Expanding the Role of the Nurse Practitioner in Multiple Sclerosis to Optimize Outcomes: Early Diagnosis, Treatment Advances, and Patient-Centered Care

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Faculty Disclosures

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Learning Objectives

- Define the role of the NP in the healthcare setting, and their role in the diagnosis and treatment of multiple sclerosis (MS)
- Describe how to evaluate patients for signs and symptoms of early MS or relapse, to facilitate prompt referral to specialist care
- Identify available therapies for treatment of MS, and factors to consider in their use in individual patients
- Characterize strategies to address patient education and adherence challenges, and the long-term monitoring of overall wellness in patients with MS
The Evolving Role of NPs in MS
Demand for board-certified neurologists exceeds supply in vast majority of US states, a trend that is projected to persist into the near future.

The Role of Nurses in the Management of MS

Clinical care

Administration

Patient Education

Patient Advocacy

Collaboration

Research

Assessment of Multiple Sclerosis
Diagnosis and Evaluation of Disability
Patient-reported Symptoms of MS

% of patients with MS surveyed (N=5,311)

- Fatigue: 87%
- Numbness, tingling: 75%
- Memory loss/brain fog: 70%
- Muscle spasms: 67%
- Muscle weakness: 64%
- Heat sensitivity: 63%
- Bladder problems: 61%
- Pain: 55%
- Depression: 53%
- Anxiety: 48%
- Foot drop: 39%
- Vision problems: 30%
- Sexual dysfunction: 29%
- Hearing loss: 16%

Nazareth TA, et al. *Mult Scler Relat Disord*. 2018;26:219-234; Available at: [https://multiplesclerosis.net](https://multiplesclerosis.net)
MS Clinical Phenotypes

Clinically Isolated Syndrome (CIS)

Relapsing Remitting MS (RRMS)

MRI, magnetic resonance imaging.

MS Clinical Phenotypes (Cont’d)

Secondary Progressive MS (SPMS)

Disability vs Time

Primary Progressive MS (PPMS)

Disability vs Time

MS Disease Activity

Active vs not active

• Applicable to all phenotypes
• Has there been the following in the prior year?
  – A clinical relapse OR
  – A new or enlarging T2 lesion or contrast lesion

Progressing vs not progressing

• Applicable to PPMS and SPMS
• Has the patient gradually worsened neurologically independent of acute attacks in the prior year?
## Diagnosis of Patients With an Attack at Onset

### 2017 Revised McDonald Criteria

<table>
<thead>
<tr>
<th>Clinical attack(s)</th>
<th>Lesions with objective clinical evidence</th>
<th>Additional data needed for diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥2</td>
<td>≥2</td>
<td>• None</td>
</tr>
<tr>
<td>≥2</td>
<td>1 (&amp; clear evidence of previous attack involving a lesion in a distinct anatomical location)</td>
<td>• None</td>
</tr>
<tr>
<td>≥2</td>
<td>1</td>
<td>• Dissemination in space demonstrated by an additional clinical attack implicating a different CNS site or by MRI</td>
</tr>
<tr>
<td>1</td>
<td>≥2</td>
<td>• Dissemination in time demonstrated by an additional clinical attack or by MRIs OR demonstration of CSF-specific oligoclonal bands</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>• Dissemination in space demonstrated by an additional clinical attack implicating a different CNS site or by MRI AND dissemination in time demonstrated by an additional clinical attack or by MRIs OR demonstration of CSF-specific oligoclonal bands</td>
</tr>
</tbody>
</table>

CNS, central nervous system; CSF, cerebral spinal fluid.

