

<b>VASARI Imaging Evaluation Worksheet (rev 5)</b>				
	<b>Reviewer:</b>		<b>Patient #</b>	
	<b>Baseline Study Date:</b>		<b>Initial Post Op Study Date:</b>	
<b>Feature</b>	<b>Feature Description</b>			<b>Rating</b>
<b>LESION LOCATION</b>				
<b>Tumor Location:</b>	Location of lesion epicenter.			Frontal <input type="checkbox"/> Parietal <input type="checkbox"/> Temporal <input type="checkbox"/> Occipital <input type="checkbox"/> Brainstem <input type="checkbox"/> Cerebellum <input type="checkbox"/> (select all which apply)
<b>Side of Tumor Epicenter:</b>	Side of lesion epicenter			<input type="radio"/> Right <input type="radio"/> Center <input type="radio"/> Left
<b>Eloquent Cortex:</b>	Eloquent cortex involved (motor, language, vision)			<input type="radio"/> Yes <input type="radio"/> No
<b>MORPHOLOGY OF LESION SUBSTANCE</b>				
<b>Enhancement:</b>	Contrast enhancement is defined as having all or portions of the tumor that demonstrate significantly higher signal on the postcontrast T1W images compared to precontrast T1W images.			<input type="radio"/> Yes <input type="radio"/> No
<b>Solid enhancement:</b>	[0 none, 1 part, 2 all, N/A] If the enhancing portion of the tumor enhances solidly, without cystic or necrotic components, the tumor is scored <i>all</i> . If there are both regions of solid enhancement as well as necrosis or central irregular nonenhancement or cyst formation, the tumor is scored <i>part</i> . If the tumor demonstrates only peripheral or ring enhancement without significant portions of solid enhancement, the tumor is scored <i>none</i> . If there is no enhancement, this variable is not applicable ( <i>na</i> ).			<input type="radio"/> None <input type="radio"/> N/A <input type="radio"/> Part <input type="radio"/> All
<b>nCET:</b>	[0 no, 1 yes] Nonenhancing tumor is defined as regions of T2W hyperintensity (less than the intensity of cerebrospinal fluid, with corresponding T1W hypointensity) that are associated with mass effect and architectural distortion, including blurring of the gray-white interface			<input type="radio"/> Yes <input type="radio"/> No
<b>Necrosis:</b>	(Necrosis is defined as a region within the tumor that does not enhance or shows markedly diminished enhancement, is high on T2W and proton density images, is low on T1W images, and has an irregular border)			<input type="radio"/> Yes <input type="radio"/> No
<b>Cyst(s):</b>	[0 no, 1 yes] Cysts are well defined, rounded, often eccentric regions of very bright T2W signal and low T1W signal essentially			<input type="radio"/> Yes

<b>Cyst(s):</b>	matching CSF signal intensity, with very thin, regular, smooth, nonenhancing or regularly enhancing walls, possibly with thin, regular, internal septations	<input type="radio"/> No
<b>Multifocal or Multicentric:</b>	<i>Multifocal</i> is defined as having at least one region of tumor, <i>either enhancing or nonenhancing</i> , which is <i>not</i> contiguous with the dominant lesion and is <i>outside</i> the region of signal abnormality (edema) surrounding the dominant mass. This can be defined as those resulting from dissemination or growth by an established route, spread via commissural or other pathways, or via CSF channels or local metastases, whereas <i>Multicentric</i> are widely separated lesions in different lobes or different hemispheres that cannot be attributed to one of the previously mentioned pathways. <i>Gliomatosis</i> refers to generalized neoplastic transformation of the white matter of most of a hemisphere.	<input type="radio"/> Multifocal <input type="radio"/> Multicentric <input type="radio"/> Gliomatosis <input type="radio"/> N/A
<b>T1/FLAIR RATIO:</b>	Tumor feature summary. [Mixed, expansive or infiltrative]. <i>Expansive</i> = size of pre-contrast T1 abnormality = size of FLAIR abnormality. <i>Mixed</i> = Size of T1 abnormality slightly less than FLAIR envelope; <i>Infiltrative</i> = Size of pre-contrast T1 abnormality much smaller than size of FLAIR abnormality.	<input type="radio"/> Expansive ( T1 = FLAIR) <input type="radio"/> Mixed ( T1 < FLAIR) <input type="radio"/> Infiltrative (T1 << FLAIR)
<b>MORPHOLOGY OF LESION MARGIN</b>		
<b>Thickness of enhancing margin:</b>	[0 none, 1 thin, 2 thick, N/A] <i>The scoring is not applicable if there is no contrast enhancement.</i> If most of the enhancing rim is thin, regular, and has homogenous enhancement, the tumor receives a score of 1. If most of the rim demonstrates nodular and/or thick enhancement, the score is 2. If there is only solid enhancement and no rim, the score is 0.	<input type="radio"/> None <input type="radio"/> N/A <input type="radio"/> Thin <input type="radio"/> Thick
<b>Definition of the enhancing margin:</b>	[0 well defined, 1 poorly defined, N/A] <i>The scoring is not applicable (NA) if there is no contrast enhancement.</i> If most of the outside margin of the enhancement is <u>well defined</u> , the tumor is scored 1, otherwise 0.	<input type="radio"/> Well Defined <input type="radio"/> Poorly Defined <input type="radio"/> N/A
<b>Definition of the non-enhancing margin (e.g. Grade III):</b>	[0 smooth, 1 irregular]. If most of the outside nonenhancing margin of the tumor is well defined and <i>smooth</i> (geographic), the tumor is scored 0. If the margin is ill-defined, the tumor is scored 1 - <i>irregular</i> .	<input type="radio"/> Smooth <input type="radio"/> Irregular
<b>ALTERATIONS IN VICINITY OF LESION</b>		
<b>Edema:</b>	[0 none, 1 mild, 2 moderate/severe] If no convincing edema, as demonstrated by regions of very bright T2W signal, then a score of 0 (none) is given. If there is clearly visible, bright T2W signal not associated with mass effect and architectural distortion (see nonenhancing tumor) and not extending more than 1 cm beyond the tumor margin, the score is 1 (mild). If there is more extensive, very bright T2W signal intensity, often following white-matter tracts and extending significantly beyond (>1 cm) the margins of the tumor, the edema is scored a 2 (moderate/severe).	<input type="radio"/> None <input type="radio"/> Mild (< 1cm) <input type="radio"/> Moderate/severe (>1 cm)

