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SUMMIT Rewind provides summaries of key sessions from NCODA’s annual Fall Summit written by members of Professional Student Organization (PSO) chapters from across North America. To view presentation slides, scan the QR code at the end of each summary.

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patients received a combination of HER2-directed therapies in recent years. In the HER2CLIMB study, randomized to neoadjuvant treatment and then continued as adjuvant treatment after surgery. Based on KEYNOTE-522, the indication for pembrolizumab was converted from accelerated to full approval. While adverse effects (AEs) with chemotherapy are generally short-lived, some patients on immunotherapy can experience longer AEs.

Telli outlined the use of PARP inhibitors in both early-stage and metastatic BRCA1/2 associated breast cancer. In 2018, the FDA approved two PARP inhibitors for breast cancer therapy: olaparib and talazoparib. Trials for both drugs were discussed, as well as the Phase III BROCADE 3 Trial for veliparib. Also discussed were PARP inhibitor resistance considerations and the use of talazoparib in other cancer therapies.

**SUMMIT Rewind**

**National Experts’ Perspectives: State of the Art Breast Cancer Treatment in 2021**

**MODERATOR:** Xylina Gregg, MD | Utah Cancer Specialists

**PRESENTERS:** William Gradishar, MD, FASCO, FACP | Northwestern Comprehensive Cancer Center; Virginia Kaklamani, MD | UT Health San Antonio; Melinda Telli, MD | Stanford Health Care

**SYNOPSIS:** The program focused on the latest developments in the treatment of HER2-positive metastatic breast cancer (MBC) and triple-negative breast cancer (TNBC), as well as the use of PARP inhibitors in breast cancer.

**PRESENTATION:** Kaklamani noted that there has been a dramatic improvement in outcomes involving advancements in HER2-directed therapies in recent years. In the HER2CLIMB study, randomized previously-treated HER2-positive MBC patients received a combination of capecitabine, trastuzumab, and the addition of either tucatinib or placebo. The majority of patients given tucatinib responded to treatment, and also showed a “clinically significant” increase in both median progression free survival (PFS) and median overall survival (OS).

The DESTINY-Breast03 Trial compared trastuzumab deruxtecan (T-DXd) to trastuzumab emtansine (T-DM1). Patients on T-Dxd experienced a significant improvement in PFS: 25.1 months vs. 7.2 months for patients on T-DM1. The study revealed a hazard ratio of only 0.28, “probably the most impressive we’ve seen in breast cancer in a very long time,” Kaklamani said.

Gradishar outlined existing strategies for TNBC, noting that the addition of platinum typically increased pathological complete response rates by about 15% across the spectrum, though disease-free survival rates can still vary widely. The Federal Drug Administration (FDA) recently approved pembrolizumab for high-risk early-stage TNBC with chemotherapy as neoadjuvant treatment and then continued as adjuvant treatment after surgery. Based on KEYNOTE-522, the indication for pembrolizumab was converted from accelerated to full approval. While adverse effects (AEs) with chemotherapy are generally short-lived, some patients on immunotherapy can experience longer AEs.

Telli outlined the use of PARP inhibitors in both early-stage and metastatic BRCA1/2 associated breast cancer. In 2018, the FDA approved two PARP inhibitors for breast cancer therapy: olaparib and talazoparib. Trials for both drugs were discussed, as well as the Phase III BROCADE 3 Trial for veliparib. Also discussed were PARP inhibitor resistance considerations and the use of talazoparib in other cancer therapies.

**Oncology Biosimilars: Educating the Oncology Health Care Team to Facilitate Implementation into Clinical Practice**

**PRESENTER:** Megan May, PharmD, BCOP | Baptist Health System

**SYNOPSIS:** May discussed the barriers to implementing biosimilars into clinical practice and how to overcome them.

**PRESENTATION:** May provided background on biosimilar use in clinical practice and emphasized that it is here to stay. May said biosimilars are a great therapy option as they are validated by the FDA to have similar safety, pharmacokinetic/pharmacodynamic (PK/PD) modeling and immunogenicity profiles as their reference products. May discussed common challenges that oncology health care teams might face when trying to implement biosimilar use into clinical practice.

Some of these barriers include:


To overcome some of these barriers, May suggested connecting with the pharmacy and therapeutics (P&T) committees of the organization to look at scientific reviews, financial and coverage assessments, along with operational assessments (i.e., physical storage).

Additionally, it is important to provide educational materials to members of the healthcare team as well as patients, have conversations with providers about the interchangeability and substitution processes, generate weekly reports with their use, talk about the safety profile and discuss administrative practices (i.e., Neulasta® Onpro injectors vs. syringes).

By having these discussions prior to implementation, practices may overcome barriers before they become a real issue.

**DISCUSSION:**

**Q:** How have you measured success from biological switches?

**A:** Measurement of success is the next aspect of implementation that May is working on. She said she hopes to be able to order preferred biosimilars and have a team that helps to track every patient while they are using a biosimilar.

**TAKEAWAY POINTS:**

- Biosimilars are here to stay.
- Educate your team and patients about the benefits of biosimilars.
- Work with P&T committees to assist in successful implementation.

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

Summary by Melanie Hendricks, PharmD Candidate (2022), South College School of Pharmacy.

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

Summary by Madison Motzner, PharmD Candidate (2022), Washington State University College of Pharmacy and Pharmaceutical Sciences.
New Updates in CAR-T Cellular Therapy

**PRESENTER:** Stephen H. Wrzesinski, MD, PhD | New York Oncology Hematology

**SYNOPSIS:** Wrzesinski, Director of Immuno-Oncology and Cellular Therapies, discussed recent updates in Immuno-Effecter Cell Therapies (IEC) by outlining the history of IEC therapy, leading to the FDA approval of the only chimeric antigen receptor T-cell (CAR-T) therapy available in the outpatient setting. He also discussed toxicities associated with IEC therapy and how to manage them, as well as important considerations for implementing outpatient CAR-T therapy. Wrzesinski concluded with other novel IEC therapies that may lead to future outpatient cell therapies.

**PRESENTATION:** Wrzesinski provided an overview of IEC therapies, starting with Tumor Infiltrating Lymphocyte Technology and how this led to advancements in IEC therapies such as the development of CAR-T therapy and other novel cell therapy approaches. He also discussed the current FDA-approved CAR-T therapies, including the only FDA-approved outpatient CAR-T therapy: Breyanzi® (lisocabtagene maraleucel).

Wrzesinski utilized clinical trial data from multiple studies (ELIANA, JULIET, ZUMA 1, TRANSCEND-NHL 001, TRANSCEND-OUTREACH-007) to highlight important toxicities associated with IEC therapy, such as Cytokine Release Syndrome (CRS) and Immune Effector-Cell Associated Neurotoxicity Syndrome (ICANS), as well as strategies to manage CRS and ICANS.

Wrzesinski detailed New York Oncology Hematology (NYOH) and its participation in a study to examine the viability of using cell therapies in the outpatient setting. Using strategies implemented by NYOH, he concluded that clinical and financial infrastructure changes must be in place to effectively implement outpatient cell therapy.

Finally, Wrzesinski presented promising novel IEC therapies, such as CAR-NK, which are currently under evaluation as potential future cell therapy options.

**TAKEAWAY POINTS:**

- Novel IEC therapies show promising toxicity profiles that may lead to more cell therapies in outpatient settings.

Summary by Dave Bello, PharmD Candidate (2023), University of Minnesota College of Pharmacy.

Drug Interactions for Oncology Management: Navigating IV and Oral Therapies

**PRESENTERS:** Alicia Barnes, CPhT | AON Pharmacy; Stephanie Matta, PharmD, BCOP | St. Luke’s Cancer Institute

**SYNOPSIS:** The presentation focused on how patients are at an increased risk of drug-drug interaction (DDI) with oral oncolytics.

**PRESENTATION:** A patient’s age, drug clearance, comorbidities, supportive care and over-the-counter medications are all contributing factors to a potential DDI.

Oral oncolytics are more likely to cause DDIs due to their dosing schedule. Also, oral anticancer medications often are utilized in combination regimens, which has a direct correlation with the risk of an interaction.

In some cases, DDIs can decrease efficacy of a patient’s medications and increase the occurrence of toxicities. Therefore, the detection and management of DDIs are crucial in cancer care.

Matta identified the most common DDI-related adverse effects seen with oral oncolytics. These include QTc prolongation, antiocoagulation, enzyme inhibition/induction and acid suppression.

Along with analyzing each interaction and providing examples of possible drugs involved, Matta incorporated management of these interactions into her presentation.

For example, certain QTc-prolonging tyrosine kinase inhibitors (TKIs), such as osimertinib or nilotinib, can enhance the QTc-prolonging potential of first-generation antipsychotics.

When a patient is on both therapies, management should include baseline and follow-up EKGs, electrolyte monitoring/replacement, and even discontinuation or substitution of agents.

The role of the pharmacy team should include the pharmacist performing medication therapy management (MTM), counseling patients on DDI potential, recommending dose adjustments or therapy changes to multidisciplinary team members, assisting with prior authorizations and providing assistance with financial concerns.

**TAKEAWAY POINTS:**

- Oral oncolytics are more likely to cause DDIs due to their dosing schedule and because they are often taken in combination with IV regimens.
- Detection and management of DDIs can prevent toxicities and improve outcomes in patients with cancer.

Summary by Emily Buis, PharmD Candidate (2022), Regis University School of Pharmacy.

SESSION SLIDES: Scan the QR code at right to view slides from this presentation.
Evolving Treatment Strategies for Adjuvant & Metastatic Melanoma: A Multidisciplinary Approach to Care

**PRESENTER:** Megan May, PharmD, BCOP | Baptist Health System

**SYNOPSIS:** May touched on many topics about melanoma, including treatment and care in the adjuvant, advanced, and metastatic settings.

**PRESENTATION:** May noted that melanoma has accounted for 5.6% of new cancer cases in 2021 so far, making it the fifth most common cancer. However, the five-year overall survival rate is as high as 93.3%. Some prognostic determinants of five-year survival include stage of disease at first presentation, tumor thickness, ulceration, site of recurrence and response to initial therapy for the recurrence. Treatment options in the adjuvant setting include nivolumab, pembrolizumab, dabrafenib + trametinib and observation.

With each option, May included current literature that compared the safety and efficacy of each of these agents and described ongoing trials.

May talked about first-line treatment agents for advanced and metastatic melanoma. She discussed ways of incorporating more efficacy and safety trials, as well as ongoing investigations for the therapies. Adverse effects also were discussed.

She concluded by discussing toxicity management and patient adherence. Immune-related adverse events (irAEs) can occur up to a year after treatment completion or discontinuation. It is essential for pharmacists to provide education to patients for prompt identification of moderate and/or severe irAEs.

