BMT #0301 Data Submission - Documentation for Outcomes Dataset

Outcomes dataset has 84 variables for 96 participants on BMT protocol #0301 and each patient has one record. This is the most important dataset in this data submission.

Notes in the last column of below table are provided by BMT CTN DCC to facilitate better understanding of the submitted datasets:

- **CRF** indicates this variable is from EMMES Case Report Form, as reported by the transplant center. The name of the CRF is shown in the column for easy reference.
- **EMMES** indicates this variable is from EMMES Enrollment System, as study implemented per protocol.
- **RECODE** indicates this variable is from computation for analysis purpose based on other data source. Algorithm and computation method are provided for reference.
- **ERC** indicates this variable is from the BMT #0301 Endpoint Review Committee adjudication. ERC adjudicated the data in a blinded manner based on the site-reported data in CRFs as well as some clinical notes from the sites. ERC –adjudicated outcomes should supersede the site-reported data if there would be any discrepancy.
- **CIBMTR** indicates this variable is data retrieval from the CIBTMR data system. CIBMTR data were reviewed by the CIBMTR physicians prior to the data transfer to Emmes DCC.

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
1	PROT	Char	5	5.	5.	Protocol	EMMES - this is the protocol identifier for BMT CTN studies
2	SITE	Char	5	5.	5.	Site Code	EMMES- this is the identifier of site where the patient was enrolled from.
3	PROJID	Char	5	$5.	$5.	Project ID	EMMES - this is the blinded identifier that should be used for any data merge between this dataset and other datasets. This is unique for each patient in BMT CTN.
4	PATID	Char	15	$15.	$18.	Patient ID	EMMES - this is patient identifier that can be used for any data merge between this dataset and other datasets. This is unique for each patient in BMT CTN.
5	ENRLDATE	Num	8	MMDDYY8.	8.	Date of Randomization	EMMES - this is the start date of the patient on this study
6	TRTTRUE	Char	30	30.	30.	Treatment Assignment	EMMES - this is based on randomization and indicates the assignment upon enrollment.
7	TXDTTXP	Num	8	MMDDYY8.	8.	Date of Transplant	CRF – TXP
8	DTHDT	Num	8	MMDDYY8.	8.	Date of Death	CRF – DTH
9	dob	Num	8	MMDDYY8.	DATETIME22.3	Date of Birth	CRF – DEM
10	age	Num	8	8.2		Age at Baseline (years)	RECODE - this is the computed age of years at enrollment based on *DOB* on CRF-DEM form

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
11	ageg	Char	5	$AGEGRP.		Age Group	RECODE - this is the computed age of years at enrollment categorized into three groups
12	ethnic	Char	3	$ETHNICF.	$3.	Ethnicity	CRF – DEM
13	gender	Char	1	$GENDERF.	$1.	Gender	CRF – DEM
14	psaa	Char	2	$X6939X.	$2.	Karnofsky Performance Status	CRF – ENR
15	raceA	Char	1	$RACEF.		Patient's Race	RECODE – this is based on race and secondary race reported on CRF – DEM form and combine into several big race categories.
16	Day100outcome	Char	60			Day 100 Outcome	ERC – this is adjudicated by ERC based on patient's events including death, primary and secondary graft failure, and toxicity data
17	CMVSTAT	Char	1	$X14124X.	$1.	Patient's Pre-Transplant CMV Status	CRF – TXP
18	HLASCORE	Char	3	$3.	$3.	HLA Score	CRF – ENR
19	ANC1DT	Num	8	MMDDYY8.	DATETIME22.3	Neutrophil Count and Specimen Collection Date	CRF – HEM
20	DATRANSP	Num	8	MMDDYY8.	DATETIME22.3	Date of Non-Protocol Specified Transplant	CRF – FUS
21	Day_100_Early_Death	Char	3	$3.	$3.	Day 100 Early Death	ERC – this is adjudicated by ERC on patient's death by Day 100