Diagnosis of Patients With Primary Progressive MS

2017 Revised McDonald Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>One year of disability progression (retrospectively or prospectively determined) independent of clinical relapse</td>
</tr>
<tr>
<td><strong>AND</strong></td>
</tr>
<tr>
<td>Two of the following:</td>
</tr>
<tr>
<td>• ≥1 T2-hyperintense lesions* characteristic of multiple sclerosis in ≥1 of the following brain regions: periventricular, cortical or juxtacortical, or infratentorial</td>
</tr>
<tr>
<td>• ≥2 T2-hyperintense lesions* in the spinal cord</td>
</tr>
<tr>
<td>• Presence of CSF-specific oligoclonal bands</td>
</tr>
</tbody>
</table>

Definition of MS Relapse

- New symptoms of neurological dysfunction OR worsening of existing symptoms in a patient stable for ≥30 days
- Acute or subacute onset
- Lasting >24 hours
- Not attributable to another cause such as infection (not a pseudo-relapse)

The Role of the MS Nurse in Relapse Assessment and Management; Available at: http://iomsn.org/wp-content/uploads/2016/07/CP_V11N1_2016.pdf
A Patient-centered Approach to MS Management
Individualizing Treatment
**Therapeutic Options: Approved DMTs**

**Injectables**
- **GA** (Synthetic amino acid copolymer, promotes myelin)
- **IFNβ-1a, IFNβ-1b, pegylated IFNβ-1a** (Multiple immunomodulator mechanisms*)

**Oral**
- **Cladribine†** (Synthetic purine nucleoside)
- **DMF, DRF, MMF** (Target Nrf2 pathway)
- **Fingolimod, ozanimod, siponimod,† ponesimod** (S1P receptor modulators)
- **Teriflunomide** (Dihydroorotate dehydrogenase inhibitor)

**Monoclonals**
- **Alemtuzumab, natalizumab, ocrelizumab‡, ofatumumab** (Targeted biologics)

*Inhibition of T-cell activation and proliferation, and leukocyte migration across the blood-brain barrier; induction of apoptosis of autoreactive T cells and regulatory T cells; cytokine modulation; †Cladribine and siponimod approved specifically for SPMS. DMF, dimethyl fumarate; DRF, diroximel fumarate; GA, glatiramer acetate; IFN, interferon; MMF, mycophenolate mofetil; Nrf2, nuclear factor erythroid 2-related factor 2; S1P, Sphingosine-1-phosphate.
### DMT Efficacy in Phase 3 Clinical Trials

<table>
<thead>
<tr>
<th>Therapy</th>
<th>↓ Relapses</th>
<th>↓ MRI Activity</th>
<th>↓ Disability Progression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injectables</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓ *</td>
</tr>
<tr>
<td>Orals</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>Monoclonals</td>
<td>✓</td>
<td>✓</td>
<td>✓ ✓ ✓</td>
</tr>
</tbody>
</table>

*Outcome not explicitly evaluated for GA and IFNβ-1b.

Patient-centered Treatment Selection

- Relative efficacy
- Cost
- Safety & tolerability
- Monitoring
- Initial evaluation
- Dosing

Individualized Treatment
Relative Efficacy of Select DMTs for RRMS

- GA
- Interferons
- Teriflunomide
- Fumarates
- S1PR modulators
- Cladribine
- Alemtuzumab
- Natalizumab
- Anti-CD20 monoclonals

*Efficacy range within DMT class.
S1PR, sphingosine-1-phosphate receptor 1.
Impact of Early High-efficacy Treatment on MS Disability

High-efficacy therapy commenced within 2 years of disease onset is associated with less disability after 6–10 years than when commenced later in the disease course.

## Safety and Tolerability: Injectable Therapies

<table>
<thead>
<tr>
<th>Agent</th>
<th>Adverse Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA</td>
<td>• Injection site reactions, systemic/immediate post-injection reaction</td>
</tr>
<tr>
<td>IFNβ-1a</td>
<td>• Headache, flu-like symptoms, injection site pain and inflammation</td>
</tr>
<tr>
<td>IFNβ-1b</td>
<td>• Flu-like symptoms, headache, injection site reactions, injection site skin breakdown, low white blood cell count</td>
</tr>
<tr>
<td>Pegylated IFNβ-1a</td>
<td>• Flu-like symptoms, headache, injection site reactions</td>
</tr>
</tbody>
</table>