Oral chemotherapy adherence rates are not always perfect, but they are reported to be improving through utilization of pharmacist-led chemotherapy management programs.

**TAKEAWAY POINTS:**

- Ipilimumab, pembrolizumab and nivolumab are recent immunotherapy advances that show a durable response in some patients with melanoma.
- Continued research in melanoma is necessary to provide better therapeutic options.

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Exploring Strategies for Treating Solid Tumors with PARP Inhibitors

**PRESENTER:** Jason Bergsbaken, PharmD, MBA, BCOP | UW Health

**SYNOPSIS:** Bergsbaken discussed how the nuanced therapeutic considerations of PARP inhibitors highlight the strategic role of healthcare practitioners in cancer therapy.

**PRESENTATION:** PARP inhibitors trap PARP, a DNA repair enzyme, and inhibit cancer cell proliferation. The resultant double-stranded (ds) DNA breakage leads to cell death. Some patients possess deficient dsDNA repair mechanisms such as homologous recombination deficiencies (HRD) that confer sensitivity to PARP inhibitor therapy. Notable HRDs are BRCA1 and BRCA2 mutations, but also RAD51, ATM and more.

**Ovarian Cancer:** Niraparib, olaparib and rucaparib are FDA-approved for first-line/second-line maintenance therapy after platinum-based chemotherapy, and recurrent/metastatic cancer (except rucaparib). Some indications require s/gBRCAm or HRD requirements. Interestingly, subgroup analyses revealed better outcomes in BRCA-mutant populations versus other HRD mutations. The longer progression-free survival (PFS) in first-line maintenance versus recurrent/metastatic guides clinicians to consider earlier initiation.

**Breast Cancer:** Olaparib and talazoparib are FDA-approved for gBRCAm, HER2-negative metastatic breast cancer. The OlympiAD trial (olaparib) showed improved PFS (three months) versus standard chemotherapy but no overall survival (OS) benefit. The EMBRACA (talazoparib) trial showed similar outcomes.

**Pancreatic Cancer:** The POLO trial (olaparib) established improved PFS versus placebo in gBRCA+ metastatic patients. However, no OS/QOL benefit and higher grade 3/4/5 AE incidence.

**Prostate Cancer:** Olaparib and rucaparib are FDA-approved for metastatic castrate-resistant prostate cancer (CRPC) with g/sBRCAm following progression despite chemotherapy.

**Adverse Event Management:** Although dependent on population/study, many patients required dose reduction (up to ~60%) or discontinuation (~15%). Class effects include anemia, cytopenia and fatigue. Cytopenia severity correlated with PARP-trapping potency (T>N>O>R). Agent-specific toxicities also were discussed.

**DISCUSSION:**

**Q:** How is myelosuppression managed?  
**A:** Hold dose, grade myelosuppression, then restart at lower dose once recovered.

**TAKEAWAY POINTS:**

- BRCA/HRD mutations play unique roles in PARP inhibitor therapy.
- Clinical strategies can maximize efficacy/safety while minimizing non-adherence.

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**SUMMIT Rewind**

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

**Summary by Jake Boan, PharmD Candidate (2023), University of Missouri-Kansas City.**

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

**Summary by Song Min Lee, PharmD Candidate (2022), University of Toronto Leslie Dan Faculty of Pharmacy.**

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**Summary by Song Min Lee, PharmD Candidate (2022), University of Toronto Leslie Dan Faculty of Pharmacy.**
The Evolution of Telehealth Services Within Oncology

**PRESENTERS:** Bobbi Buell, MBA | onPoint Oncology; Raquel Rhone, PharmD | Texas Oncology

**SYNOPSIS:** Rhone discussed the importance of telehealth services in oncology through the implementation of telepharmacy services at Texas Oncology. Buell discussed the aspects of CMS, billing and coding in telepharmacy services.

**PRESENTATION:** The American Society of Health-System Pharmacists (ASHP) defines telepharmacy as “a method where pharmacists utilize telecommunications to oversee aspects of pharmacy operations or provide patient care services.”

The COVID pandemic has increased the incidence of virtual physician office visits and has allowed telepharmacy services to take precedence over in-person visits.

Because of this trend, Texas Oncology developed a telepharmacy pilot program for oncology patients.

The project honed in on important parts of developing telepharmacy services, such as initial engagement with leadership and pharmacists to develop a collaborative support team, billing of services or extension of services, etc. Along with the implementation of telepharmacy services, billing and coding for telehealth services have changed.

Buell discussed in great detail the various aspects of billing and coding in telehealth that have changed during the COVID-19 pandemic.

Overall, the implantation of telepharmacy services requires a multitude of resources and teamwork through the leadership and pharmacy team, and a thorough understanding of the billing and coding process. The implementation of these services will be of utmost importance in the future.

The presenters emphasized in their discussion that "remote services are here to stay. Do not forget about them."

**TAKEAWAY POINTS:**
- During the COVID-19 pandemic, telepharmacy services began to take precedence over in-person visits.
- Telepharmacy services have various important factors that need to be developed to successfully implement this service.
- The COVID pandemic has caused changes that healthcare teams must be aware of in order to correctly bill and code for telehealth services.

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Putting Positive Quality Interventions Into Action: Consistent Clinical Standards & NCODA Resources for Medically Integrated Teams

**PRESENTERS:** Sophia Alfonso, PharmD, BCACP | Moffitt Cancer Center; Lori Brisbin, MS | Texas Oncology; Meg Butler, PharmD | Clearview Cancer Institute; Jen Hasiak, PharmD | Hematology & Oncology Consultants; Stacey McCullough, PharmD | Tennessee Oncology; Brian Meger, PharmD | Minnesota Oncology; Brian O’Keefe, PharmD, BCOP | Trellis RX at Parkview Cancer Institute

**SYNOPSIS:** The panelists described a variety of NCODA tools and resources.

**PRESENTATION:** O’Keefe discussed Oral Chemotherapy Education (OCE) sheets and IV Cancer Treatment Education (IVE) sheets. These supplemental sheets focus on topics that need to be commonly addressed during formal education.

McCullough showcased the positive impact of NCODA Treatment Support Kits (TSK). These FDA-registered kits offer products and education for patients and caregivers. Hasiak highlighted Positive Quality Interventions. She noted there currently are 62 oral and IV therapy PQIs, nine supportive care PQIs, and four disease-state PQIs.

The panel also discussed PQI in Action, focusing on the enzalutamide and selpercatinib articles.

**DISCUSSION:**

**Q:** How do you follow up with a patient who is on an oral oncolytic that is required to use a mail-order pharmacy without delaying the filing process? **A:** Butler said Clearview Cancer Institute has created a patient advocate team to track prescriptions that leave their facility when transferred to a mail-order pharmacies. The team reaches out to help if there are any issues with insurance or copays, and then follows the prescription until it is in the patient’s hands.

Meger said Minnesota Oncology has a pharmacy concierge team that helps with prior authorizations and offers patient assistance for mail-order pharmacies.

**TAKEAWAY POINTS:**
- Those interested in getting involved in OCE sheets can contact Brian O’Keefe, PharmD, BCOP, via email at Brian.OKeefe@parkview.com or Julianne Darling, PharmD, BCOP, at Julianne.Darling@ncoda.org.
- Those interested in contributing to the NCODA PQI in Action initiative can contact Ginger Blackmon, PharmD, at Ginger.Blackmon@ncoda.org.
- Those interested in contributing to the PQI initiative can contact Natasha Olson, PharmD, at Natasha.Olson@ncoda.org.

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Summary by Fay Ansary, PharmD Candidate (2022), East Tennessee State University-Bill Gatton College of Pharmacy.

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

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Summary by Jonathan Rivera, PharmD Candidate (2023), University of North Texas Health Science Center.

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.
SET OUT TOWARDS A FUTURE
THE ONLY APPROVED
DUAL I-O MAY DELIVER¹*
Checkmate 227: In a cross-histology trial for patients with mNSCLC (PD-L1 ≥1%),

**Durable survival** with OPDIVO + YERVOY: 29% of patients alive at 4 years^{4*}

OS for PD-L1 ≥1% (extended follow-up analysis)^{1,3,5}

![Graph showing overall survival and median OS]

- Median PFS with a median follow-up of 54.8 months was 5.1 months (95% CI: 4.1–6.3) with OPDIVO + YERVOY and 5.6 months (95% CI: 4.6–5.8) with chemo alone; HR=0.81; 95% CI: 0.68–0.96^{4}

- 29% of patients enrolled had SQ disease; 71% had NSQ disease^{6}

**SELECT IMPORTANT SAFETY INFORMATION**

**Serious Adverse Reactions**
- In Checkmate 227, serious adverse reactions occurred in 58% of patients (n=576). The most frequent (≥2%) serious adverse reactions were pneumonia, diarrhea/colitis, pneumonitis, hepatitis, pulmonary embolism, adrenal insufficiency, and hypophysitis. Fatal adverse reactions occurred in 1.7% of patients; these included events of pneumonitis (4 patients), myocarditis, acute kidney injury, shock, hyperglycemia, multi-system organ failure, and renal failure.

**Common Adverse Reactions**
- In Checkmate 227, the most common (≥20%) adverse reactions were fatigue (44%), rash (34%), decreased appetite (31%), musculoskeletal pain (27%), diarrhea/colitis (26%), dyspnea (26%), cough (23%), hepatitis (21%), nausea (21%), and pruritus (21%).