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
22	Day_100_Engraftment	Char	23	$23.	$23.	Day 100 Engraftment	ERC – this is adjudicated by ERC on patient's engraftment by Day 100
23	Day_100_RRT	Char	22	$22.	$22.	Day 100 Regimen-related Toxicity	ERC – this is adjudicated by ERC based on patient's toxicity data from CRF – T10
24	Primary_Cause_of_Death	Char	23	$23.	$23.	Primary Cause of Death by ERC	ERC – this is adjudicated by ERC on patient's primary cause of death
25	SecondaryGraftFailure	Char	13	$13.	$13.	Secondary Graft Failure by ERC	ERC – this is adjudicated by ERC if patient had secondary graft failure
26	Max__Grade_of_Chronic_GVHD	Char	13	$13.	$13.	Maximum Overall Grade of cGVHD by ERC	ERC – this is adjudicated by ERC on the chronic GVHD data from CRF – CGV
27	date_sgf	Num	8	MMDDYY8.		Date of Secondary Graft Failure	ERC – this is adjudicated by ERC on the date of secondary graft failure
28	date_234aGVHD	Num	8	MMDDYY8.		Date of Grade 2-4 Acute GVHD	ERC – this is the ERC adjudicated onset date of grades 2-4 acute GVHD. If no acute GVHD or maximum acute GVHD grade was less than 2, this is blank.
29	date_34aGVHD	Num	8	MMDDYY8.		Date of Grade 3-4 Acute GVHD	ERC - this is the ERC adjudicated onset date of grades 3-4 acute GVHD. If no acute GVHD or maximum acute GVHD grade was less than 3, this is blank.
30	date_cGVHD	Num	8	MMDDYY8.		Date of Chronic GVHD Onset	ERC – this is the ERC adjudicated onset date of chronic GVHD

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
31	date_cGVHDmax	Num	8	MMDDYY8.		Date of Maximum Chronic GVHD	ERC - this is the ERC adjudicated date of maximum chronic GVHD. If the maximum grade is limited, it is the date to limited chronic GVHD. If the maximum grade is extensive, it is the date to extensive chronic GVHD.
32	aGVHDgrade	Num	8			Maximum Acute GVHD Grade by Day 100	ERC – this is the ERC adjudicated maximum overall grade of acute GVHD by Day 100. ERC adjudicated the maximum grade based on the weekly acute GVHD assessment and some clinical notes as needed.
33	gfdt	Num	8	MMDDYY8.		Date of Graft Failure	ERC – this is adjudicated by ERC on the date of graft failure if patient had primary or secondary graft failure
34	ISTpriortoHCT	Char	1	$YESNO.	$1.	Immunosuppressive Therapy Before Transplant	CIBMTR – this is collected through CIBMTR if patient had immunosuppressive therapy before transplant
35	diagdt	Num	8	MMDDYY8.		Date of SAA Diagnosis	CIBMTR
36	ATGTYPE	Char	1	$ATGTYPE.	$1.	Type of Anti-Thymocyte Globulin Administered	CRF – STA
37	TNCPERWT	Num	8	8.2		Total Nucleated Cell Dose x 10^8/kg	CIBMTR
38	SEVCGVHD	Char	1	$X6883X.	1.	Maximum Overall Severity of cGVHD	CRF – CGV

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
39	t10dic	Char	1			Thrombotic Microangiopathy Toxicity Grade	CRF – T10
40	diagmonth	Num	8	8.2		Months from Diagnosis to Transplant	RECODE – this is computed based on *diagdt* collected from CIBMTR
41	sgfmon	Num	8			Time to Secondary Graft Failure (in Months)	RECODE – this is computed based on *date_sgf*
42	ebv	Char	1	$YESNO.		Had EBV Viraemia	RECODE – this is computed based on patient's EBV blood results (*EBV1RES, EBV2RES, EBV3RES, EBV4RES)* from CRF – FUS
43	ebvptld	Char	1	$YESNO.		Had EBV Post-Transplant Lymphoproliferative Disorder	RECODE – this is computed based on patient's EBV blood results and if patient developed PTLD (*EBV1RES, EBV2RES, EBV3RES, EBV4RES, RPLTDDT)* from CRF – FUS
44	ebvritu	Char	1	$YESNO.		Received Rituximab	RECODE – this is computed based on patient's EBV blood results and if patient received rituximab (*EBV1RES, EBV2RES, EBV3RES, EBV4RES, RITXDSDT)* from CRF – FUS
45	ebvvira1000	Char	1	$YESNO.		Had EBV Viraemia of 1000 Copies per mL or Higher	RECODE – this is computed based on patient's EBV blood results (*EBV1RES, EBV2RES, EBV3RES, EBV4RES)* from CRF – FUS

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
46	toxcar	Char	1	$TOXGRD.		Cardiac Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 3-5 cardiac toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If no, it indicates that patient's cardiac toxicity grade was 0-2.
47	toxbla	Char	1	$TOX2GRD.		Bladder Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 4-5 bladder toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If 0, it indicates that patient's bladder toxicity grade was 0-3.
48	toxren	Char	1	$TOXGRD.		Renal Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 3-5 renal toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If 0, it indicates that patient's renal toxicity grade was 0-2.