# Safety and Tolerability: Oral Therapies

<table>
<thead>
<tr>
<th>Agent</th>
<th>Adverse Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cladribine</td>
<td>• URI, headache, lymphopenia; black box warning for potential malignancy and teratogenicity risks in treated patients</td>
</tr>
<tr>
<td>MMF, DMF, DRF</td>
<td>• Flushing, GI-related (nausea, diarrhea, abdominal pain)</td>
</tr>
<tr>
<td>Fingolimod</td>
<td>• Headache, flu, diarrhea, back pain, liver enzyme elevations, sinusitis, abdominal pain, pain in extremities and cough</td>
</tr>
<tr>
<td>Ozanimod</td>
<td>• Back pain, BP changes, URI, frequent and painful urination</td>
</tr>
<tr>
<td>Siponimod</td>
<td>• Headache, HTN, and liver enzyme elevations</td>
</tr>
<tr>
<td>Teriflunomide</td>
<td>• Headache, hair thinning, diarrhea, nausea, abnormal liver tests; black box warning for potential hepatotoxicity and teratogenicity risks in treated patients</td>
</tr>
</tbody>
</table>

Teriflunomide carries a black box warning for potential hepatotoxicity and teratogenicity risks in treated patients; Cladribine carries a black box warning for potential malignancy and teratogenicity risks in treated patients. BP, blood pressure; HTN, hypertension; GI, gastrointestinal. 

## Safety and Tolerability: Monoclonals

<table>
<thead>
<tr>
<th>Agent</th>
<th>Adverse Events</th>
</tr>
</thead>
</table>
| Alemtuzumab  | • Rash, headache, fever, nasal congestion, nausea, UTI, fatigue, insomnia, upper RTI, herpes viral infections, hives, itching, thyroid gland disorders, fungal infection, pain in joints, extremities and back, diarrhea, vomiting, flushing  
  • Infusion reactions (eg, nausea, hives, itching, insomnia, chills, flushing, fatigue, shortness of breath, changes in the sense of taste, indigestion, dizziness, pain) common during and for 24 hours or more after infusion  
  • PML has occurred (1 case). |
| Natalizumab  | • Headache, fatigue, joint pain, chest discomfort, UTI, lower RTI, gastroenteritis, vaginitis, depression, pain in extremity, abdominal discomfort, diarrhea, rash  
  • PML (over 800 cases) |
| Ocrelizumab  | • Infusion reactions (most commonly itchy skin, rash, throat irritation, flushed face or fever, headache), which in rare instances may be life-threatening; increased risk of infections, including RTI and herpes infections; possible increase in malignancies, including breast cancer |
| Ofatumumab   | • Upper RTIs, injection-related (systemic) and injection-site (local) reactions, headache, UTIs, back pain  
  • As expected with B-cell depletion, decreased immunoglobulin levels have been observed |

**NOTE:** Monitoring for hypogammaglobulinemia recommended with anti-CD20s (based on rituximab data).  
PML, progressive multifocal leukoencephalopathy.
## Recommended Monitoring During Treatment: Oral and Self-Injectable Therapies

<table>
<thead>
<tr>
<th>DMT</th>
<th>CBC w/ diff</th>
<th>LFT</th>
<th>Thyroid Function Tests</th>
<th>BP</th>
<th>Cardiac Exam*</th>
<th>Eye Exam</th>
<th>Skin Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>GA</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>IFNβ-1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Teriflunomide</td>
<td>✓</td>
<td>✓</td>
<td>ALT monthly for first 6 mos</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fingolimod, siponimod, ozanimod</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓**</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DMF, DRF 6 mos after initiation, then every 6–12 mos</td>
<td>✓</td>
<td>✓</td>
<td>As clinically indicated</td>
<td>✓</td>
<td>✓**</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cladribine  At 2 mos, then every 6 mos after initiation</td>
<td>✓</td>
<td>✓</td>
<td>As clinically indicated</td>
<td>✓</td>
<td>✓**</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

*In patients with certain preexisting cardiac conditions; **For ozanimod.
ALT, alanine transaminase; CBC, complete blood count; LFT, liver function tests.
Zeposia. Prescribing Information. Celgene Corp.
### Recommended Monitoring During Treatment: Monoclonal Therapies