Please see additional Important Safety Information for OPDIVO and YERVOY throughout and accompanying brief summary of US Full Prescribing Information for OPDIVO and YERVOY on the following pages.
Checkmate 9LA: For r/m NSCLC patients, regardless of PD-L1 expression and histology

Durable survival with OPDIVO® (nivolumab) + YERVOY® (ipilimumab) with limited chemo* vs chemo: 38% of ITT patients alive at 2 years1,7†

Overall survival (ITT)1,7

![Overall survival graph](image)

**Median OS**

- **Initial pre-specified interim analysis (minimum follow-up 8.1 months)**
  - OPDIVO + YERVOY (n=361): 14.1 mos (95% CI: 13.2–16.2)
  - Chemo (n=358): 10.7 mos (95% CI: 9.5–12.5)
  - HR=0.69 (96.71% CI: 0.55–0.87; P=0.0006)

- **Extended follow-up analysis (minimum follow-up 24.4 months)**
  - OPDIVO + YERVOY (n=361): 14.1 mos (95% CI: 13.2–16.2)
  - Chemo (n=358): 10.7 mos (95% CI: 9.5–12.5)
  - HR=0.72 (95% CI: 0.61–0.86)

**Number at risk**

- OPDIVO + YERVOY + chemo = 361
- Chemo = 358

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Minimum follow-up of 24.4 months.7

- Efficacy results from the pre-specified interim analysis when 351 events were observed (87% of the planned number of events for final analysis) with an 8.1-month minimum follow-up.8
- Median PFS at the 23.3-month minimum follow-up: 6.7 months (95% CI: 5.6–7.8) with OPDIVO + YERVOY with chemo and 5.3 months (95% CI: 4.4–5.6) with chemo alone; HR=0.57 (96.71% CI: 0.56–0.79).8
- ORR at the 6.5-month minimum follow-up: 38% (95% CI: 33–43) with OPDIVO + YERVOY with chemo and 25% (95% CI: 21–30) with chemo.8
- Median OS at the 24.4-month follow-up analysis: 15.8 months (95% CI: 13.9–19.7) with OPDIVO + YERVOY with chemo and 11.0 months (95% CI: 9.5–12.7) with chemo; HR=0.72 (95% CI: 0.61–0.86).7

- 32% of patients enrolled had SQ disease; 68% had NSQ disease.7

**Study design**: Checkmate 9LA was a randomized (1:1), open-label phase 3 study of OPDIVO 360 mg q3w in combination with YERVOY 1 mg/kg q6w and 2 cycles of histology-based chemotherapy1 versus 4 cycles of platinum-doublet chemotherapy1 as a first-line treatment in patients with metastatic or recurrent NSCLC, regardless of histology or PD-L1 status. Key eligibility criteria included patients 18 years or older, stage IV or recurrent NSCLC, ECOG PS 0/1 and no prior systemic anticancer therapy. Patients with known EGFR mutations or ALK translocations sensitive to available targeted inhibitor therapy, untreated brain metastases, carcinomatous meningitis, active autoimmune disease, or medical conditions requiring systemic immunosuppression were excluded from the study. Treatment continued until disease progression, unacceptable toxicity, or for up to 2 years. Patients were stratified by histology (SQ vs NSQ), PD-L1 (<1% vs ≥1%), and sex. The primary endpoint was OS. Additional efficacy outcome measures were PFS, ORR, and DOR.1

*Two cycles of platinum-doublet chemo.1

†In the intent-to-treat population vs chemo. In Checkmate 9LA, patients received 2 cycles of platinum-doublet chemo q3w in the experimental arm, and 4 cycles in the comparator arm; NSQ: pemetrexed + carboplatin or cisplatin (optional pemetrexed maintenance therapy in comparator arm only); SQ: paclitaxel + carboplatin.1

In Checkmate 9LA, patients in the comparator arm received 4 cycles of platinum-doublet chemo q3w; NSQ: pemetrexed + carboplatin or cisplatin (optional pemetrexed maintenance therapy in the comparator arm only); SQ: paclitaxel + carboplatin.1

**SELECT IMPORTANT SAFETY INFORMATION**

**Serious Adverse Reactions**
- In Checkmate 9LA, serious adverse reactions occurred in 57% of patients (n=358). The most frequent (>2%) serious adverse reactions were pneumonia, diarrhea, febrile neutropenia, anemia, acute kidney injury, musculoskeletal pain, dyspnea, pneumonitis, and respiratory failure. Fatal adverse reactions occurred in 7 (2%) patients, and included hepatic toxicity, acute renal failure, sepsis, pneumonitis, and diarrhea with hypokalemia, and massive hemoptysis in the setting of thrombocytopenia.

**Common Adverse Reactions**
- In Checkmate 9LA, the most common (>20%) adverse reactions were fatigue (49%), musculoskeletal pain (39%), nausea (32%), diarrhea (31%), rash (30%), decreased appetite (28%), constipation (21%), and pruritus (21%).
OPDIVO + YERVOY with limited chemo* (extended follow-up analysis)

**OS: PD-L1 <1%**
- **Initial pre-specified interim analysis (minimum follow-up 8.1 months)**
  - OPDIVO + YERVOY + chemo (n=129) --- 10.0 mos (95% CI: 7.7–13.7)
  - HR=0.65 (95% CI: 0.46–0.92)
- **Minimum follow-up of 24.4 months**
  - HR=0.67 (95% CI: 0.51–0.89)

**OS: PD-L1 ≥1%**
- **Initial pre-specified interim analysis (minimum follow-up 8.1 months)**
  - OPDIVO + YERVOY + chemo (n=204) --- 14.2 mos (95% CI: 13.1–13.7)
  - HR=0.70 (95% CI: 0.56–0.89)
- **Minimum follow-up of 24.4 months**
  - HR=0.67 (95% CI: 0.51–0.89)

Minimum follow-up of 24.4 months.7

**Limitation:** Checkmate 9LA was not powered to detect differences in the treatment effect in PD-L1 subgroups; therefore, results from this exploratory analysis should be interpreted with caution because of the limited patient numbers and potential imbalances in baseline characteristics within the subgroup.

- Primary analysis in the ITT population at the 8.1-month minimum follow-up: median OS was 14.1 months (95% CI: 13.2–16.2) with OPDIVO + YERVOY with chemo vs 10.7 months (95% CI: 9.5–12.5) with chemo alone; HR=0.69 (96.71% CI: 0.55–0.92); P=0.0006.7-8
- At the 24.4-month minimum follow-up, median OS for PD-L1 <1% was 17.7 months (95% CI: 13.7–20.3) with OPDIVO + YERVOY with limited chemo and 9.8 months (95% CI: 7.7–13.5) with chemo; HR=0.67 (95% CI: 0.51–0.89).7
- At the 24.4-month minimum follow-up, median OS for PD-L1 ≥1% was 15.8 months (95% CI: 13.8–22.2) with OPDIVO + YERVOY with limited chemo and 10.9 months (95% CI: 9.5–13.2) with chemo; HR=0.70 (95% CI: 0.56–0.89).7

*Two cycles of platinum-doublet chemo.1

**SELECT IMPORTANT SAFETY INFORMATION**

Severe and Fatal Immune-Mediated Adverse Reactions (cont’d)
- Immune-mediated adverse reactions, which may be severe or fatal, can occur in any organ system or tissue. While immune-mediated adverse reactions usually manifest during treatment, they can also occur after discontinuation of OPDIVO or YERVOY. Early identification and management are essential to ensure safe use of OPDIVO and YERVOY. Monitor for signs and symptoms that may be clinical manifestations of underlying immune-mediated adverse reactions. Evaluate clinical chemistries including liver enzymes, creatinine, adrenocorticotropic hormone (ACTH) level, and thyroid function at baseline and periodically during treatment with OPDIVO and before each dose of YERVOY. In cases of suspected immune-mediated adverse reactions, initiate appropriate workup to exclude alternative etiologies, including infection. Institute medical management promptly, including specialty consultation as appropriate.
- Withhold or permanently discontinue OPDIVO and YERVOY depending on severity (please see section 2 Dosage and Administration in the accompanying Full Prescribing Information). In general, if OPDIVO or YERVOY interruption or discontinuation is required, administer systemic corticosteroid therapy (1 to 2 mg/kg/day prednisone or equivalent) until improvement to Grade 1 or less. Upon improvement to Grade 1 or less, initiate corticosteroid taper and continue to taper over at least 1 month. Consider administration of other systemic immunosuppressants in patients whose immune-mediated adverse reactions are not controlled with corticosteroid therapy. Toxicity management guidelines for adverse reactions that do not necessarily require systemic steroids (e.g., endocrinopathies and dermatologic reactions) are discussed below.

Please see additional Important Safety Information for OPDIVO and YERVOY throughout and accompanying brief summary of US Full Prescribing Information for OPDIVO and YERVOY on the following pages.
Nivolumab (OPDIVO®) + ipilimumab (YERVOY®) and nivolumab (OPDIVO) + ipilimumab (YERVOY) + platinum-doublet chemotherapy* are recommended as first-line options in metastatic non-small cell lung cancer.

NCCN CATEGORY 1

Useful in certain circumstances

Nivolumab (OPDIVO®) + ipilimumab (YERVOY®)
PD-L1 ≥1%

Nivolumab (OPDIVO) + ipilimumab (YERVOY) with platinum-doublet chemotherapy*
PD-L1 <1% and PD-L1 ≥1%

NCCN CATEGORY 1

Other recommended

● Nivolumab (OPDIVO) + ipilimumab (YERVOY) is recommended as a Category 1, useful in certain circumstances, first-line therapy option for eligible patients with metastatic NSCLC with PD-L1 ≥1% and performance status 0–2 (V5.2021), in tumors that are EGFR, ALK, ROS1, BRAF V600E, NTRK1/2/3, METex14, and RET negative, and no contraindications to PD-1 or PD-L1 inhibitors.

● Nivolumab (OPDIVO) + ipilimumab (YERVOY) + platinum-doublet chemotherapy* is recommended as a Category 1, other recommended first-line therapy option for eligible patients with metastatic NSCLC regardless of PD-L1 expression and performance status 0–1 (PD-L1 <1%) or 0–2 (PD-L1 ≥1%) (V5.2021), in tumors that are EGFR, ALK, ROS1, BRAF V600E, NTRK1/2/3, METex14, and RET negative, and no contraindications to PD-1 or PD-L1 inhibitors.

Please see updated NCCN Guidelines® for a complete listing of all NCCN-recommended agents, including preferred options. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way.

SELECT IMPORTANT SAFETY INFORMATION

Severe and Fatal Immune-Mediated Adverse Reactions

Immune-Mediated Pneumonitis

● OPDIVO and YERVOY can cause immune-mediated pneumonitis. The incidence of pneumonitis is higher in patients who have received prior thoracic radiation. In NSCLC patients receiving OPDIVO 3 mg/kg every 2 weeks with YERVOY 1 mg/kg every 6 weeks, immune-mediated pneumonitis occurred in 9% (50/576) of patients, including Grade 4 (0.5%), Grade 3 (3.5%), and Grade 2 (4.0%). Four patients (0.7%) died due to pneumonitis.

Immune-Mediated Colitis

● OPDIVO and YERVOY can cause immune-mediated colitis, which may be fatal. A common symptom included in the definition of colitis was diarrhea. Cytomegalovirus (CMV) infection/reactivation has been reported in patients with corticosteroid-refractory immune-mediated colitis. In cases of corticosteroid-refractory colitis, consider repeating infectious workup to exclude alternative etiologies.

Immune-Mediated Hepatitis and Hepatotoxicity

● OPDIVO and YERVOY can cause immune-mediated hepatitis.

