## DATA SOURCE:

SUBJECT ID

1. MDS/UDS Patient ID:
2. Date form completed (M M/D D/YYYY):
3. Neuropath ID:
4. Gender:

[ ] Male

[ ] Female

[ ] Unknown

[ ] Unspecified

1. Date of death (M M /D D/Y Y Y Y):
2. FINAL CLINICAL DIAGNOSIS BEFORE DEATH:

[ ]  MSAP

[ ]  MSAC

[ ]  Corticobasal syndrome

[ ]  Vascular disease

[ ]  Vascular dementia

[ ]  No significant pathology

[ ]  AD pathology present but insufficient for AD diagnosis

[ ]  Alzheimer disease (AD)

[ ]  Lewy body disease

[ ]  Parkinson’s Disease

[ ]  Multiple system atrophy

[ ]  Progressive supranuclear palsy

[ ]  Corticobasal degeneration

[ ]  FTLD-TDP

[ ]  FTLD-Taupathies

[ ]  Vascular Parkinsonism

[ ]  Hydrocephalus

[ ]  Idiopathic nigral degeneration

[ ]  Hippocampal sclerosis

[ ]  Prion-associated disease

[ ]  Huntington's disease (HD)

[ ]  Neurodegeneration with brain iron accumulation
[ ]  Other (specify):

1. Date of final diagnosis (M M/D D/Y Y Y Y):

## BRAIN TISSUE AND POST MORTEM CSF

1. Is banked frozen brain tissue accessible?

[ ]  Yes

[ ]  No

[ ]  Unknown

1. Is formalin-fixed brain tissue accessible?

[ ]  Yes

[ ]  No

[ ]  Unknown

1. Are paraffin-embedded blocks of brain tissue accessible?

[ ]  Yes

[ ]  No

[ ]  Unknown

1. Is banked postmortem cerebrospinal fluid (CSF) accessible?

[ ]  Yes

[ ]  No

[ ]  Unknown

1. Other banked postmortem specimen (e.g., blood, spinal cord, nerve, muscle)

[ ]  Yes, specify:

[ ]  No

[ ]  Unknown

1. Macroscopic photographs

[ ]  Yes, specify:

[ ]  No

[ ]  Unknown

## MACROSCOPIC ASPECTS

1. Brain weight

Record brain weight (grams):

What hemisphere of brain was evaluated?

[ ]  Left

[ ]  Right

[ ]  Both

[ ]  N/A

1. Type of tissue weighed

[ ] Whole fresh brain

[ ] Whole fixed brain

[ ] Fixed hemibrain (calculated whole brain weight)

[ ] Unknown

1. Hydrocephalus

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

## ALZHEIMER’S TYPE PATHOLOGY

1. NIA/Reagan Institute neuropathological criteria (Hyman and Trojanowski, 1997)

[ ]  Low likelihood of dementia being due to Alzheimer’s disease

[ ]  Intermediate likelihood of dementia being due to Alzheimer’s disease

[ ]  High likelihood of dementia being due to Alzheimer’s disease

[ ]  Criteria not met

[ ]  Not assessed

[ ]  Unknown

1. CERAD neuropathological criteria (Mirra et al., 1991)

[ ]  Possible Alzheimer’s disease

[ ]  Probable Alzheimer’s disease

[ ]  Definite Alzheimer’s disease

[ ]  Criteria not met

[ ]  Not assessed

[ ]  Unknown

1. ADRDA/Khachaturian neuropathological criteria (Khachaturian, 1985)

[ ]  Alzheimer’s disease

[ ]  Criteria not met

[ ]  Not assessed

[ ]  Unknown

1. Other or unspecified neuropathological criteria

[ ]  Alzheimer’s disease, unspecified

[ ]  Criteria not met

[ ]  Not assessed

[ ]  Unknown

1. BRAAK & BRAAK NEUROFIBRILLARY STAGE(Braak and Braak, 1991, Braak and Braak, 1997)

[ ]  Stage I

[ ]  Stage II

[ ]  Stage III

[ ]  Stage IV

[ ]  Stage V

[ ]  Stage VI

[ ]  Neurofibrillary degeneration not present

[ ]  Not assessed

[ ]  Unknown

1. Staining methods used for tangles

[ ]  Immunohistochemistry (IHC):

[ ]  Antibodies:

1. Staining methods used for plaques

[ ]  Immunohistorchemistry (IHC):

[ ]  Antibodies:

1. Staining methods used to Lewy Bodies

[ ]  Immunohistorchemistry (IHC):

[ ]  Antibodies:

1. Staining methods used for TDP-43

[ ]  Immunohistochemistry (IHC):

[ ]  Antibodies:

## SENILE PLAQUES. (Mirra et al., 1991)

1. Neuritic plaques (plaques with argyrophilic dystrophic neurites with or without dense amyloid cores).

[ ] No neuritic plaques

[ ]  Sparse neuritic plaques

[ ]  Moderate neuritic plaques

[ ]  Frequent neuritic plaques

[ ]  Not assessed

[ ]  Unknown

1. Region of brain neuritic plaques scored

[ ]  Left

[ ]  Right

[ ]  Both

[ ]  N/A

1. Diffuse plaques (plaques with non-compact amyloid and no apparent dystrophic neurites).

[ ]  No diffuse plaques

[ ]  Sparse diffuse plaques

[ ]  Moderate diffuse plaques

[ ]  Frequent diffuse plaques

[ ]  Not assessed

[ ]  Unknown

1. Region of brain diffuse plaques scored

[ ]  Left

[ ]  Right

[ ]  Both

[ ]  N/A

1. Amyloid phase (Alafuzoff et al., 2009b, Thal et al., 2002)

[ ]  Phase 1 (cortex)

[ ]  Phase 2 (cortex & hippocampus)

[ ]  Phase 3 (cortex, hippocampus & basal ganglia)

[ ]  Phase 4 (cortex, hippocampus, basal ganglia & brainstem)

[ ]  Phase 5 (cortex, hippocampus, basal ganglia, brainstem & cerebellum)

[ ]  Amyloid plaques not present

[ ]  Incompletely assessed

[ ]  Not assessed

[ ]  Unknown

## ISCHEMIC, HEMORRHAGIC OR VASCULAR PATHOLOGY

1. Is ischemic, hemorrhagic or vascular pathology present?

[ ]  Yes

[ ]  No (SKIP to Question 40)

[ ]  Not assessed

[ ] Unknown

1. Are one or more large artery cerebral infarcts present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Are one or more cortical microinfarcts (including “granular atrophy”) present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Are one or more lacunes (small artery infarcts and/or hemorrhages) present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Are single or multiple hemorrhages present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Is subcortical arteriosclerotic leukoencephalopathy present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Is cortical laminar necrosis present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Is medial temporal lobe sclerosis that is considered to be ischemic in nature present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Is there other pathology related to ischemic or vascular disease not previously specified present?

[ ]  Yes, specify:

[ ]  No

[ ]  Not assessed

[ ] Unknown

1. Is atherosclerotic vascular pathology (of the circle of Willis) present?

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Is arteriosclerosis (small parenchymal arteriolar disease) present?

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Is amyloid angiopathy present?

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Is another type of angiopathy (e.g., CADASIL or arteritis) present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ] Unknown

## LEWY BODY PATHOLOGY.

1. Is Lewy body pathology present? (Beach et al., 2008, Alafuzoff et al., 2008)

[ ]  Yes

[ ]  No (SKIP to Question 65)

[ ]  Not assessed

[ ] Unknown

## Density of “Lewy related pathology” by regions (Beach et al., 2008, Alafuzoff et al., 2008)

1. Sympathetic ganglia (paravertebral):

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Parasympathetic ganglia (GI, GU):

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Spinal cord:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Olfactory bulb:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Dorsal motor nucleus/glossopharyngeal:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Locus ceruleus:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Raphe:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Substantia nigra, pars compacta:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Amygdala:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Basal nucleus/diagonal band:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Hypothalamus:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Caudate/putamen:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Entorhinal cortex:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Cingulate cortex:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Hippocampus:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Temporal cortex:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Frontal cortex:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Parietal cortex:

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Primary cortex (motor and/or visual):

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Lewy body type (McKeith et al., 2005, Alafuzoff et al., 2009a)

[ ]  Brainstem predominant type

[ ]  Intermediate or transitional (limbic) type

[ ]  Diffuse (neocortical) type

[ ]  Amygdala predominant

[ ]  Lewy body pathology, unspecified or not further assessed

[ ]  Not assessed

[ ]  Missing/unknown

1. Estimate degree of substantia nigral neuromelanin-containing neurons neuronal loss(Dickson et al., 2009)

[ ]  None

[ ]  Mild

[ ]  Moderate

[ ]  Severe

[ ]  Not assessed

[ ]  Unknown

1. Alpha-synuclein pathology consistent with multiple system atrophy (MSA) (Lantos, 1998)

[ ]  Striatonigral predominant

[ ]  Olivopontocerebellar predominant

[ ]  Mixed striatonigral and olivopontocerebellar

[ ]  MSA (not specified or incompletely characterized)

[ ]  Not assessed

[ ]  Unknown

1. Spinocerebellar degenerations (Gwinn-Hardy et al., 2000, Gwinn-Hardy et al., 2001)

[ ]  Yes, specify:

[ ]  No

[ ]  Not assessed

[ ]  Unknown

## FRONTOTEMPORAL LOBAR DEGENERATIONS

TAUOPATHIES

1. Is frontotemporal degeneration with tau pathology present?

[ ]  Yes

[ ]  No (SKIP to Question 76)