<table>
<thead>
<tr>
<th>Monoclonal Therapy</th>
<th>Monitoring Recommendations</th>
</tr>
</thead>
</table>
| **Alemtuzumab**   | • Skin exams & HPV screening annually  
                   • CBC, serum creatinine, & urinalysis monthly until 48 mos after last infusion  
                   • TFTs every 3 mos until 48 mos after last infusion  
                   • HIV |
| **Natalizumab**   | • JCV antibody testing every 3 months  
                   • CBC & LFTs every 6 months |
| **Ocrelizumab**   | • CBC  
                   • Lymphocyte subsets every 6 months  
                   • Immunoglobulins every 6–12 months  
                   • Comprehensive metabolic profile  
                   • HBV* |
| **Ofatumumab**    | • Immunoglobulins (especially in patients with opportunistic or recurrent infections, & after discontinuation)  
                   • HBV* |

*If indicated.

HBV, hepatitis B virus; HPV, human papillomavirus; JCV, John Cunningham virus or human polyomavirus 2; TFT, thyroid function test.

Real-world Differences in Disability and DMT Use Among Patients With RRMS by Race and Ethnicity

- NARCRMS registry December 2016–May 2020
- MS patients aged 18-50 years across 24 sites in the US and Canada (N = 722)

Disability
- Patients with EDSS ≥ 4.0
  - Blacks/AAs: 20%
  - Whites: 9.7%

DMT Use
- 57% of patients treated with DMTs
  - 50% using injectables
  - 37% using oral DMTs
- Hispanic patients less likely to use DMTs vs non-Hispanics (43% vs 62%)
- Black/AA-Hispanics least likely to use DMTs among groups evaluated (26%)

NARCAMS North American Registry for Care and Research in Multiple Sclerosis; AA, African American.
A Patient-centered Approach to MS Management

The Importance of Patient Education and Engagement
Patient and Care Partner Education

### Goals of Education
- Active patient participation (informed choices about health behaviors & competent, confident self-care)
- Maximal wellness (coping, adaptation, & empowerment toward better QoL & greater hope)
- Specific goals:
  - Understanding diagnosis & coping with life impact
  - Critical planning (eg, relationships, parenting, employment, and lifestyle)
  - Preventing disabling outcomes, with specific goals related to new symptoms

### Role of the Nurse
- Assist with activities promoting health or recovery that patients can later perform unaided
- Help individuals carry out prescribed therapy
- Contribute to behavior changes that provide knowledge & skills to maintain & improve health
- Repeatedly assess patient understanding & behavioral change
- Promote & encourage treatment adherence

QoL, quality of life.
http://iomsn.org/clinical-practice-guidelines/
**Real-world DMT Adherence and Persistence in Patients With MS**

- Systematic review of 31 studies published between January 2010 and April 2018
- 31 studies of patients with MS treated with once- and twice-daily oral DMDs (N=16,398)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>No. of studies</th>
<th>Mean (%)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall 1-year MPR</td>
<td>4</td>
<td>83.3</td>
<td>74.5–92.1</td>
</tr>
<tr>
<td>Overall 1-year PDC</td>
<td>4</td>
<td>76.5</td>
<td>72.0–81.1</td>
</tr>
<tr>
<td>Pooled 1-year MPR ≥80%</td>
<td>6</td>
<td>78.5</td>
<td>63.5–88.5</td>
</tr>
<tr>
<td>Pooled 1-year PDC ≥80%</td>
<td>5</td>
<td>71.8</td>
<td>59.1–81.9</td>
</tr>
<tr>
<td>Pooled 1-year discontinuation</td>
<td>20</td>
<td>25.4</td>
<td>21.6–29.7</td>
</tr>
</tbody>
</table>

At one year, approximately one in five patients with MS do not adhere to, and one in four discontinue, daily oral DMDs.