Immune-Mediated Endocrinopathies

● OPDIVO and YERVOY can cause primary or secondary adrenal insufficiency, immune-mediated hypophysitis, immune-mediated thyroid disorders, and Type 1 diabetes mellitus, which can present with diabetic ketoacidosis. Withhold OPDIVO and YERVOY depending on severity (please see section 2 Dosage and Administration in the accompanying Full Prescribing Information). For Grade 2 or higher adrenal insufficiency, initiate symptomatic treatment, including hormone replacement as clinically indicated. Hypophysitis can present with acute symptoms associated with mass effect such as headache, photophobia, or visual field defects. Hypophysitis can cause hypopituitarism; initiate hormone replacement as clinically indicated. Thyroiditis can present with or without endocrinopathy. Hyperthyroidism can follow hyperthyroidism; initiate hormone replacement or medical management as clinically indicated. Monitor patients for hyperglycemia or other signs and symptoms of diabetes; initiate treatment with insulin as clinically indicated.
SELECT IMPORTANT SAFETY INFORMATION

Severe and Fatal Immune-Mediated Adverse Reactions

Immune-Mediated Nephritis with Renal Dysfunction

- OPDIVO and YERVOY can cause immune-mediated nephritis.

Immune-Mediated Dermatologic Adverse Reactions

- OPDIVO can cause immune-mediated rash or dermatitis. Exfoliative dermatitis, including Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis (TEN), and drug rash with eosinophilia and systemic symptoms (DRESS) has occurred with PD-1/PD-L1 blocking antibodies. Topical emollients and/or topical corticosteroids may be adequate to treat mild to moderate nonexfoliative rashes.

- YERVOY can cause immune-mediated rash or dermatitis, including bullous and exfoliative dermatitis, SJS, TEN, and DRESS. Topical emollients and/or topical corticosteroids may be adequate to treat mild to moderate non-bullous/exfoliative rashes.

- Withhold or permanently discontinue OPDIVO and YERVOY depending on severity (please see section 2 Dosage and Administration in the accompanying Full Prescribing Information).

Other Immune-Mediated Adverse Reactions

- The following clinically significant immune-mediated adverse reactions occurred at an incidence of <1% (unless otherwise noted) in patients who received OPDIVO monotherapy or OPDIVO in combination with YERVOY or were reported with the use of other PD-1/PD-L1 blocking antibodies. Severe or fatal cases have been reported for some of these adverse reactions: cardiovascular: myocarditis, pericarditis, vasculitis; nervous system: meningitis, encephalitis, myelitis and demyelination, myasthenic syndrome/myasthenia gravis (including exacerbation), Guillain-Barré syndrome, nerve paresis, autoimmune neuromyopathy, and other rare inflammatory toxicities can occur: gastrointestinal: pancreatitis to include increases in serum amylase and lipase levels, gastritis, duodenitis, musculoskeletal and connective tissue: myositis/polymyositis, rhabdomyolysis, and associated sequelae including renal failure, arthritis, polymyalgia rheumatica: endocrine: hypoparathyroidism; other (hematologic/immune): hemolytic anemia, aplastic anemia, hemophagocytic lymphohistiocytosis (HLH), systemic inflammatory response syndrome, histiocytic necrotizing lymphadenitis (Kikuchi lymphadenitis), sarcoidosis, immune thrombocytopenic purpura, solid organ transplant rejection.

- In addition to the immune-mediated adverse reactions listed above, across clinical trials of YERVOY monotherapy or in combination with OPDIVO, the following clinically significant immune-mediated adverse reactions, some with fatal outcome, occurred in <1% of patients unless otherwise specified: nervous system: autoimmune neuropathy (2%), myasthenic syndrome/myasthenia gravis, motor dysfunction: cardiovascular: angiopathy, temporal arteritis, ocular: blepharitis, episcleritis, orbital myositis, scleritis; gastrointestinal: pancreatitis (1.3%); other (hematologic/immune)-conjunctivitis, cytopenias (2.5%), eosinophilia (2.1%), erythema multiforme, hypersensitivity vasculitis, neurosensory/hypoaesthesia, psooriasis.

- Some ocular IMAR cases can be associated with retinal detachment. Various grades of visual impairment, including blindness, can occur. If uveitis occurs in combination with other immune-mediated adverse reactions, consider a Vogt-Koyanagi-Harada-like syndrome, which has been observed in patients receiving OPDIVO and YERVOY, as this may require treatment with systemic corticosteroids to reduce the risk of permanent vision loss.

Infusion-Related Reactions

- OPDIVO and YERVOY can cause severe infusion-related reactions. Discontinue OPDIVO and YERVOY in patients with severe (Grade 3) or life-threatening (Grade 4) infusion-related reactions. Interrupt or slow the rate of infusion in patients with mild (Grade 1) or moderate (Grade 2) infusion-related reactions.

Complications of Allogeneic Hematopoietic Stem Cell Transplantation

- Fatal and other serious complications can occur in patients who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with OPDIVO or YERVOY. Transplant-related complications include hyperacute graft versus host disease (GVHD), acute GVHD, chronic GVHD, hepatic veno-occlusive disease (VOD) after reduced intensity conditioning, and steroid-requiring febrile syndrome (without an identified infectious cause). These complications may occur despite intervening therapy between OPDIVO or YERVOY and allogeneic HSCT.

- Follow patients closely for evidence of transplant-related complications and intervene promptly. Consider the benefit versus risks of treatment with OPDIVO and YERVOY prior to or after an allogeneic HSCT.

Embryo-Fetal Toxicity

- Based on its mechanism of action and findings from animal studies, OPDIVO and YERVOY can cause fetal harm when administered to a pregnant woman. The effects of YERVOY are likely to be greater during the second and third trimesters of pregnancy. Advise pregnant women of the potential risk to a fetus. Advise females of reproductive potential to use effective contraception during treatment with OPDIVO and YERVOY and for at least 5 months after the last dose.

Increased Mortality in Patients with Multiple Myeloma when OPDIVO is Added to a Thalidomide Analogue and Dexamethasone

- In randomized clinical trials in patients with multiple myeloma, the addition of OPDIVO to a thalidomide analogue plus dexamethasone resulted in increased mortality. Treatment of patients with multiple myeloma with a PD-1 or PD-L1 blocking antibody in combination with a thalidomide analogue plus dexamethasone is not recommended outside of controlled clinical trials.

Lactation

- There are no data on the presence of OPDIVO or YERVOY in human milk, the effects on the breastfed child, or the effects on milk production. Because of the potential for serious adverse reactions in breastfed children, advise women not to breastfeed during treatment and for 5 months after the last dose.

Serious Adverse Reactions

- In Checkmate 227, serious adverse reactions occurred in 58% of patients (n=576). The most frequent (≥2%) serious adverse reactions were pneumonia, diabetes mellitus, pneumonitis, hepatitis, pulmonary embolism, adrenal insufficiency, and hypophysitis. Fatal adverse reactions occurred in 17% of patients; these included events of pneumonitis (4 patients), myocarditis, acute kidney injury, shock, hyperglycemia, multi-system organ failure, and renal failure. In Checkmate 9LA, serious adverse reactions occurred in 57% of patients (n=358). The most frequent (≥2%) serious adverse reactions were pneumonia, diabetes mellitus, pneumonitis, amelina, acute kidney injury, musculoskeletal pain, dyspnea, pneumonitis, and respiratory failure. Fatal adverse reactions occurred in 7 (2%) patients, and included hepatic toxicity, acute renal failure, sepsis, pneumonitis, diabetes mellitus, hypokalemia, and massive hemoptysis in the setting of thrombocytopenia.

Common Adverse Reactions

- In Checkmate 227, the most common (≥2%) adverse reactions were fatigue (44%), rash (34%), decreased appetite (31%), musculoskeletal pain (27%), diabetes mellitus (26%), dyspnea (26%), cough (23%), headache (22%), nausea (21%), and pruritus (21%). In Checkmate 9LA, the most common (≥20%) adverse reactions were fatigue (49%), musculoskeletal pain (39%), nausea (32%), diabetes mellitus (31%), rash (30%), decreased appetite (28%), constipation (21%), and pruritus (21%).

Please see additional Important Safety Information for OPDIVO and YERVOY throughout and accompanying brief summary of US Full Prescribing Information for OPDIVO and YERVOY on the following pages.

**OPDIVO® (nivolumab) injection, for intravenous use**

**Indications and Uses**
- **NSCLC (nivolumab)**, in combination with ipilimumab, is indicated for the first-line treatment of adult patients with metastatic non-small cell lung cancer (NSCLC) whose tumors express PD-L1 (≥1% as determined by an FDA-approved test) with no EGFR or ALK genomic tumor aberrations.
- **OPDIVO**, in combination with ipilimumab and 2 cycles of platinum-doublet chemotherapy, is indicated for the first-line treatment of adult patients with metastatic non-small cell lung cancer (NSCLC), with no EGFR or ALK genomic tumor aberrations.

**Dosage and Administration**

**Patient Selection**
Select patients with metastatic NSCLC for treatment with OPDIVO in combination with ipilimumab based on PD-L1 expression (see Clinical Studies (14.3) in full Prescribing Information) to ensure appropriate treatment and to maximize benefit. The majority of patients selected for therapy with OPDIVO and ipilimumab had metastatic disease. Clinical benefit was mainly observed in patients whose tumors expressed PD-L1 (≥1% as determined by an FDA-approved test).

**Contraindications**
- Hypersensitivity to nivolumab or ipilimumab. Common adverse reactions (≥10%) in patients who received OPDIVO or OPDIVO in combination with ipilimumab included rash, pruritus, skin infections, hypothyroidism, and endocrine disorders.

**Warnings and Precautions**
- Severe or fatal immune-mediated adverse reactions can occur in any organ system or tissue. Immune-mediated adverse reactions are usually associated with a high incidence of serious hepatobiliary, respiratory, dermatologic, and endocrine disorders. Immune-mediated adverse reactions are more common in patients treated with both OPDIVO and ipilimumab than in patients treated with OPDIVO alone. Immune-mediated adverse reactions can manifest in any organ system or tissue and can occur at any time during treatment with OPDIVO and ipilimumab.

**Adverse Reactions**

**General**

<table>
<thead>
<tr>
<th>Adverse Reaction</th>
<th>All Grades (%)</th>
<th>Grade 3-4 (%)</th>
<th>All Grades (%)</th>
<th>Grade 3-4 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue**</td>
<td>44</td>
<td>0</td>
<td>42</td>
<td>4</td>
</tr>
<tr>
<td>Pruritus**</td>
<td>18</td>
<td>0.5</td>
<td>11</td>
<td>0.4</td>
</tr>
<tr>
<td>Edema**</td>
<td>14</td>
<td>0.2</td>
<td>12</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Skin and Subcutaneous Tissue**

- Rash
- Pruritus

**Metabolism and Nutrition**

- Decreased appetite

**Immunosuppressants**

- Biological responses with OPDIVO and ipilimumab can be enhanced by the use of other immunomodulatory agents. Severe or fatal cases have been reported for some of these adverse reactions.