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
49	toxpul	Char	1	$TOXGRD.		Pulmonary Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 3-5 pulmonary toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If 0, it indicates that patient's pulmonary toxicity grade was 0-2.
50	toxhep	Char	1	$TOXGRD.		Hepatic Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 3-5 hepatic toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If 0, it indicates that patient's hepatic toxicity grade was 0-2.
51	toxsto	Char	1	$TOXGRD.		Stomatitis or Mucositis Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 3-5 stomatitis or mucositis by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If 0, it indicates that patient's stomatitis or mucositis grade was 0-2.

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
52	toxgi	Char	1	$TOX2GRD.		Gastrointestinal Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 4-5 gastrointestinal toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If no, it indicates that patient's gastrointestinal toxicity grade was 0-3.
53	toxcns	Char	1	$TOX2GRD.		Central Nervous System (CNS) Toxicity Grade	RECODE - this is to indicate if patient experienced any grades 4-5 CNS toxicities by Day 100, computed based on CRF – T10 data and Bearman grading system along with NCI CTCAE 3.0. If no, it indicates that patient's cardiac toxicity grade was 0-3.
54	fudate	Num	8	MMDDYY8.		Date of Last Follow Up	RECODE - this is based on the last follow- up date from all available data sources including CRF and ERC adjudication
55	CZDTHPRM	Char	4	$4.	$4.	Primary Cause of Death	CRF – DTH
56	osday	Num	8			Overall Survival Days Post Transplant	RECODE – this is the days from transplant to the death or last follow up, computed for survival analysis
57	osmon	Num	8	8.2		Overall Survival Months Post Transplant	RECODE – this is the months from transplant to the death or last follow up, computed for survival analysis

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
58	osoutcome	Char	9			Outcome for Overall Survival	RECODE – this is the outcome for overall survival endpoint
59	ossrvcens	Num	8			Overall Survival Censor Indicator	RECODE – this is the censor indicator for overall survival endpoint (0=End Study, 1=Death)
60	ancday	Num	8			Days of Neutrophil Recovery from Transplant	RECODE – this is the days from transplant to the first date of achieving ANC recovery >= 500/mm^3 on three consecutive days (*ANC1DT*)
61	ancoutcome	Char	9			Outcome for Neutrophil Recovery	RECODE – this is the outcome for neutrophil recovery
62	anc_CI	Num	8			Neutrophil Recovery Indicator for Competing Risk	RECODE – this is the indicator for cumulative incidence of neutrophil recovery (0=End Study, 1=Death, 2=Engraft). Death is considered a competing risk in the cumulative incidence analysis for this endpoint.
63	gfday	Num	8			Days of Graft Failure from Transplant	RECODE – this is the days from transplant to primary or secondary graft failure or last follow up
64	gfmon	Num	8	8.2		Months of Graft Failure from Transplant	RECODE – this is the months from transplant to primary or secondary graft failure or last follow up
65	gfoutcome	Char	13			Outcome for Graft Failure	RECODE – this is the outcome for graft failure

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
66	gf_CI	Num	8			Graft Failure Indicator for Competing Risk	RECODE – this is the indicator for cumulative incidence of neutrophil recovery (0=End Study, 1=Death, 2=Graft Failure). Death is considered a competing risk in the cumulative incidence analysis for this endpoint.
67	agvh234day	Num	8			Days of Grade 2-4 Acute GVHD from Transplant	RECODE – this is the days from transplant to date of grade 2-4 acute GVHD or last follow up
68	gvh234outcome	Char	9			Outcome for Grade 2-4 Acute GVHD	RECODE – this is the outcome for grade 2-4 acute GVHD
69	gvh234_CI	Num	8			Grade 2-4 Acute GVHD Indicator for Competing Risk	RECODE – this is the indicator of cumulative incidence of grade 2-4 acute GVHD (0=End Study, 1=Death, 2=GVH234). Death is considered a competing risk in the cumulative incidence analysis for this endpoint
70	agvh34day	Num	8			Days of Grade 3-4 Acute GVHD from Transplant	RECODE – this is the days from transplant to date of grade 3-4 acute GVHD or last follow up
71	gvh34outcome	Char	9			Outcome for Grade 3-4 Acute GVHD	RECODE – this is the outcome for grade 3-4 acute GVHD
72	gvh34_CI	Num	8			Grade 3-4 Acute GVHD Indicator for Competing Risk	RECODE – this is the indicator of cumulative incidence of grade 3-4 acute GVHD (0=End Study, 1=Death, 2=GVH34). Death is considered a competing risk in the cumulative incidence analysis for this endpoint