MPR, medication possession ratio; PDC, proportion of days covered.
<table>
<thead>
<tr>
<th>DMT characteristics</th>
<th>Ability to take DMTs as prescribed</th>
<th>Patient perceptions</th>
<th>HCP-patient relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection-related reasons (anxiety, skin reaction, pain)</td>
<td>Disease symptoms (impaired vision, poor manual dexterity, spasticity)</td>
<td>Perceived lack of medication efficacy</td>
<td>Lack of comfort in the context of the dynamic</td>
</tr>
<tr>
<td>Coping with adverse events</td>
<td>Forgetting to take medication</td>
<td>Complacency</td>
<td>Ineffective communication</td>
</tr>
<tr>
<td></td>
<td>Cognitive impairment, depression, anxiety</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Key Factors Associated With Successful Shared Decision-Making in MS

- Patients well informed about MS & treatment rationale
  - Increased adherence

- Active, dynamic communication
  - Reduced clinician-patient gaps in expectation & goals

- Taking into account of patient preferences*
  - Optimal DMT selection & adherence

- Sharing of patient preference & clinician experience
  - Effective evaluation of medication risk-benefit trade-offs

- Healthcare team-led education
  - Correction of patient misconceptions about disease & treatment

*This should include route of administration, tolerance, work environment, lifestyle.

MS Management During the Era of COVID-19
Recommendations for DMT During COVID-19

1. Patients should generally be advised to continue their current DMT.

2. Discuss therapies with patients if COVID symptoms develop or a positive test result is obtained.

3. Before starting a new DMT, discuss optimal choice based on individual circumstances:
   - MS course and activity
   - Risks and benefits normally associated with treatment options
   - Individual COVID-19 risk:
     - Other risk factors for more severe COVID-19 (e.g., age, medical comorbidities, current DMT)
     - Current and anticipated COVID-19 risk in the local area
     - Risk of exposure due to lifestyle
     - Emerging evidence on potential treatment interactions

### The Impact of DMTs on COVID-19 Severity: Current Evidence

<table>
<thead>
<tr>
<th>Agents</th>
<th>Impact on COVID-19 severity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFNs, GA, &amp; teriflunomide</td>
<td>• <strong>Unlikely</strong> to increase severity</td>
<td>• Some evidence of reduced COVID-related hospitalization for GA</td>
</tr>
<tr>
<td>Fumarates, TER, S1PR modulators, &amp; NTZ</td>
<td>• <strong>Not linked</strong> to increased severity</td>
<td></td>
</tr>
<tr>
<td>Monoclonal antibodies &amp; CLA</td>
<td>• OCR and RIX linked to increased severity • More data needed on ALZ &amp; CLA</td>
<td>• <strong>Growing evidence of risk (greater with RIX)</strong>; patients on anti-CD20’s should be especially vigilant about advice on reducing risk of COVID-19 infection • Treated patients living in close proximity to an outbreak with low lymphocyte counts should isolate to reduce risk • Patients due for additional ALZ, CLA, OCR or RIX dosing should consult HCP about risks &amp; benefits of postponing treatment</td>
</tr>
</tbody>
</table>

ALZ, alemtuzumab; CLA, cladribine; NTZ, natalizumab; OFA, ofatumumab; RIX, rituximab; TER, teriflunomide.
Impact of DMT on COVID Vaccination

- Direct data remains lacking
- Previous studies of DMT impact on immune responses:

<table>
<thead>
<tr>
<th>DMT</th>
<th>Impact on immune response</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFNβ and DMF*</td>
<td>Seroprotection preserved with multiple vaccine types</td>
</tr>
<tr>
<td>GA, TER, S1PR modulators†, &amp; NTZ</td>
<td>Seroprotection rates reduced with multiple vaccine types</td>
</tr>
</tbody>
</table>
| CLA | Protective antibody levels maintained:  
| | • ≥6m after influenza and varicella zoster vaccines, irrespective of timing relative to treatment  
| | • Independent of lymphocyte count |
| ALZ | Timing is important:  
| | • Response to prior vaccinations maintained following treatment  
| | • Delay of vaccination ≥6m after alemtuzumab treatment recommended |
| Anti-CD20s | Humoral vaccine responses significantly impaired |

*Limited data on DMF; †Based on studies of fingolimod and siponimod  
Ciotti et al. Mult Scler Relat Disord. 2020;45:102439; Bar-Or. ACTRIMS 2021; CE1.2; Wu et al. ACTRIMS 2021; P071; Roy et al. ACTRIMS 2021; P059.
COVID-19 Therapy for Patients with MS

- **Remdesivir** is indicated for adults and pediatric patients (≥ 12 YOA and weighing ≥ 40 kg) for treatment of COVID-19 requiring hospitalization.
- Other treatments given EUA by the FDA for patients meeting specific criteria, including MS:
  - Monoclonal therapies: casirivimab + imdevimab and bamlanivimab
  - Accumulating data in support of positive impact on outcomes
- For patients with MS who become infected with COVID-19 and meet criteria for pharmacologic treatment, individual risk factors (including current DMT use) will drive therapeutic decision-making.