**Cardiovascular**

- Venous System: Meningitis, encephalitis, myelitis and demyelination, myasthenic syndrome/myasthenia gravis (including exacerbation), Guillain-Barré syndrome, nerve palsies, autonomic neuropathy

**Gastrointestinal**

- Liver Failure
- Pancreatitis

**Hematology**

- Hypothyroidism
- Thyroid disorders

**Hypersensitivity**

- Infusion-related reactions

**Infectious**

- Bacterial, viral, fungal and mycobacterial infections

**Nervous System**

- Myelitis, encephalitis, meningoencephalitis, encephalopathy, transverse myelitis, acute disseminated encephalomyelitis, headache, pituitary apoplexy, paresthesias, facial nerve palsy, sensory or motor neuropathy, demyelinating disease, multifocal motor neuropathy, optic neuritis

**Respiratory**

- Infection, pneumonitis, interstitial lung disease, pulmonary fibrosis

**Musculoskeletal**

- Joint pain, myopathy

**Other**

- Other (Hematologic/Immunologic): Hemolytic anemia, aplastic anemia, hemophagocytic lymphohistiocytosis, systemic inflammatory response syndrome, histiocytic necrotizing lymphadenitis (Kikuchi lymphadenitis), sarcoidosis, immune thrombocytopenia purpura, small organ transplant rejection

**Infusion-Related Reactions**

- Infusion-related reactions can occur with ipilimumab alone or in combination with OPDIVO. Infusion-related reactions can occur during or after being treated with a PD-1 or PD-L1 blocking antibody.

**Complications of Allogeneic Hematopoietic Stem Cell Transplantation**

- Complications of allogeneic hematopoietic stem cell transplantation (HSCT) include infusion-related reactions and other serious complications that can occur in patients who receive allogeneic hematopoietic stem cell transplantation (HSCT) before or after being treated with a PD-1 or PD-L1 blocking antibody.

**Precautions**

- Precautions refer to risks associated with the use of OPDIVO and ipilimumab in combination. Three patients (0.7%) died due to pneumonitis. Treatment of patients with multiple myeloma with a PD-1 or PD-L1 blocking antibody in combination with a thalidomide analogue plus dexamethasone is not recommended outside of controlled clinical trials.

**Clinical Trials Experience**

- Clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice.

**Data in Warnings and Precautions**

- The data in WARNINGS AND PRECAUTIONS reflect exposure to ipilimumab as a single agent in 1943 patients enrolled in CHECKMATE-037, CHECKMATE-057, CHECKMATE-069, CHECKMATE-025, CHECKMATE-067, CHECKMATE-040 and CHECKMATE-049, and in a Phase 1 trial of OPDIVO 1 mg/kg or ipilimumab 0.3 mg/kg (NCT01883372).

**Drug Interactions**

- Drug interactions with OPDIVO have not been systematically studied.

**Adverse Drug Reactions**

- Adverse drug reactions were observed in 73% of patients treated with OPDIVO alone or in combination with ipilimumab.
### Table 1: Adverse Reactions in ≥10% of Patients Receiving OPDIVO (nivolumab) and Ipilimumab (Continued – CHECKMATE-227)

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>OPDIVO and Ipilimumab</th>
<th>Platinum-doublet Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematology</td>
<td>All Grades (%)</td>
<td>Grades 3-4 (%)</td>
</tr>
<tr>
<td>Anemia</td>
<td>46</td>
<td>86</td>
</tr>
<tr>
<td>Lymphopenia</td>
<td>46</td>
<td>5</td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>41</td>
<td>12</td>
</tr>
<tr>
<td>Increased AST</td>
<td>29</td>
<td>6</td>
</tr>
<tr>
<td>Increased ALT</td>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>Increased lipase</td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td>Increased alkaline phosphate</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>Increased amylase</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Hypochromia</td>
<td>28</td>
<td>1.7</td>
</tr>
<tr>
<td>Hyperkalemia</td>
<td>27</td>
<td>3.4</td>
</tr>
<tr>
<td>Increased cholesterol</td>
<td>27</td>
<td>13</td>
</tr>
</tbody>
</table>

Each test incidence is based on the number of patients who had both baseline and at least one on-study laboratory measurement available: OPDIVO and ipilimumab group (range: 494 to 556 patients) and chemotherapy group (range: 469 to 542 patients).

### Table 2: Laboratory Values Worsening from Baseline occurring in >20% of Patients on OPDIVO and Platinum-doublet Chemotherapy – CHECKMATE-227

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>OPDIVO and Ipilimumab</th>
<th>Platinum-doublet Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematology</td>
<td>All Grades (%)</td>
<td>Grades 3-4 (%)</td>
</tr>
<tr>
<td>Anemia</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>Lymphopenia</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>Leukopenia</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>23</td>
<td>4.3</td>
</tr>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypoglycemia</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>37</td>
<td>10</td>
</tr>
<tr>
<td>Increased AST</td>
<td>34</td>
<td>1.3</td>
</tr>
<tr>
<td>Increased ALT</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Increased lipase</td>
<td>31</td>
<td>1.2</td>
</tr>
<tr>
<td>Increased alkaline phosphate</td>
<td>30</td>
<td>7</td>
</tr>
<tr>
<td>Increased amylase</td>
<td>30</td>
<td>3.5</td>
</tr>
<tr>
<td>Hypochromia</td>
<td>29</td>
<td>1.2</td>
</tr>
<tr>
<td>Hyperkalemia</td>
<td>26</td>
<td>1.4</td>
</tr>
<tr>
<td>Increased cholesterol</td>
<td>26</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Each test incidence is based on the number of patients who had both baseline and at least one on-study laboratory measurement available: OPDIVO and ipilimumab and platinum-doublet chemotherapy group (n=720; range: 594 to 637 patients) and platinum-doublet chemotherapy group (range: 191 to 330 patients).

### Table 3: Adverse Reactions in >10% of Patients Receiving OPDIVO (nivolumab) and Ipilimumab and Platinum-doublet Chemotherapy – CHECKMATE-9LA

### Table 4: Laboratory Values Worsening from Baseline occurring in >20% of Patients on OPDIVO and Platinum-doublet Chemotherapy – CHECKMATE-9LA

### Immunogenicity

As with all therapeutic proteins, there is a potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing antibody) positivity in an assay may be influenced by several factors including assay methodology, sample handling, timing of sample collection, concomitant medications, and underlying disease. For these reasons, comparison of incidence of antibodies to OPDIVO with the incidences to antibodies to other products may be misleading.

The incidence of neutralizing antibodies against nivolumab was 1.4% (7/491) with OPDIVO 3 mg/kg every 2 weeks and ipilimumab 1 mg every 6 weeks. The incidence of neutralizing antibodies against nivolumab was 0.2% (6/3000) with OPDIVO 3 mg/kg every 2 weeks and ipilimumab 1 mg every 8 weeks.

There was no evidence of increased incidence of infusion-related reactions with anti-nivolumab antibody development.
YERVOY® (ipilimumab) injection, for intravenous use

Brief Summary of Prescribing Information. For complete prescribing information consult official package insert.

INDICATIONS AND USAGE

• YERVOY (ipilimumab), in combination with nivolumab, is indicated for the first-line treatment of adult patients with metastatic non-small cell lung cancer (NSCLC) whose tumors express PD-L1 (≥1%) as determined by an FDA-approved test. (See Dosage and Administration (2.3) in full Prescribing Information.)

INFUSION REACTIONS

In NSCLC, immune-mediated pneumonitis occurred in 9% (50/576) of patients receiving YERVOY 1 mg/kg every 6 weeks. Immune-mediated pneumonitis was the most common adverse reaction leading to discontinuation of YERVOY in patients treated with YERVOY with nivolumab. Immune-mediated pneumonitis led to permanent discontinuation of YERVOY with nivolumab in 5% of patients and withholding of YERVOY with nivolumab in 3.6% of patients.

Systemic corticosteroids were required in 100% of patients with pneumonitis followed by a corticosteroid taper. Immune-mediated pneumonitis led to permanent discontinuation of YERVOY with nivolumab in 5% of patients and withholding of YERVOY with nivolumab in 3.6% of patients.

Risk Summary

Based on data from animal studies and its mechanism of action (see Clinical Pharmacology (12.1) in full Prescribing Information), YERVOY can cause fetal harm when administered to a pregnant woman. In animal reproduction studies, administration of nivolumab to cynomolgus monkeys at the oral dose of 30 mg/kg/day (approximately 4 times the upper limit of exposure in humans based on body surface area) resulted in increased maternal toxicity including reduced body weight gain in the mother, with no apparent malformations or effects on neurobehavioral, immunological, or clinical pathology parameters throughout the 90-day postpartum period.

Data

Animal Data

The safety and effectiveness of YERVOY and OPDIVO (ipilimumab) have not been established in pediatric patients less than 18 years old with NSCLC (see Indications and Usage).

Geriatric Use

Of the 576 patients randomized to YERVOY 3 mg/kg every 2 weeks with nivolumab 1 mg/kg every 6 weeks in CHECKMATE-025 (NSCLC), 44% were 65 years or older and 10% were 75 years or older. No overall difference in safety was reported between older patients and younger patients; however, there was a higher discontinuation rate due to adverse reactions in patients aged 75 years or older (29%) relative to all patients who received OPDIVO (nivolumab) (18%). Of the 361 patients in the primary efficacy population (PD-L1 ≥1%) randomized to OPDIVO 3 mg/kg every 2 weeks with nivolumab 1 mg/kg every 6 weeks in CHECKMATE-227, the hazard ratio for overall survival was 0.93 (95% CI: 0.69, 1.25) in the 195 patients younger than 65 years compared to 0.91 (95% CI: 0.72, 1.15) in the 197 patients 65 years or older (see Clinical Studies (14.3) in full Prescribing Information).

Of the 361 patients randomized to OPDIVO 360 mg every 3 weeks in combination with nivolumab 1 mg/kg every 6 weeks and platinum-doublet chemotherapy every 3 weeks (for 2 cycles) in CHECKMATE-816 (NSCLC), 51% were 65 years or older and 10% were 75 years or older. No overall difference in safety was reported between older patients and younger patients; however, there was a higher discontinuation rate due to adverse reactions in patients aged 75 years or older (43%) relative to all patients who received OPDIVO with nivolumab and chemotherapy (24%). For patients aged 75 years or older who received chemotherapy only, the discontinuation rate due to adverse reactions was 16% relative to all patients who had a discontinuation rate of 13%. Based on an updated analysis for overall survival, of the 361 patients randomized to OPDIVO in combination with platinum and doublet chemotherapy in CHECKMATE-816, the hazard ratio for overall survival was 0.81 (95% CI: 0.67, 0.96) in the 178 patients younger than 65 years compared to 0.73 (95% CI: 0.56, 0.95) in the 183 patients 65 years or older.

PATIENT COUNSELING INFORMATION

Advise the patient to read the FDA-approved patient labeling (Medication Guide).