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
73	cgvhdday	Num	8			Days of Chronic GVHD from Transplant	RECODE – this is the days from transplant to date of chronic GVHD or last follow up
74	cgvhdmon	Num	8	8.2		Months of Chronic GVHD from Transplant	RECODE – this is the months from transplant to date of chronic GVHD or last follow up
75	cgvhdoutcome	Char	9			Outcome for Chronic GVHD	RECODE – this is the outcome for chronic GVHD
76	cgvhd_CI	Num	8			Chronic GVHD Indicator for Competing Risk	RECODE – this is the indicator of cumulative incidence of chronic GVHD (0=End Study, 1=Death, 2=cGVHD). Death is considered a competing risk in the cumulative incidence analysis for this endpoint
77	maxc	Num	8			Maximum Copies/mL of EBV	RECODE – this is the computed maximum EBV viraemia copies reported on the CRF – FUS
78	RPLTDDT	Num	8	MMDDYY8.	8.	Date Post-Transplant Lymphoproliferative Disorder Developed	CRF – FUS
79	RITXDSDT	Num	8	MMDDYY8.	8.	Date of First Dose of Rituximab	CRF – FUS
80	mchm100	Num	8			Donor Chimerism % in Marrow at Day 100	RECODE – this is computed based on chimerism assay in marrow at Day 100 from CRF – HEM (*MRWASSAY, PCNTDNR1*)

Variables List							
#	**Variable**	**Type**	**Len**	**Format**	**Informat**	**Label**	**Data Source / Notes**
81	bchm100	Num	8			Donor Chimerism % in Blood at Day 100	RECODE – this is computed based on chimerism assay in blood at Day 100 from CRF – HEM (*MRWASSAY, PCNTDNR1*)
82	mchm365	Num	8			Donor Chimerism % in Marrow at Day 365	RECODE – this is computed based on chimerism assay in marrow at Day 365 from CRF – HEM (*BLDASSAY, PCNTDNR2*)
83	bchm365	Num	8			Donor Chimerism % in Blood at Day 365	RECODE – this is computed based on chimerism assay in blood at Day 365 from CRF – HEM (*BLDASSAY, PCNTDNR2*)
84	ltfu	Char	20			Follow-Up Status	RECODE – this is the computed based on death date, the last contact date, and if patient completed the 1-year, 2-year follow up assessment.

Algorithm used for the Recode and ERC Adjudications

Algorithm for Acute GVHD Grade:

- The acute GVHD algorithm calculates the grade based on the organ (skin, GI and liver) stage and etiology/biopsy reported on the weekly GVHD form.
- If none of the etiologies for skin, upper GI, lower GI, or liver are reported as GVHD, then the overall grade is 0
- If multiple etiologies are specified for lower GI or liver, the organ system will be down-staged by 1.
- If an upper GI biopsy is negative, upper GI symptoms are down-staged.
- If GVHD is not listed as an etiology for upper GI then upper GI symptoms are down-staged.
- Each organ contributes to the overall grade; while to get an overall grade, it does not necessarily need all organ symptoms. Different organ/stage determine different grade. Details below:

Acute GVHD Grade	Organ Involvement/stage
Grade 0	No skin rash and No protracted nausea and vomiting and No diarrhea or diarrhea < 500 mL/day and Bilirubin < 2.0 mg/dL
Grade I	Skin rash 25-50% and No diarrhea or diarrhea < 500 mL/day and Bilirubin < 2.0 mg/dL
Grade II	Skin rash >50% or Diarrhea >500 mL/day or Bilirubin 2.0 - 3.0 mg/dL or Persistent nausea/vomiting
Grade III	Skin-No rash to Rash > 50% with Diarrhea > 1000 mL/day or severe abdominal pain or Bilirubin 3.1 – 15 mg/dL
Grade IV	Skin-Generalized Erythroderma with Bullus Formation and Desquamation or Bilirubin > 15 mg/dL

Algorithm for Chronic GVHD: Limited vs Extensive (Definition from CIBMTR forms)

- Limited – localized skin involvement and/or hepatic dysfunction due to chronic GVHD
- Extensive – one or more of the following:
    1. generalized skin involvement; or,
    2. liver histology showing chronic aggressive hepatitis, bridging necrosis or cirrhosis; or,
    3. involvement of eye: Schirmer's test with < 5 mm wetting; or
    4. involvement of minor salivary glands or oral mucosa demonstrated on labial biopsy; or
    5. involvement of any other target organ

Note on the sample size:

Ninety-nine participants were enrolled on the study, with 96 of them included in the outcomes dataset. Three participants were excluded from the primary analysis including one participant withdrew consent prior to transplantation, one participant died before receiving treatment, and one participant stopped protocol regimen in the middle due to infection. The median follow-up time for alive patients is 24 months (range 8-98) post-transplant.