

Dataset Creation Plan for OneFL GBM Study

A. Identifying the initial GBM patient list:

Patients greater than 18 years of age with biopsy and/or resection proven GBM diagnosed between 1-1-12 and 12-31-16

GBM diagnosis codes:

- ICD-9: 191.2 191.3 191.4 191.5 191.6 191.7 191.8 191.9
- ICD-10: C71.0 C71.1 C71.2 C71.3 C71.4 C71.5 C71.6 C71.7 C71.8 C71.9

GBM biopsy codes:

- CPT: 61140 61304 61305 61750 61751

GBM excision/resection codes:

- CPT: 61510 61518 61520 61521 61526 61530

Skull base approach codes:

- CPT: 61581 61582 61583 61584 61585 61586 61590 61591 61592 61595 61596 61597 61598

Skull base definitive procedure codes:

- CPT: 61600 61601 61605 61606 61607 61608 61615 61616

B. Composition and structure of foundation datasets (to be provided to the PI):

Dataset 1: Patient characteristics - 1 row per patient

(ideally collected at the time of first GBM diagnosis, first GBM surgery, or first GBM biopsy)

CDM variables:

- Patient ID
- Encounter ID
- Facility ID
- Facility 3-digit zip code
- Admission date
- Age
- Gender
- Race/Ethnicity
- Height
- Weight
- BMI
- Enrollment start date
- Enrollment end date
- Diagnosis date for newly diagnosed GBM
- First GBM surgery date
- First GBM biopsy date
- Last encounter date
- Death date
- Cause of death code
- Cause of death code type

- Cause of death type

Dataset 2: Encounter events identified by DX code + admit date - 1 row per DX code + admit date
 (include all events listed below that occurred at any time within 2 years of first GBM surgery or first GBM biopsy for newly diagnosed GBM)

CDM variables:

- Patient ID
- Encounter ID
- Encounter type
- Facility ID
- Facility 3-digit zip code
- Admission date
- Discharge date
- Discharge status
- Diagnosis code
- **Diagnosis source**

GBM diagnosis codes:

- ICD-9: 191.2 191.3 191.4 191.5 191.6 191.7 191.8 191.9
- ICD-10: C71.0 C71.1 C71.2 C71.3 C71.4 C71.5 C71.6 C71.7 C71.8 C71.9

Recurrent GBM diagnosis codes: (no difference from the GBM diagnosis codes)

- ICD-9: 191.2 191.3 191.4 191.5 191.6 191.7 191.8 191.9
- ICD-10: C71.0 C71.1 C71.2 C71.3 C71.4 C71.5 C71.6 C71.7 C71.8 C71.9

Anemia codes:

- ICD-9: 238.72 280.0 280.8 280.9 281.1 281.2 281.9 282.9 283.0 283.9 284.89 284.9 285.0 285.1 285.29 285.3 285.9 288.09
- ICD-10: D50.0 D50.8 D50.9 D51.0 D51.1 D51.3 D51.9 D52.0 D52.1 D52.9 D53.1 D53.8 D53.9 D58.9 D59.9 D60.1 D60.8 D60.9 D61.09 D61.1 D61.2 D61.3 D61.89 D61.9 D63.8 D64.81 D64.9

Leukopenia codes:

- ICD-9: 288.5 288.59 288.02 288.09 288.02
- ICD-10: D70.0 D70.1 D70.2 D70.9 D72.818 D72.819

Neutropenia

- ICD-9: 288.00 288.01 288.02 288.03 288.04 288.09 289.53
- ICD-10: D70.0 D70.1 D70.2 D70.3 D70.4 D70.9

Thrombocytopenia

- ICD-9: 287.3 287.30 287.33 287.39 287.49 287.5 289.84 446.6
- ICD-10: D69.3 D69.42 D69.49 D69.59 D69.6 D75.82 Q87.2

Transaminitis

- ICD-9: 790.4
- ICD-10: R74.0

SAMPLE

Dataset 3: Encounter events identified by PR codes + PR date - 1 row per procedure

(include all procedures listed below that occurred at any time within 2 years of first GBM surgery or first GBM biopsy for newly diagnosed GBM)

CDM variables:

- Patient ID
- Encounter ID
- Encounter type
- Facility ID
- Facility 3-digit zip code
- Admission date
- Discharge date
- Discharge status
- Procedure date
- Procedure code

GBM excision/resection codes:

- CPT: 61510 61518 61520 61521 61526 61530

Skull base approach codes:

- CPT: 61581 61582 61583 61584 61585 61586 61590 61591 61592 61595 61596 61597 61598

Skull base definitive procedure codes:

- CPT: 61600 61601 61605 61606 61607 61608 61615 61616

GBM biopsy codes:

- CPT: 61140 61304 61305 61750 61751

GBM radiotherapy (RT) codes:

IMRT

- CPT: 77014 77263 77280 77290 77295 77300 77301 77307 77331 77333 77334 77336 77338 77370 77386 77412 77427 77470 Q9967

SRS RT

- CPT: 77263 77295 77300 77307 77334 77370 77372 77432 77470

Dataset 4: Prescribing events identified by RxNorm CUI + Rx start date - 1 row per RxNorm CUI + Rx start date

(include all prescribing events listed below that occurred at any time within 2 years of first GBM surgery or first GBM biopsy for newly diagnosed GBM)

CDM variables:

- Patient ID
- Encounter ID
- Encounter type
- Facility ID
- Facility 3-digit zip code
- Rx order date
- Rx start date
- Rx quantity
- Rx quantity unit
- Rx refills
- Rx days supply
- Rx frequency
- Rx basis
- RxNorm CUI for the following drugs:

TMZ (Temozolomide)

Other chemotherapy drugs:

- Bevacizumab (Avastin)
- CCNU (Lomustine)
- BCNU (Carmustine)
- Carboplatin
- CPT-11 (Irinotecan)
- Etoposide (VP-16)
- Hydroxyurea
- Tamoxifen

Dexamethasone (oral and IV forms only)

RxNorm CUI codes in following tables:

TMZ (temozolomide)

termType	rxcul	name
BN	261663	Temodar
IN	37776	temozolomide
SBD	261289	Temodar 20 MG Oral Capsule
SBD	835948	Temodar 100 MG Injection
SBD	705619	Temodar 180 MG Oral Capsule
SBD	261288	Temodar 5 MG Oral Capsule
SBD	705617	Temodar 140 MG Oral Capsule
SBD	261290	Temodar 100 MG Oral Capsule
SBD	261291	Temodar 250 MG Oral Capsule
SBDC	574513	temozolomide 5 MG [Temodar]
SBDC	574514	temozolomide 20 MG [Temodar]
SBDC	574515	temozolomide 100 MG [Temodar]
SBDC	574516	temozolomide 250 MG [Temodar]
SBDC	705616	temozolomide 140 MG [Temodar]
SBDC	705618	temozolomide 180 MG [Temodar]
SBDF	366431	temozolomide Oral Capsule [Temodar]
SBDF	1724294	temozolomide Injection [Temodar]
SCD	317160	temozolomide 100 MG Oral Capsule
SCD	313209	temozolomide 20 MG Oral Capsule
SCD	835945	temozolomide 100 MG Injection
SCD	700883	temozolomide 140 MG Oral Capsule
SCD	700885	temozolomide 180 MG Oral Capsule
SCD	313211	temozolomide 5 MG Oral Capsule
SCD	313210	temozolomide 250 MG Oral Capsule
SCDC	330405	temozolomide 20 MG
SCDC	330797	temozolomide 100 MG
SCDC	331482	temozolomide 5 MG
SCDC	331483	temozolomide 250 MG
SCDC	700882	temozolomide 140 MG
SCDC	700884	temozolomide 180 MG
SCDF	374610	temozolomide Oral Capsule
SCDF	1724292	temozolomide Injection
SCDG	1161485	temozolomide Injectable Product
SCDG	1161486	temozolomide Oral Product
SCDG	1161487	temozolomide Pill
SBDG	1181413	Temodar Injectable Product
SBDG	1181414	Temodar Oral Product
SBDG	1181415	Temodar Pill