[ ]  Not assessed

[ ]  Unknown

3R TAUOPATHIES

1. Pick’s Disease (Dickson, 1998)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

4R TAUOPATHIES

1. Corticobasal degeneration (Dickson et al., 2002)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Progressive supranuclear palsy (Dickson, 1999, Lantos, 1994)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Argyrophilic grain dementia (including diffuse AGD) (Tolnay and Clavaguera, 2004)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Other 4R tauopathy (e.g., multisystem tauopathy) (Bigio et al., 2001, Kovacs et al., 2008)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

3R+4R TAUOPATHIES

1. Tangle-predominant dementia, including Parkinson dementia complex (Jellinger and Bancher, 1998, Hof et al., 1991)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

OTHER TAUOPATHIES

1. Tauopathy, not otherwise specified or incompletely characterized)

[ ]  Yes, specify:

[ ]  No

[ ]  Not assessed

[ ] Unknown

TDP-43 PROTEINOPATHIES

1. Is abnormal TDP-43 pathology present? (Cairns et al., 2007)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Hippocampal sclerosis of the elderly associated with TDP-43 pathology (Amador-Ortiz et al., 2007)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Motor Neuron Disease

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

FUS PROTEINOPATHIES

1. Is abnormal FUS pathology present? (Mackenzie et al., 2010, Munoz et al., 2009, Neumann et al., 2009a, Neumann et al., 2009b)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

FTLD-OTHER

1. Is another type of FTLD present?

[ ]  Yes

[ ]  No (SKIP to Question 84)

[ ]  Not assessed

[ ]  Unknown

1. FTLD-UPS (ubiquitin-positive inclusions, but tau, TDP-43 and FUS negative)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. FTLD-NI (No inclusion)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. FTLD-NOS (not otherwise specified or incompletely characterized)

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

## PRION-RELATED DISORDERS

1. Is there pathology consistent with transmissible spongiform encephalopathy?

[ ]  Yes

[ ]  No (SKIP to Question 87)

[ ]  Not assessed

[ ]  Unknown

1. Is Creutzfeldt-Jakob disease or variant CJD present?

[ ]  Yes

[ ]  No

[ ]  Not assessed

[ ]  Unknown

1. Are other prion diseases present (e.g., Gerstmann-Straussler syndrome)?

[ ]  Yes, specify:

[ ]  No

[ ]  Not assessed

[ ]  Unknown

## OTHER MAJOR PATHOLOGIC DISORDERS

(e.g., infectious, immunologic, metabolic, neoplastic, toxic or degenerative).

1. Are other major pathologic disorders present (not addressed)?

[ ]  Yes

[ ]  No (SKIP to Question 89)

[ ]  Not assessed

[ ]  Unknown

1. List other disorders

[ ]  1

[ ]  2

[ ]  3

## FINAL DIAGNOSIS

1. What are the primary and contributing pathologic diagnoses or features which you judge to be responsible for the subject’s cognitive status?

Primary (code as 1); Contributing (code as 2)

[ ]  No significant pathology

[ ]  AD pathology present but insufficient for AD diagnosis

[ ]  Alzheimer disease (AD)

[ ]  Lewy body disease

[ ]  Multiple system atrophy

[ ]  Progressive supranuclear palsy

[ ]  Corticobasal degeneration

[ ]  Vascular disease

[ ]  FTLD-TDP

[ ]  FTLD-Taupathies

[ ]  Hydrocephalus

[ ]  Prion-associated disease

[ ]  Huntington's disease (HD)

[ ]  Neurodegeneration with brain iron accumulation

[ ]  Other (specify):

1. What are the primary and contributing pathologic diagnoses or features which you judge to be responsible for the subject’s extrapyramidal movement disorders, if present?

Primary (code as 1); Contributing (code as 2)

[ ]  No significant pathology

[ ]  AD pathology present but insufficient for AD diagnosis

[ ]  Alzheimer disease (AD)

[ ]  Lewy body disease

[ ]  Multiple system atrophy

[ ]  Progressive supranuclear palsy

[ ]  Corticobasal degeneration

[ ]  FTLD-TDP

[ ]  FTLD-Taupathies

[ ]  Vascular Parkinsonism

[ ]  Hydrocephalus

[ ]  Idiopathic nigral degeneration

[ ]  Hippocampal sclerosis

[ ]  Prion-associated disease

[ ]  Huntington's disease (HD)

[ ]  Neurodegeneration with brain iron accumulation
[ ]  Other (specify):

## General Instructions

This CRF contains data that would be collected when a neuropathology study is performed to study disease of nervous system tissue and how it relates to Parkinson’s disease.

Important note: None of the data elements included on this CRF Module is classified as Core (i.e., strongly recommended for Parkinson’s disease clinical studies to collect if imaging studies are performed). All data elements are classified as supplemental (i.e., non Core) and should only be collected if the research team considers them appropriate for their study. Please see the Data Dictionary for element classifications.

## Specific Instructions

Please see the Data Dictionary for definitions for each of the data elements included in this CRF Module.

The CRF includes all instructions available for the data elements at this time. More detailed instructions will be added in Version 2.0 of this CRF Module.

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