Immune-Mediated Adverse Reactions

Inform patients of the risk of immune-mediated adverse reactions that may require corticosteroid treatment and withholding or discontinuation of YERVOY, including:

• Pruritus: Advise patients to contact their healthcare provider immediately for any worsening or increasing itch, rash, or skin eruptions.

• Fatigue: Advise patients to contact their healthcare provider immediately for any weakness or tiredness.

• Pneumonitis: Advise patients to contact their healthcare provider immediately for new or worsening cough, chest pain, or shortness of breath (see Warnings and Precautions).

• Colitis: Advise patients to contact their healthcare provider immediately for diarrhea or severe abdominal pain (see Warnings and Precautions).

• Hepatitis: Advise patients to contact their healthcare provider immediately for jaundice, severe nausea or vomiting, pain on the right side of abdomen, itchy skin, or easy bruising or bleeding (see Warnings and Precautions).

• Endocrinopathies: Advise patients to contact their healthcare provider immediately for signs or symptoms of hypophysitis, adrenal insufficiency, hyperthyroidism, and diabetes mellitus (see Warnings and Precautions).

• Nephritis and Renal Dysfunction: Advise patients to contact their healthcare provider immediately for signs or symptoms of nephritis including increased urine output, blood in urine, swelling in ankles, loss of appetite, and any other signs of renal dysfunction (see Warnings and Precautions).

• Skin Adverse Reactions: Advise patients to contact their healthcare provider immediately for rash (see Warnings and Precautions).

Infusion-Related Reactions

• Advise patients of the potential risk of infusion-related reactions (see Warnings and Precautions).

Complications of Allogeneic HSCT

• Advise patients of potential risk of post-transplant complications (see Warnings and Precautions).

Embryo-Fetal Toxicity

• Advise females of reproductive potential of the potential risk to a fetus and to inform their healthcare provider of a known or suspected pregnancy (see Warnings and Precautions, Use in Specific Populations).

• Advise females of reproductive potential to avoid conception during treatment with YERVOY and for at least 5 months following the last dose (see Use in Specific Populations).

Lactation

• Advise women not to breastfeed during treatment with YERVOY and for 5 months after the last dose (see Use in Specific Populations).

Other Immune-Mediated Adverse Reactions

Swelling of the hands or feet (peripheral edema), chest pain, trouble breathing, or new or worsening shortness of breath of 24 hours or longer duration (see Warnings and Precautions).

Nervous System: Autoimmune encephalitis (2.3) and/or acute disseminated encephalomyelitis (ADEM) (0.5%), and/or autoimmune meningitis (see Warnings and Precautions).

Cardiovascular: Pericarditis (0.5%), and/or pericardial effusion (0.5%), and/or pericardial tamponade (0.5%).

Gastrointestinal: Acute pancreatitis (0.5%), ascites (0.5%), cholecystitis (0.5%), colitis (0.5%), and/or enteritis (0.5%), and/or hepatic failure (0.5%), and/or ileus (0.5%).

Other Immune-Mediated Adverse Reactions

Severe infusion-related reactions can occur with YERVOY. Discontinue YERVOY in patients with severe or life-threatening infusion reactions. Intermittent or slow the rate of infusion in patients with mild or moderate infusion reactions (see Dosage and Administration (2.3) in full Prescribing Information).
Complications of Allogeneic Hematopoietic Stem Cell Transplant after YERVOY (ipilimumab)

Fatal or serious graft-versus-host disease (GvHD) can occur in patients who receive YERVOY either before or after allogeneic hematopoietic stem cell transplantation (HSCT). These complications may occur despite intervening therapy, sometimes involving CTLA-4 receptor blocking antibody and allogeneic HSCT.

Follow patients closely for evidence of GvHD and intervene promptly [see Adverse Reactions]. Consider the benefit versus risks of treatment with YERVOY after allogeneic HSCT.

Embryo-Fetal Toxicity

Exposure to YERVOY during pregnancy may cause fetal harm. YERVOY can cause fetal harm when administered to a pregnant woman. In animal reproduction studies, administration of ipilimumab to cynomolgus monkeys from the onset of organogenesis through delivery resulted in increased rates of abortion, stillbirth, premature birth (with corresponding lower birth weight), and higher incidences of infant mortality in a dose-related manner. The effects of ipilimumab on pregnancy outcome are likely to be greater during the second and third trimesters of pregnancy. Advise pregnant women of the potential risk to a fetus. Advise females of reproductive potential to use effective contraception during treatment with YERVOY and for 3 months after the last dose [see Use in Specific Populations].

Risks Associated When Administered in Combination with Nivolumab When YERVOY is administered in combination with nivolumab, refer to the nivolumab Full Prescribing Information for additional risk information that applies to the combination use treatment.

ADVERSE REACTIONS

The following clinically significant adverse reactions are described elsewhere in the labeling:

- Severe and fatal immune-mediated adverse reactions [see Warnings and Precautions]
- Infusion-related reactions [see Warnings and Precautions]

Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared with rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice.

The data described in the Warnings and Precautions section reflect exposure to YERVOY 1 mg/kg administered with nivolumab 3 mg/kg in CHECKMATE-227 and to YERVOY 1 mg/kg administered in combination with nivolumab and platinum-doublet chemotherapy in CHECKMATE-21L, an open-label, multicenter, randomized trial in adult patients with previously untreated metastatic or recurrent NSCLC with no EGFR or ALK genomic tumor aberrations.

First-line Treatment of Metastatic NSCLC in Combination with Nivolumab

The safety of YERVOY in combination with nivolumab was evaluated in CHECKMATE-227, a randomized, multicenter, multi-cohort, open-label trial in patients with previously untreated metastatic or recurrent NSCLC with no EGFR or ALK genomic tumor aberrations [see Clinical Studies (14.6) in full Prescribing Information]. The trial excluded patients with untreated brain metastases, carcinomatous meningitis, active autoimmune disease, or severe chronic or active infection requiring systemic immunosuppression. Patients received YERVOY 1 mg/kg by intravenous infusion over 30 minutes every 6 weeks and nivolumab 3 mg/kg by intravenous infusion over 30 minutes every 2 weeks or platinum-doublet chemotherapy every 3 weeks for 4 cycles. The median duration of therapy in YERVOY and nivolumab-treated patients was 4.2 months (range: 1 day to 25.5 months); 39% of patients received YERVOY and nivolumab for >6 months and 23% of patients received YERVOY and nivolumab for >1 year. The population characteristics were: median age 64 years (range: 26 to 87); 48% were ≤65 years of age, 76% White, and 67% male. Baseline ECOG performance status was 0 (55%) or 1 (45%); 85% were former/current smokers, 11% had brain metastases, 28% had squamous histology and 72% had non-squamous histology.

Serious adverse reactions occurred in 56% of patients. YERVOY and nivolumab were discontinued for adverse reactions in 24% of patients and 53% had at least one dose withheld for an adverse reaction. The most frequent (≥2%) serious adverse reactions were pneumonia, diarrhea/colic, pneumonitis, hepatitis, pulmonary embolism, adrenal insufficiency, and hypothyroidism. Fatal adverse reactions occurred in 1% of patients. For these included events of pneumonitis (2 patients), myocarditis, acute kidney injury, shock, hyperglycemia, multi-system organ failure, and renal failure. The most common (>2%) serious adverse reactions were fatigue, rash, decreased appetite, musculoskeletal pain, diarrhea/colic, dysgeusia, cough, hepatic, nausea, and pruritus. Other clinically important adverse reactions in CHECKMATE-227 were:

- Skin and Subcutaneous Tissue: rash maculo-papular, rash papular, rash pruritic, rash pustular, toxic skin eruption.
- Respiratory, Thoracic and Mediastinal: pneumonia, pneumonitis, hepatitis, pulmonary embolism, adrenal insufficiency, hypothyroidism, hyperthyroidism, hypothyroidism, hyperthyroidism, hypothyroidism, hyperthyroidism, hypothyroidism, hyperthyroidism.

The data described in the Warnings and Precautions section reflect exposure to YERVOY 1 mg/kg administered with nivolumab 3 mg/kg in CHECKMATE-227 and to YERVOY 1 mg/kg administered in combination with nivolumab and platinum-doublet chemotherapy in CHECKMATE-227, an open-label, multicenter, randomized trial in adult patients with previously untreated metastatic or recurrent NSCLC with no EGFR or ALK genomic tumor aberrations.

First-line Treatment of Metastatic or Recurrent NSCLC in Combination with Nivolumab and Platinum-Doubllet Chemotherapy

The safety of YERVOY in combination with nivolumab and platinum-doublet chemotherapy was evaluated in CHECKMATE-816 [see Clinical Studies (14.6) in full Prescribing Information]. Patients received either YERVOY 1 mg/kg administered every 6 weeks in combination with nivolumab 360 mg administered every 3 weeks and platinum-doublet chemotherapy administered every 3 weeks for 2 cycles, or platinum-doublet chemotherapy administered every 6 weeks in combination with YERVOY and nivolumab for >6 months and 35% of patients received YERVOY and nivolumab for >1 year. Other clinically important adverse reactions in CHECKMATE-816 were:

- Skin and Subcutaneous Tissue: rash maculo-papular, rash papular, rash pruritic, rash pustular, toxic skin eruption.
- Respiratory, Thoracic and Mediastinal: pneumonia, pneumonitis, hepatitis, pulmonary embolism, adrenal insufficiency, hypothyroidism, hypothyroidism, hypothyroidism, hypothyroidism.

Tables 1 and 2 summarize selected adverse reactions and laboratory abnormalities, respectively, in CHECKMATE-227.