Bevacizumab (Avastin)

termType	rxcul	name
BN	337521	Avastin
IN	253337	bevacizumab
SBD	1657068	Avastin 100 MG per 4 ML Injection
SBD	1657074	Avastin 400 MG per 16 ML Injection
SBDC	544556	bevacizumab 25 MG/ML [Avastin]
SBDF	1657067	bevacizumab Injection [Avastin]
SCD	1657066	4 ML bevacizumab 25 MG/ML Injection
SCD	1657073	16 ML bevacizumab 25 MG/ML Injection
SCDC	437105	bevacizumab 25 MG/ML
SCDF	1657065	bevacizumab Injection
SCDG	1161185	bevacizumab Injectable Product
SBDG	1175674	Avastin Injectable Product

CCNU (Lomustine)

termType	rxcul	name
BN	1545771	Gleostine
IN	6466	Lomustine
SBD	1545778	Gleostine 100 MG Oral Capsule
SBD	1720737	Gleostine 5 MG Oral Capsule
SBD	1545776	Gleostine 10 MG Oral Capsule
SBD	1545780	Gleostine 40 MG Oral Capsule
SBDC	1545772	Lomustine 10 MG [Gleostine]
SBDC	1545777	Lomustine 100 MG [Gleostine]
SBDC	1545779	Lomustine 40 MG [Gleostine]
SBDC	1720736	Lomustine 5 MG [Gleostine]
SBDF	1545773	Lomustine Oral Capsule [Gleostine]
SCD	1720735	Lomustine 5 MG Oral Capsule
SCD	197896	Lomustine 40 MG Oral Capsule
SCD	197894	Lomustine 10 MG Oral Capsule
SCD	197895	Lomustine 100 MG Oral Capsule
SCDC	316160	Lomustine 10 MG
SCDC	316161	Lomustine 100 MG
SCDC	316162	Lomustine 40 MG
SCDC	1720734	Lomustine 5 MG
SCDF	372631	Lomustine Oral Capsule
SCDG	1165319	Lomustine Oral Product
SCDG	1165320	Lomustine Pill
SBDG	1545774	Gleostine Oral Product
SBDG	1545775	Gleostine Pill

BCNU (Carmustine)

termType	rxcul	name
BN	217357	Gliadel
BN	343027	BiCNU
IN	2105	Carmustine
SBD	105552	BiCNU 100 MG Injection
SBD	212994	BCNU 7.7 MG Drug Implant [Gliadel]
SBDC	572946	Carmustine 7.7 MG [Gliadel]
SBDC	1729370	Carmustine 100 MG [BiCNU]
SBDF	405951	Carmustine Drug Implant [Gliadel]
SBDF	1729371	Carmustine Injection [BiCNU]
SCD	309013	Carmustine 7.7 MG Drug Implant
SCD	309012	Carmustine 100 MG Injection
SCDC	340520	Carmustine 7.7 MG
SCDC	1729367	Carmustine 100 MG
SCDF	378774	Carmustine Drug Implant
SCDF	1729368	Carmustine Injection
SCDG	1151413	Carmustine Drug Implant Product
SCDG	1151727	Carmustine Injectable Product
SBDG	1171232	Gliadel Drug Implant Product
SBDG	1173621	BiCNU Injectable Product

Carboplatin

termType	rxcul	name
IN	40048	CARBOplatin
SCD	597195	CARBOplatin 10 MG/ML Injectable Solution
SCDC	346209	CARBOplatin 10 MG/ML
SCDF	378363	CARBOplatin Injectable Solution
SCDG	1156104	CARBOplatin Injectable Product

CPT-11 (Irinotecan)

termType	rxcul	name
BN	203652	Camptosar
IN	51499	irinotecan
PIN	153329	Irinotecan hydrochloride
SBD	1726325	5 ML Camptosar 20 MG/ML Injection
SBD	1726321	2 ML Camptosar 20 MG/ML Injection
SBD	1726335	15 ML Camptosar 20 MG/ML Injection
SBDC	904161	Irinotecan hydrochloride 20 MG/ML [Camptosar]
SBDF	1726320	irinotecan Injection [Camptosar]
SCD	1726319	2 ML Irinotecan hydrochloride 20 MG/ML Injection
SCD	1726492	25 ML Irinotecan hydrochloride 20 MG/ML Injection
SCD	1726333	15 ML Irinotecan hydrochloride 20 MG/ML Injection
SCD	1726324	5 ML Irinotecan hydrochloride 20 MG/ML Injection
SCDC	904159	Irinotecan hydrochloride 20 MG/ML
SCDF	1726318	irinotecan Injection
SCDG	1161334	irinotecan Injectable Product
SBDG	1172305	Camptosar Injectable Product