EUA, emergency use authorization
Case Evaluations
Case Study # 1: Patient Description

Kevin is 35-year-old high school teacher. He lives with his wife and twin 4-year-old sons. He is generally very active and participates in road races several times a year. He is in the office today for symptoms that include a noticeable increase in fatigue over the past several weeks, blurred vision in his left eye, and tingling in his hands and feet. He has no prior medical history that would appear to account for his symptoms.
Case Study # 1: Discussion Question

Which of the following should be included as part of Kevin’s workup?

A. MRI
B. CSF analysis
C. JCV antibody test
D. CBC
E. BMP
Case Study # 1: Discussion Question

Kevin’s MRI and labs reveal a total of 3 T2 lesions (1 on his spine and 1 of which was Gd-enhancing). CSF analysis reveals the presence of oligoclonal bands and OCT confirms optic neuritis. His other labs are within normal limits. Based on these findings, he is diagnosed with RRMS. How would you characterize his risk for aggressive disease?

A. Low
B. Moderate
C. High
D. Not sure
Case Study # 1: Discussion Question

During your conversation about his diagnosis, Kevin confides that he feels overwhelmed by the number of treatment options and has several questions about their effectiveness and safety. After assuring him that this is not at all unexpected, how do you address his concerns?

A. Attempt to allay his anxiety by answering his questions in detail
B. Provide him with a broad overview of the different therapies
C. Schedule a dedicated follow-up appointment to discuss treatments
Case Study # 1: Discussion Question

Which of the following do you think is an appropriate DMT for Kevin?

A. Glatiramer acetate
B. An interferon-based therapy
C. DRF or DMF
D. A S1P receptor modulator
E. A targeted biologic
Case Study #2: Patient Description

Marisol is 45-year-old woman with a 12-year history of RRMS. She is currently being treated with GA. She is the manager of a local grocery store and lives with her adult niece. During her regular follow-up visit, she reports that over the last 6 months, she has experienced a gradual increase in difficulty with her endurance and balance. Exam reveals new proximal leg weakness, mild tandem unsteadiness.
Case Study #2: Discussion Question

After further evaluation, you diagnose Marisol with SPMS. Which of the following DMTs is an appropriate treatment in light of this new diagnosis?

A. DMF
B. Teriflunomide
C. Cladribine
D. Siponimod
Case Study #2: Discussion Question

Given the current pandemic, would you elect to begin a new therapy immediately?

A. Yes. Evidence indicates little additional COVID-related risk associated with treatments for SPMS.

B. No. Evidence suggests that switching therapies would engender additional risk of infection.

C. No. There is insufficient evidence to support the safety of switching therapies during the pandemic.
Case Study #2: Discussion Question

Once Marisol begins a new treatment regimen. How long would you wait before scheduling a follow-up visit to evaluate her treatment response?

A. 1 month
B. 2 months
C. 3 months
D. 6 months
Program Summary

- Nurses involved in the care of patients with MS shoulder a broad range of responsibilities beyond clinical care, including patient advocacy, research, collaboration with the multidisciplinary healthcare team, and patient and care partner education.

- Primary care nurses are often the first point of contact for patients with any type of motor, sensory, or cognitive deficit, and are thus well situated to facilitate early recognition of an MS attack.

- This is especially important in light of growing recognition of the need for early effective treatment, and the recent expansion of DMTs with the potential to reduce disease progression as well as improve symptoms.

- By providing patient-centered care that includes education and management guidance, nurses can help ensure that patients are equipped to participate in decision-making and achieve optimal therapeutic success.
Thank You!