Table 1: Adverse Reactions in >10% of Patients Receiving YERVOY and Nivolumab - CHECKMATE-227

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>YERVOY and Nivolumab</th>
<th>Platinum-Doubllet Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperkalemia</td>
<td>27 3.6</td>
<td>22 0.4</td>
</tr>
<tr>
<td>Hyponatremia</td>
<td>41 12</td>
<td>26 4.9</td>
</tr>
<tr>
<td>Increased AST</td>
<td>39 5</td>
<td>26 0.4</td>
</tr>
<tr>
<td>Increased ALT</td>
<td>36 7</td>
<td>27 0.7</td>
</tr>
<tr>
<td>Increased lipase</td>
<td>35 14</td>
<td>14 3.4</td>
</tr>
<tr>
<td>Increased creatinine</td>
<td>27 3.4</td>
<td>22 0.4</td>
</tr>
</tbody>
</table>

Table 2: Table 2: Laboratory Values Worsening from Baseline Occurring in ≥20% of Patients on YERVOY and Nivolumab - CHECKMATE-227

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
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<th>Platinum-Doubllet Chemotherapy</th>
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<td>27 0.7</td>
</tr>
<tr>
<td>Increased lipase</td>
<td>35 14</td>
<td>14 3.4</td>
</tr>
<tr>
<td>Increased creatinine</td>
<td>27 3.4</td>
<td>22 0.4</td>
</tr>
</tbody>
</table>

Table 3: Adverse Reactions in >10% of Patients Receiving YERVOY and Nivolumab and Platinum-Doubllet Chemotherapy - CHECKMATE-816

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>YERVOY and Nivolumab</th>
<th>Platinum-Doubllet Chemotherapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyperkalemia</td>
<td>27 3.6</td>
<td>22 0.4</td>
</tr>
<tr>
<td>Hyponatremia</td>
<td>41 12</td>
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</tr>
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<tr>
<td>Increased ALT</td>
<td>36 7</td>
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</tr>
<tr>
<td>Increased lipase</td>
<td>35 14</td>
<td>14 3.4</td>
</tr>
<tr>
<td>Increased creatinine</td>
<td>27 3.4</td>
<td>22 0.4</td>
</tr>
</tbody>
</table>

(Continued)
Hyperkalemia 22 1.7 21 2.1
Increased creatinine 26 1.2 23 0.6
Hypomagnesemia 29 1.2 33 0.6
Increased amylase 30 7 19 1.3
Increased alkaline phosphatase 31 1.2 26 0.3
administration of ipilimumab at doses resulting in exposures approximately 2.6 to 7.2 times the human exposure at a
Report pregnancies to Bristol-Myers Squibb at 1-844-593-7869.
The effects of ipilimumab are likely to be greater during the second and third trimesters of pregnancy.
Based on findings from animal studies and its mechanism of action
Pregnancy
USE IN SPECIFIC POPULATIONS
Skin and Subcutaneous Tissue:
Drug reaction with eosinophilia and systemic symptoms (DRESS syndrome)
Immune System:
• Immune-Mediated Nephritis with Renal Dysfunction: Advise patients to contact their healthcare provider immediately
• Immune-Mediated Pneumonitis: Advise patients to contact their healthcare provider immediately for any new or
• Immune-Mediated Diarrhea or Colitis: Advise patients to contact their healthcare provider immediately for signs or
Advise patients that YERVOY can cause immune-mediated adverse reactions including the following [see Warnings and Precautions]:
• Immune-Mediated Diarrhea or Colitis: Advise patients to contact their healthcare provider immediately for signs or symptoms of diarrhea or colitis.
• Immune-Mediated Hepatitis: Advise patients to contact their healthcare provider immediately for signs or symptoms of hepatitis.
• Immune-Mediated Dermatologic Adverse Reactions: Advise patients to contact their healthcare provider immediately if they develop a new rash.
• Immune-Mediated Endocrinopathies: Advise patients to contact their healthcare provider immediately for signs or symptoms of hypothyroidism, hyperadrenocorticism, hyperthyroidism, and diabetes mellitus.
• Immune-Mediated Pneumonitis: Advise patients to contact their healthcare provider immediately for any new or worsening symptoms of pneumonitis.
• Immune-Mediated Nephritis with Renal Dysfunction: Advise patients to contact their healthcare provider immediately for signs or symptoms of nephritis.
Infusion-Related Reactions
Advise patients who are receiving YERVOY of the potential risk of an infusion-related reaction [see Warnings and Precautions].
Embryo-Fetal Toxicity
• Advise pregnant women of the potential risk to a fetus. Advise females of reproductive potential to inform their healthcare provider of a known or suspected pregnancy [see Warnings and Precautions and Use in Specific Populations].
• Advise females of reproductive potential to use effective contraception during treatment with YERVOY and for 3 months following the last dose.

Table 4: Laboratory Values Worsening from Baseline\(^a\) Occurring in >20% of Patients on YERVOY and Nivolumab and Platinum-Doublentotherapy – CHECKMATE-9LA

<table>
<thead>
<tr>
<th>Laboratory Abnormality</th>
<th>YERVOY and Nivolumab</th>
<th>Platinum-Doublentotherapy</th>
<th>Grade 1-4 (%)</th>
<th>Grade 3-4 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyponatremia</td>
<td>45</td>
<td>42</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Hypernatremia</td>
<td>32</td>
<td>10</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Increased ALT</td>
<td>34</td>
<td>43</td>
<td>24</td>
<td>1.2</td>
</tr>
<tr>
<td>Increased lipase</td>
<td>31</td>
<td>12</td>
<td>10</td>
<td>2.2</td>
</tr>
<tr>
<td>Increased urea</td>
<td>37</td>
<td>1.2</td>
<td>26</td>
<td>0.3</td>
</tr>
<tr>
<td>Increased amylase</td>
<td>30</td>
<td>7</td>
<td>19</td>
<td>1.3</td>
</tr>
<tr>
<td>Increased AST</td>
<td>30</td>
<td>3.5</td>
<td>22</td>
<td>0.3</td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>29</td>
<td>1.2</td>
<td>33</td>
<td>0.8</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>26</td>
<td>1.4</td>
<td>22</td>
<td>1.8</td>
</tr>
<tr>
<td>Increased creatinine</td>
<td>26</td>
<td>1.2</td>
<td>23</td>
<td>0.6</td>
</tr>
<tr>
<td>Hypokalemia</td>
<td>22</td>
<td>1.2</td>
<td>21</td>
<td>2.1</td>
</tr>
</tbody>
</table>

\(^a\)Each test incidence is based on the number of patients who had both baseline and at least one on-study laboratory measurement available (YERVOY and nivolumab and platinum-doublentotherapy group range: 197 to 347 patients) and platinum-doublent therapy group (range: 191 to 335 patients).

Immunogenicity
As with all therapeutic proteins, there is a potential for immunogenicity. The detection of antibody formation is highly dependent on the sensitivity and specificity of the assay. Additionally, the observed incidence of antibody (including neutralizing activity) is variable in different clinical trials and in postmarketing studies. The observed geometric mean titer (GMT) for anti-PLA2G4E antibodies and 1.6% were positive for anti-ipilimumab neutralizing antibodies. There was no evidence of increased

Table 2: Adverse Reactions in >10% of Patients Receiving YERVOY (ipilimumab) and Nivolumab and Platinum-Doublentchemistry – CHECKMATE-9LA

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Grades 1-4 (%)</th>
<th>Grades 3-4 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>11</td>
<td>0.6</td>
</tr>
<tr>
<td>Diastolic</td>
<td>11</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Toxicity was graded per NCI CTCAE v4.
\(\text{a includes myalgia, back pain, pain in extremity, musculoskeletal pain, bone pain, flank pain, muscle spasms, musculoskeletal chest pain, musculoskeletal disorder, osteitis, musculoskeletal stiffness, non-cardiac chest pain, arthralgia, myositis, myopathy, peripheral neuropathy, peripheral motor neuropathy, peripheral sensory neuropathy.}\)
\(\text{b includes colitis, ulcerative colitis, diarrhea, and enterocolitis.}\)
\(\text{c includes abdominal discomfort, abdominal pain, lower abdominal pain, upper gastrointestinal pain.}\)
\(\text{d includes acr}, \text{dermatitis, acrodermatitis, allergic dermatitis, atopic dermatitis, bullous dermatitis, generalized exudative dermatitis, eczema, keratoderma blennorrhagica, palmoplantar erythrodysesthesia syndrome, rash, erythematous rash, macular rash, mucosal rash, morbilliform rash, papular rash, pruritic rash, skin exfoliation, skin reaction, skin toxicity.}\)

Table 3: Adverse Reactions in >10% of Patients Receiving YERVOY (ipilimumab) and Nivolumab and Platinum-Doublent chemotherapy

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Grades 1-4 (%)</th>
<th>Grades 3-4 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematologic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>Lymphopenia</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>40</td>
<td>15</td>
</tr>
<tr>
<td>Leukopenia</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>23</td>
<td>4.3</td>
</tr>
</tbody>
</table>

In monkeys, ipilimumab was present in milk following administration of ipilimumab at doses resulting in exposures approximately 2.6 to 7.2 times the human exposure at a

In a combined study of embryo-fetal and peri-partum development, pregnant cynomolagus monkeys received ipilimumab every 3 weeks from the onset of organogenesis in the first trimester through parturition. No treatment-related adverse effects on reproduction were detected during the first two trimesters of pregnancy. Beginning in the third trimester, administration of ipilimumab at doses resulting in exposures approximately 2.6 to 7.2 times the human exposure at a

Data
Animal Data

In female and male monkeys, any abnormal or delayed event considered related to ipilimumab was assessed by a blinded investigator and scored on a qualitative scale ranging from 0 to 5, with 0 being no evidence of effect and 5 being severe evidence of effect. The evaluations were performed at 3 weeks after the last dose. Abnormal effects on reproduction were detected during the first two trimesters of pregnancy. Beginning in the third trimester, administration of ipilimumab at doses resulting in exposures approximately 2.6 to 7.2 times the human exposure at a

Risk Summary

Table 4: Laboratory Values Worsening from Baseline\(^a\) Occurring in >20% of Patients on YERVOY and Nivolumab and Platinum-Doublentotherapy – CHECKMATE-9LA
Identifying and Overcoming Patient and Caregiver Fatigue

**PRESENTERS:** Stephanie Broussard, MSSW, LCSW, APHSW-C | Texas Oncology; Lauren Walch, LMSW | Georgia Cancer Center for Excellence; David Rodeback, PhD, LCSW | Utah Cancer Specialists

**SYNOPSIS:** The panel discussed understanding the role of social workers, transportation, compassion fatigue, burnout and meditation.

**PRESENTATION:** Walch stressed the importance of social workers and their role in patient care. Social workers have many roles in patient care. These include connecting the patient to community services, transportation arrangements, and financial assistance navigation. She emphasized that patients are mainly in need of transportation. Transportation is a crucial element for patients to make it to their appointment, and in case they do not have family or friends available, it is essential to reach out to them. Broussard provided a comparison between compassion fatigue and burnout. Compassion fatigue is the physical, emotional and psychological impact of helping others which, in the case of cancer patients, is the repeated trauma of experiencing patients dying. In comparison, burnout is a cumulative process marked by exhaustion, withdrawal with increased workload and institutional stress that is not related to trauma.

However, burnout and secondary trauma lead to compassion fatigue. Broussard also stressed that to overcome compassion fatigue, healthcare workers need to practice resilience and as clinicians we need to challenge the norm by participating in education and counseling.

Rodeback talked about compassion and empathy being a part of the neurologic system. Our neurons can pick up patient trauma and imprint it in ourselves, coming to a point where we use too much empathy. He emphasized that if we do this regularly, we will burn out. Instead, we need to learn to experience compassion for patients. He recommended warrior meditation: knowing your surroundings and using courage as an ability to make better decisions.