<b>Edema Crosses Midline</b>	Edema spans white matter commissures extending into contralateral hemisphere. (exclusive of herniated ipsilateral tissue).	<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A
<b>Hemorrhage:</b>	Intrinsic hemorrhage in the tumor matrix.	<input type="radio"/> Yes <input type="radio"/> No
<b>Diffusion:</b>	Facilitated or restricted diffusion (Based on ADC map). Equivocal or none is N/A.	<input type="radio"/> Facilitated <input type="radio"/> Restricted <input type="radio"/> N/A
<b>Pial invasion:</b>	Enhancement of the overlying pia in continuity with enhancing or non-enhancing tumor	<input type="radio"/> Yes <input type="radio"/> No
<b>Ependymal invasion:</b>	Invasion of any adjacent ependymal surface in continuity with enhancing or non-enhancing tumor matrix - characterized by enhancement of the ependyma.	<input type="radio"/> Yes <input type="radio"/> No
<b>Cortical involvement:</b>	Non-enhancing or enhancing tumor extending to the cortical mantle, or cortex is no longer distinguishable relative to subjacent tumor.	<input type="radio"/> Yes <input type="radio"/> No
<b>Deep WM invasion:</b>	Enhancing or nCET tumor extending into the internal capsule or brainstem.	<input type="radio"/> Yes <input type="radio"/> No
<b>nCET tumor Crosses Midline:</b>	nCET crosses into contralateral hemisphere through white matter commissures (exclusive of herniated ipsilateral tissue).	<input type="radio"/> Yes <input type="radio"/> No
<b>Enhancing tumor Crosses Midline:</b>	Enhancing tissue crosses into contralateral hemisphere through white matter commissures (exclusive of herniated ipsilateral tissue).	<input type="radio"/> Yes <input type="radio"/> No
<b>Satellites:</b>	[ 0 no, 1 yes] A satellite lesion is <i>within</i> the region of signal abnormality surrounding the dominant lesion but not contiguous in any part with the major tumor mass.	<input type="radio"/> Yes <input type="radio"/> No
<b>Calvarial remodeling:</b>	Erosion of inner table of skull (possibly a secondary sign of slow growth)	<input type="radio"/> Yes <input type="radio"/> No
<b>EXTENT OF RESECTION</b>		
<b>Extent of resection of enhancing tumor:</b>	[NA, <20%, 20%-89%, 90%-99%,100%] The first postoperative scan (contrast-enhanced MR imaging) assessed for tumor residual. Scans are scored 100% resection if no contrast enhancing residual tumor is visible. Trace tumor residual <10% of the total corresponded to the 90%-99% category. If the tumor was debulked, but substantial tumor remained, a score of 20%-89% was used. If the tumor was biopsied only, then 0%-19% is used. NA if tumor did not enhance pre-operatively.	<input type="radio"/> <20% <input type="radio"/> 20-89% <input type="radio"/> 90-99% <input type="radio"/> 100%
<b>Extent of resection of nCET:</b>	[<20%, 20%-89%, 90%-99%,100%] Scans were scored 100% resection if no nCET tumor residual was visible. Trace tumor residual <10% of the total corresponded to the 90%-99% category. If the tumor was debulked, but substantial tumor remained, a score of 20%-89% was	<input type="radio"/> <20% <input type="radio"/> 20-89% <input type="radio"/> 90-99%

	used. If the tumor was biopsied only, then 0%-19% is used.	<input type="radio"/> 100%
<b>Resected Component features</b>	Based upon comparison to pre-operative study, select which imaging features most likely correspond to the resected tissue (more than one may apply).	Enhancing tissue <input type="checkbox"/> NCEnt <input type="checkbox"/> Edema <input type="checkbox"/> Necrosis <input type="checkbox"/> (select all which apply)
	<input type="button" value="Submit"/>	