Etoposide (VP-16)

termType	rxcul	name
BN	220347	Toposar
BN	274342	Etopophos
IN	4179	Etoposide
PIN	24614	etoposide phosphate
SBD	226719	Etopophos 100 MG Injection
SBD	206831	Toposar 20 MG/ML Injectable Solution
SBDC	567639	Etoposide 20 MG/ML [Toposar]
SBDC	1734342	Etoposide 100 MG [Etopophos]
SBDF	362881	Etoposide Injectable Solution [Toposar]
SBDF	1734343	Etoposide Injection [Etopophos]
SCD	310248	Etoposide 20 MG/ML Injectable Solution
SCD	1734340	Etoposide 100 MG Injection
SCD	197687	Etoposide 50 MG Oral Capsule
SCD	199315	Etoposide 100 MG Oral Capsule
SCDC	315912	Etoposide 20 MG/ML
SCDC	315913	Etoposide 50 MG
SCDC	329753	Etoposide 100 MG
SCDF	372132	Etoposide Oral Capsule
SCDF	376890	Etoposide Injectable Solution
SCDF	1734339	Etoposide Injection
SCDG	1157928	Etoposide Injectable Product
SCDG	1157929	Etoposide Oral Product
SCDG	1157930	Etoposide Pill

SBDG	1734344	Etopophos Injectable Product
SBDG	1178005	Toposar Injectable Product

Hydroxyurea

termType	rxcul	name
BN	151871	Hydrea
BN	216755	Droxia
IN	5552	hydroxyurea
SBD	213282	Droxia 200 MG Oral Capsule
SBD	213283	Droxia 300 MG Oral Capsule
SBD	213284	Droxia 400 MG Oral Capsule
SBD	105602	Hydrea 500 MG Oral Capsule
SBDC	564113	hydroxyurea 500 MG [Hydrea]
SBDC	573195	hydroxyurea 200 MG [Droxia]
SBDC	573196	hydroxyurea 300 MG [Droxia]
SBDC	573197	hydroxyurea 400 MG [Droxia]
SBDF	366743	hydroxyurea Oral Capsule [Hydrea]
SBDF	366459	hydroxyurea Oral Capsule [Droxia]
SCD	200342	hydroxyurea 200 MG Oral Capsule
SCD	283475	hydroxyurea 1000 MG Oral Tablet
SCD	197797	hydroxyurea 500 MG Oral Capsule
SCD	200344	hydroxyurea 400 MG Oral Capsule
SCD	200343	hydroxyurea 300 MG Oral Capsule
SCDC	316067	hydroxyurea 200 MG
SCDC	316068	hydroxyurea 300 MG
SCDC	316069	hydroxyurea 400 MG
SCDC	316070	hydroxyurea 500 MG
SCDC	331560	hydroxyurea 1000 MG
SCDF	370657	hydroxyurea Oral Tablet
SCDF	370658	hydroxyurea Oral Capsule
SCDG	1160113	hydroxyurea Oral Product
SCDG	1160114	hydroxyurea Pill
SBDG	1166387	Droxia Oral Product
SBDG	1166388	Droxia Pill
SBDG	1174066	Hydrea Oral Product
SBDG	1174067	Hydrea Pill

