y				
location	radio	NCCU/CCU location	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards						y				post_surge_follow_up
nccu_physician_staffing	radio	NCCU/CCU physician staffing	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at						y				post_surge_follow_up

			surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards							
nccu_nursing_staffing	radio	NCCU/CCU nursing staffing	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y			post_surge_follow_up
nccu_advanced_practice_pro	radio	NCCU/CCU advanced practice provider staffing	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y			post_surge_follow_up
nccu_resident_trainee_avai	radio	NCCU/CCU resident trainee availability	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst				y			post_surge_follow_up

			of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards							
nccu_fellow_availability	radio	NCCU/CCU fellow availability	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y			post_surge_follow_up
nccu_admissions	radio	NCCU/CCU admissions	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y			post_surge_follow_up
faculty_meetings	radio	Faculty meetings	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and				y			post_surge_follow_up

			functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards						
post_surge_journal_club	radio	Journal club	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y		post_surge_follow_up
post_surge_grand_rounds	radio	Grand rounds	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience a surge but functioning at surge standards				y		post_surge_follow_up
mortality_morbidity_quality	radio	Mortality & Morbidity / Quality improvement meetings	1, Had a surge and completely back to pre-surge standards   2, Had a surge, but functioning at surge standards   3, In the midst of the surge and functioning at surge standards   4, In the midst of the surge, but functioning at pre-surge standards   5, Did not experience a surge and functioning at pre-surge standards   6, Did not experience				y		post_surge_follow_up

			a surge but functioning at surge standards									
please_choose_from_the_fol	checkbox	Please choose from the following options areas in which you are currently struggling with in delivering care to the neurocritically ill. NCCU = dedicated neurocritical care unit CCU = general/mixed medical-surgical critical care unit	1, NCCU/CCU location of the ICU (displaced partially or completely from its original location since the pandemic to cohort COVID patients)   2, NCCU/CCU staffing (physician/nursing/APP)   3, NCCU/CCU staffing (trainees)   4, NCCU/CCU workflow (rounding/communication)   5, NCCU/CCU supply (equipment/drugs)   6, Other areas, please specify						y			
you_chose_other_option_pel	notes	You chose other option, please elaborate							[please_choose_from_the_fol(6)] = '1'	y		
please_provide_details_on	checkbox	Please provide a list of any quality concerns you experienced while delivering care to the neurocritically ill patients during this pandemic (Check all that may apply)	5, Concern for health-care provider safety   6, Concern for patient safety   7, Concern for the physician to patient ratio   8, Concern for the nurse to patient ratio   9, Concern for the pharmacist to patient ratio   10, Concern for neurocritically ill patients cared for by non-neurocritically trained care nurses   11, Other   12, We did not experience any quality concerns						y			

you_checked_othe r_option_i	text	You checked other option in the previous question . Please elaborate							[please_provide_de tails_on(11)] = '1'	y			
indicate_your_inte rest_in	yesno	Can we contact you for a 15-minute semi-structured interview?								y	RH		
thank_you_for_yo ur_interes	text	Thank you for your interest in a semi-structured interview. In order to facilitate the interview process, please provide your e-mail address. (This will be a more discussion-based interview using open-ended questions pertaining to areas that we were unable to cover in the survey or questions for whom answer choices were not provided			email				[indicate_your_inte rest_in] = '1'	y	RH		

		or other areas you wish to report)											
phone_number	text	Thank you for your interest in a semi-structured interview. In order to facilitate the interview process, please provide a phone number where we can reach you.							[indicate_your_interest_in] = '1'		RH		
we_would_like_to_include_y	text	For your participation in this study, we would like to include you as a co-author in peer-reviewed publications related to this study. Please provide us with your full name, including middle initial, your title, affiliations, name of your hospital, and a contact e-mail address.								y			