Tamoxifen

termType	rxcul	name
BN	281964	Nolvadex
BN	498464	Soltamox
IN	10324	Tamoxifen
PIN	40137	Tamoxifen Citrate
SBD	105630	Nolvadex 10 MG Oral Tablet
SBD	644304	Soltamox 2 MG/ML Oral Solution
SBDC	564131	Tamoxifen 10 MG [Nolvadex]
SBDC	644302	Tamoxifen 2 MG/ML [Soltamox]
SBDF	644303	Tamoxifen Oral Solution [Soltamox]
SBDF	93514	Tamoxifen Oral Tablet [Nolvadex]
SCD	198240	Tamoxifen 10 MG Oral Tablet
SCD	313195	Tamoxifen 20 MG Oral Tablet
SCD	250423	Tamoxifen 40 MG Oral Tablet
SCD	389230	Tamoxifen 2 MG/ML Oral Solution
SCDC	330520	Tamoxifen 10 MG
SCDC	330595	Tamoxifen 20 MG
SCDC	335656	Tamoxifen 40 MG
SCDC	393415	Tamoxifen 2 MG/ML
SCDF	374020	Tamoxifen Oral Tablet
SCDF	393416	Tamoxifen Oral Solution
SCDG	1164213	Tamoxifen Oral Liquid Product
SCDG	1164214	Tamoxifen Oral Product
SCDG	1164215	Tamoxifen Pill
SBDG	1184837	Soltamox Oral Liquid Product
SBDG	1184838	Soltamox Oral Product
SBDG	1185105	Nolvadex Oral Product
SBDG	1185106	Nolvadex Pill

Dexamethasone

termType	rxcuri	name
BN	203704	Dexasone
BN	216384	De-Sone LA
BN	227682	Decadron
BPKK	797023	DexPak TaperPak 13 Day Pack
BPKK	797022	DexPak 10 Day TaperPak
BPKK	847225	DexPak TaperPak 6 Day Pack
BPKK	795716	Decadron 5-12 Pak
GPCK	759481	{51 (Dexamethasone 1.5 MG Oral Tablet) } Pack
GPCK	1869595	{27 (Dexamethasone 1.5 MG Oral Tablet) } Pack
GPCK	846192	{21 (Dexamethasone 1.5 MG Oral Tablet) } Pack
GPCK	1869605	{41 (Dexamethasone 1.5 MG Oral Tablet) } Pack
GPCK	759696	{12 (Dexamethasone 0.75 MG Oral Tablet) } Pack
GPCK	759697	{35 (Dexamethasone 1.5 MG Oral Tablet) } Pack
IN	3264	Dexamethasone
PIN	22690	dexamethasone acetate
PIN	235486	Dexamethasone phosphate
PIN	48933	Dexamethasone sodium phosphate
SBD	343040	Decadron 0.75 MG Oral Tablet
SBD	1374387	Dexasone 8 MG/ML Injectable Suspension
SBD	1087757	Dexasone 2 MG/ML Injectable Solution
SBD	205595	De-Sone LA 8 MG/ML Injectable Suspension
SBDC	1087756	Dexamethasone 2 MG/ML [Dexasone]
SBDC	1374386	dexamethasone acetate 8 MG/ML [Dexasone]
SBDC	1534398	dexamethasone acetate 8 MG/ML [De-Sone LA]
SBDC	575233	Dexamethasone 0.75 MG [Decadron]
SBDF	1089819	Dexamethasone Injectable Suspension [Dexasone]
SBDF	363482	Dexamethasone Injectable Solution [Dexasone]
SBDF	369461	Dexamethasone Oral Tablet [Decadron]
SCD	387080	Dexamethasone 8 MG/ML Injectable Solution
SCD	105394	Dexamethasone 5 MG/ML Injectable Solution
SCD	393267	Dexamethasone 16 MG/ML Injectable Solution
SCD	108882	Dexamethasone 0.4 MG/ML Oral Solution
SCD	309696	Dexamethasone phosphate 10 MG/ML Injectable Solution
SCD	1374372	dexamethasone acetate 8 MG/ML Injectable Suspension
SCD	197582	Dexamethasone 4 MG Oral Tablet
SCD	197583	Dexamethasone 6 MG Oral Tablet
SCD	1812079	1 ML Dexamethasone phosphate 10 MG/ML Injection
SCD	1049400	Dexamethasone sodium phosphate 4 MG/ML Injectable Solution
SCD	1374389	dexamethasone acetate 16 MG/ML Injectable Suspension
SCD	1116927	Dexamethasone phosphate 4 MG/ML Injectable Solution
SCD	197580	Dexamethasone 1.5 MG Oral Tablet
SCD	197581	Dexamethasone 2 MG Oral Tablet
SCD	343033	Dexamethasone 0.75 MG Oral Tablet

SCD	1376068	Dexamethasone sodium phosphate 24 MG/ML Injectable Solution
SCD	1812095	1 ML Dexamethasone phosphate 4 MG/ML Prefilled Syringe
SCD	1812194	1 ML Dexamethasone phosphate 4 MG/ML Injection
SCD	309684	Dexamethasone 1 MG/ML Oral Solution
SCD	880649	Dexamethasone 3 MG/ML Injectable Solution
SCD	197579	Dexamethasone 1 MG Oral Tablet
SCD	435681	Dexamethasone 2 MG/ML Injectable Solution
SCD	197577	Dexamethasone 0.5 MG Oral Tablet
SCD	1006791	Dexamethasone 4 MG/ML Injectable Suspension
SCD	309686	Dexamethasone 0.1 MG/ML Oral Solution
SCD	197576	Dexamethasone 0.25 MG Oral Tablet
SCDC	1049399	Dexamethasone sodium phosphate 4 MG/ML
SCDC	1116926	Dexamethasone phosphate 4 MG/ML
SCDC	315773	Dexamethasone 0.1 MG/ML
SCDC	315774	Dexamethasone 0.25 MG
SCDC	315775	Dexamethasone 0.5 MG
SCDC	315776	Dexamethasone 1 MG
SCDC	315777	Dexamethasone 1.5 MG
SCDC	315778	Dexamethasone 4 MG
SCDC	315779	Dexamethasone 6 MG
SCDC	317346	Dexamethasone 2 MG
SCDC	317629	Dexamethasone 1 MG/ML
SCDC	323884	Dexamethasone 8 MG/ML
SCDC	328743	Dexamethasone 0.4 MG/ML
SCDC	330437	Dexamethasone 4 MG/ML
SCDC	331791	Dexamethasone 5 MG/ML
SCDC	332981	Dexamethasone 3 MG/ML
SCDC	343643	Dexamethasone 16 MG/ML
SCDC	345816	Dexamethasone 0.75 MG
SCDC	438889	Dexamethasone 0.5 MG/ML
SCDC	451789	Dexamethasone 2 MG/ML
SCDC	1374371	dexamethasone acetate 8 MG/ML
SCDC	1374388	dexamethasone acetate 16 MG/ML
SCDC	1376067	Dexamethasone sodium phosphate 24 MG/ML
SCDC	1812078	Dexamethasone phosphate 10 MG/ML
SCDF	371721	Dexamethasone Injectable Suspension
SCDF	371725	Dexamethasone Injectable Solution
SCDF	371728	Dexamethasone Oral Solution
SCDF	371729	Dexamethasone Oral Tablet
SCDF	1812073	Dexamethasone Injection
SCDF	1812094	Dexamethasone Prefilled Syringe
SCDG	1154531	Dexamethasone Injectable Product
SCDG	1154534	Dexamethasone Oral Liquid Product
SCDG	1154535	Dexamethasone Oral Product
SCDG	1154537	Dexamethasone Pill
SBDG	1170297	Decadron Oral Product

SBDG	1170298	Decadron Pill
SBDG	1175250	Dexasone Injectable Product

C. Patient timeline milestones and treatment timing patterns to be determined from the intermediate datasets:

Milestone event dates to be identified on patient timelines

(a patient timeline is defined as 2 years from first GBM surgery or first GBM biopsy for newly diagnosed GBM)

- First diagnosis of newly diagnosed GBM – Date of the first GBM DX code
- First GBM surgery – Date of first surgery code
- First GBM biopsy – Date of first biopsy code
- Diagnosis of recurrent GBM – Date of repeat surgery/RT or new chemotherapy prescription. Recurrent GBM occurs when there is a surgery/RT code and/or a new chemotherapy prescription AFTER the standard treatment has started. The new intervention/treatment/prescription code signals a deviation from standard treatment.
- Recurrent GBM surgery – Date of repeat surgery code
- Recurrent GBM biopsy – Date of repeat biopsy code
- Start of initial phase RT treatment – Date of first RT treatment code, typically 4-7 weeks status post-surgical resection or 1-2 weeks status post-biopsy. Initial phase RT may start as late as 12 weeks post-surgical intervention due to poor wound healing, infection, etc.
- End of initial phase RT treatment – Date of the last RT treatment code, typically 15 or 30-33 RT treatments over 6-7 weeks. If the RT lasts 3-5 weeks then we know the patient did not complete the standard (STUPP) regimen.
- Early discontinuation of initial phase RT treatment – Date of the last RT treatment code. RT was discontinued prematurely if the patient did not complete 15 or 30-33 RT treatments over 6-7 weeks.
- Start of initial phase TMZ treatment – Date of 42-day 75mg/m² TMZ prescription, within 1-2 weeks of first RT treatment. Prescribing of less than a 42-day supply of TMZ in this phase should be noted.
- End of initial phase TMZ treatment – 42 days after the prescribing of a 42-day supply of TMZ.
- Early discontinuation of initial phase TMZ treatment – Failure to receive a 42-day TMZ prescription within 1-2 weeks after the start of initial phase RT.
- Start of maintenance phase TMZ treatment – The date of the first prescription for 5-day maintenance TMZ, typically 4-5 weeks after completing initial phase RT/TMZ.
- End of maintenance phase TMZ treatment – If patients receive 6-12 prescriptions for 5-day maintenance TMZ after completing initial phase RT/TMZ, then they have completed their standard regimen. The date of the last 5-day TMZ prescription.

- Early discontinuation of maintenance phase TMZ treatment – Failing to receive 6-12 prescriptions for 5-day maintenance TMZ. The date of the last 5-day TMZ prescription.

SAMPLE

Treatment timing patterns to be identified on patient timelines

(a patient timeline is defined as 2 years from first GBM surgery or first GBM biopsy for newly diagnosed GBM)

- Initial phase RT treatment pattern (starting 4-7 weeks after first GBM surgery or 1-2 weeks after first GBM biopsy; RT may be delayed up to 12 weeks post-surgery due to poor wound healing or infection):
 - Fractionated RT: 30-33 treatments, daily Monday-Friday.
 - Hypo-fractionated RT: 15 treatments over 15 days.
- Initial phase TMZ treatment pattern (starting at the time of the first initial phase RT treatment, possibly delayed by 1-2 weeks for insurance reasons):
 - Prescribing of a 42-day supply of TMZ.
- Maintenance phase TMZ treatment pattern (starting 4-5 weeks after the end of initial phase RT/TMZ):
 - Prescribing of a 5-day supply of TMZ approximately every 28 days for 6 to 12 cycles. Patients may have a 1-2 week delay between cycles.

Events of interest at the time of early discontinuation of initial phase RT, initial phase TMZ, or maintenance phase TMZ

Time period of interest: ± 4 weeks before/after an early discontinuation of treatment (either initial phase RT, initial phase TMZ, or maintenance phase TMZ).

- GBM recurrence
- Repeat GBM surgery
- Repeat GBM biopsy
- Repeat GBM RT
- Chemotherapy drug Rx other than TMZ
- Anemia
- Leukopenia
- Neutropenia
- Thrombocytopenia
- Transaminitis
- Dexamethasone Rx

Note that items in red are not necessarily signs of early discontinuation, but if early discontinuation is noted, we can assume that the items in red are the issue.

We are interested in whether patients complete 30-33 treatments of RT with concurrent 42-day TMZ, followed, after a 4-5 week break, by 6-12 cycles of 5-day maintenance TMZ prescribed every 28 days. Delays in treatment do not necessarily disqualify patients from completing standard treatment.

D. Final analysis dataset - 1 row per patient:

Variables:

- All of the variables in Foundation Dataset 1 (Patient characteristics)
- All of the milestone event dates (1 date variable for each milestone event)

- 0/1 indicator for early discontinuation of initial RT treatment
- 0/1 indicator for early discontinuation of initial TMZ treatment
- 0/1 indicator for early discontinuation of maintenance TMZ treatment

- Number of initial RT treatments observed
- Number of initial TMZ Rx records observed
- Number of maintenance TMZ Rx records observed

- 0/1 indicator for occurrence of each event type at the time of early discontinuation of initial RT
- 0/1 indicator for occurrence of each event type at the time of early discontinuation of initial TMZ
- 0/1 indicator for occurrence of each event type at the time of early discontinuation of maintenance TMZ