**TAKEAWAY POINTS:**
- Social workers have many roles in patient care, including connecting patients to community services, transportation and financial assistance.
- Compassion fatigue presents differently to every individual; it is vital to learn how to be resilient and overcome compassion fatigue.
- Meditation is being aware of your surroundings and what is going on in your body.

Summary by Tracy Palomino, PharmD Candidate (2022), Texas Tech School of Pharmacy.

Addressing Disparities: Advancing Healthcare Equity

**PRESENTERS:** Maurice Alexander, PharmD, BCOP, CCP | University of North Carolina Medical Center; Kashyap Patel, MD | Carolina Blood and Cancer Care Associates; Serena Welch, MHA | Kaiser Permanente African American Association

**SYNOPSIS:** The presenters discussed the importance of social workers and their role in patient care. Social workers have many roles in patient care. These include connecting the patient to community services, transportation arrangements, and financial assistance navigation. She emphasized that patients are mainly in need of transportation. Transportation is a crucial element for patients to make it to their appointment, and in case they do not have family or friends available, it is essential to reach out to them. Broussard provided a comparison between compassion fatigue and burnout. Compassion fatigue is the physical, emotional and psychological impact of helping others which, in the case of cancer patients, is the repeated trauma of experiencing patients dying. In comparison, burnout is a cumulative process marked by exhaustion, withdrawal with increased workload and institutional stress that is not related to trauma.

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**TAKEAWAY POINTS:**
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- Compassion fatigue presents differently to every individual; it is vital to learn how to be resilient and overcome compassion fatigue.
- Meditation is being aware of your surroundings and what is going on in your body.

Summary by Nathan Ramsbacher, PharmD Candidate (2022), University of Montana Skaggs School of Pharmacy.

**MODERATOR:** Nancy Egerton, PharmD, BCOP | New York Oncology Hematology

**PRESENTERS:** Barry Brooks, MD, MBA | Texas Oncology; Amanda Land, JD | Office of Arkansas Attorney General; Ben Jones | McKesson

**SYNOPSIS:** Brooks, Land and Jones joined together for a discussion facilitated by Egerton regarding the overall impact of legislation in oncology, as well as their experience with federal preemption.

**PRESENTATION:** Land, Assistant Deputy Attorney General of Arkansas, talked about her direct involvement in Rutledge v. Pharmaceutical Care Management Association, also known as Act 900. This act primarily focused on the regulations that surrounded pharmacy benefit managers (PBMs). Within this process, the law was initially deemed unconstitutional by the U.S. Court of Appeals for the Eighth Circuit. This decision was primarily based on a very similar appeal in Iowa.

However, when elevated to the U.S. Supreme Court, the law was ultimately upheld and found not preempted by the Employee Retirement Income Security Act (ERISA) of 1974. This was a monumental decision in the pharmacy world as up until then PBMs have prevailed in the legal system.

Jones commented on how the health-care industry as a whole was now able to face PBMs with more confidence. Brooks discussed the effects this decision had on his patients, and how he was able to impact legislation by showcasing these direct effects.

**DISCUSSION:**

**Q:** In what ways can a provider with minimal legislative experience get involved with fighting against PBMs?

**A:** Advocate for one issue at a time. Start by learning about the issue at hand and collecting information and resources to support your appeal. If possible, consider inviting elected officials to your practice site to experience first hand the impact of the issue at hand.

**TAKEAWAY POINTS:**

- Stay on top of legislative matters that pertain to oncology throughout the country.
- Remain engaged with policy makers, even if there is no current request for action and/or you have already come to a solution for a previous issue.
- When faced with a difficult situation, use your resources, namely your state’s attorney general contact and state legislators.

Summary by Hala Daghlas-Yusuf, PharmD Candidate (2023), Northeast Ohio Medical University.

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.
New & Emerging Oral Oncolytics & the Role of the Oncology Team in Optimizing Patient Outcomes

**PRESENTER:** Ashley Glode, PharmD, BCOP | University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences

**SYNOPSIS:** The FDA has made rapid advances in oral oncolytic drug approvals this year, with approved indications in the last six months. This presentation focused on assisting healthcare professionals with exploring the pharmacology and safety profiles for new and approved drugs.

**PRESENTATION:** Sotorasib was approved for non-small-cell lung cancer (NSCLC) targeting KRAS G12C-mutation. The Code-Break 100 trial showed that sotorasib led to a durable clinical benefit without new safety signals in previously treated KRAS p.G12C-mutated NSCLC. Adverse effects may include nausea. Drug interactions include PPIs, H2Ras, strong CYP3A4 substrates and inducers, and P-gp substrates with narrow therapeutic index.

**Infgratinib** for cholangiocarcinoma is a pan-FGFR TKI. An ongoing phase 2 trial showed promising clinical activity and manageable adverse events with infgratinib in locally advanced or metastatic patients previously treated for cholangiocarcinoma with FGFR2 gene fusion or rearrangement. Side effects may include ocular toxicity, nail toxicity, stomatitis and hyperphosphatemia.

**Belzutifan** is a HIF2- alpha transcription factor inhibitor. Study 004 (NCT03401788) showed promising efficacy and tolerability with belzutifan in patients with von Hippel-Lindau disease (VHL) associated ccrCC and response in other VHL diseases. Adverse effects can include anemia and hypoxia.

**Mobocertinib** is the first oral treatment for patients with exon 20 insertion NSCLC. Study 101 (NCT02716116) demonstrated that it is an efficacious option with manageable adverse effects. Adverse effects include paronychia, dry skin, cardiac effects, QTC prolongation and diarrhea.

**DISCUSSION:**

**Q:** Where can providers find good resources for evaluating oncolytic agents?

**A:** Package inserts provide useful information for evaluating clinical trials, toxicity data and inclusion criteria.

**Q:** A lot of novel agents have similar MOAs and indications. How do you decide which agent to choose?

**A:** Compare the toxicity profiles, dosing schedule and drug interactions of agents to optimize treatment for the patient.

**TAKEAWAY POINTS:**

- The oncology team must work together to manage patients receiving new oral oncolytics to optimize patient outcomes.

**Summary by Audrey Simon, PharmD Candidate (2023), and Sunjeev Uthayakumar, PharmD Candidate (2022) University of Toronto.**

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Exploring the Advancements of Evidence-Based Testing and Treatment Strategies in CLL

**PRESENTER:** Anthony Perissinotti, PharmD, BCOP | University of Michigan – Michigan Medicine

**SYNOPSIS:** Perissinotti gave a detailed presentation on prognostic testing for Chronic Lymphocytic Leukemia (CLL) and how it can vary based on gene mutation, cytogenetic abnormalities and minimal residual disease test results. He discussed recent treatment strategies and the different opportunities to mitigate financial toxicity for patients.

**PRESENTATION:** Perissinotti began by providing background information on the epidemiology of CLL, as well as the different oral oncolytics available and goals of therapy. He explained the pivotal studies that helped develop new recommendations for selecting appropriate agents as first-line treatment options and to treatment options in relapsed and refractory settings.

Perissinotti noted that utilization of Measurable Residual Disease (MRD) can help identify patients who should continue their current therapy or who may need to switch or discontinue treatment agents. This measurement has the potential to play an even bigger role in the future.

He emphasized certain adverse effects for BTK inhibitors, venetoclax and PI3K inhibitors, and the management of them. For example, BTK inhibitors increase the risk of bleeding with concomitant use of blood thinning agents, so warfarin should be avoided and unnecessary antiplatelet therapy discontinued.

Pharmacist care is crucial in cancer patients because it can improve patient monitoring, follow-up care and adherence, which can result in better efficacy and tolerance of anticancer medications.

Perissinotti concluded by discussing how expensive the copay for these medications can be and how future therapies can help reduce financial toxicity. He highlighted how the COVID-19 pandemic has increased the financial strain on patients with cancer and gave insight into the pharmacist’s role in assisting patients with reimbursements, access, education and support services.

**TAKEAWAY POINTS:**

- The oncology care team plays an important role in the selection of therapies, education of patients and colleagues, reduction of drug interactions, and the management and monitoring of adverse events for CLL therapies.

- Financial toxicity is very taxing on patients with cancer, and pharmacists have resources to assist them.

**Summary by Rasel Negron Ocasio, PharmD Candidate (2022), Albany College of Pharmacy and Health Sciences, and Shivani Patel, PharmD Candidate (2024), Harrison School of Pharmacy at Auburn University.**

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**Improving Medication Adherence by Empowering Patients to Utilize Resources**

**PRESENTERS:** Rebecca Garland, RPhT | Florida Cancer Specialists; Vonda McClendon, CPhT | Texas Oncology  

**SYNOPSIS:** Medication adherence is an important concept in cancer care and aligns with NCODA’s **Beyond the First Fill** philosophy. NCODA provides important tools for medically integrated pharmacies (MIPs) to improve adherence. 

**PRESENTATION:** Medication adherence increases patient interaction and helps to identify care issues such as side effects, lack of therapeutic efficacy and financial toxicities. A prime example of medication adherence programs is found at Texas Oncology, where a weekly reporting system is used to assess adherence. During the first fill, education, expectations and determination of the need for Treatment Support Kits (TSKs) are anticipated. Beyond the first fill, assessment of side effects, follow up questions and triaging to a pharmacist are anticipated. The BATHE acronym is a useful communication tool for counseling — Background, Affect, Trouble, Handle and Empathy. 

NCODA utilizes a variety of different tools to empower MIPs to increase patient adherence rates. Examples include Positive Quality Interventions (PQIs), treatment calendars, Treatment Support Kits (TSK), Oral Chemotherapy Education (OCE) sheets, Intravenous Cancer Treatment Education (IVE) sheets and Financial Assistance tool.  

**DISCUSSION:**  
**Q:** How do we approach patients who may be averse to excessive communication?  
**A:** Educate other clinicians of the services MIPs offer and encourage clinicians to educate patients on this. On the first call, use empathy and establish a strong connection. Plan all calls ahead of time.  

**TAKEAWAY POINTS:**  
- Medication adherence is linked with better patient outcomes and cost savings for all stakeholders.  
- NCODA offers numerous tools to increase adherence rates, which are free and available to NCODA members.  

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.

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**Going Beyond the First Fill — Prime Therapeutics New Program Prefers NCODA’s Center of Excellence Medically Integrated Pharmacy Accreditation Program**

**PRESENTERS:** Elizabeth Bell | NCODA; Mark Alwardt | McKesson; Austin Cox, PharmD | Alabama Oncology; Paul Forsberg, PharmD, BCOP | Minnesota Oncology; Joe Leach, MD | Minnesota Oncology and Senior Vice President and Chief Medical Officer | Prime Therapeutics  

**SYNOPSIS:** The NCODA Center of Excellence (CoE) Medically Integrated Pharmacy (MIP) Accreditation Program has been named the preferred accreditation for Prime Therapeutics’ new integrated dispensing model, IntegratedRx™ – Oncology. 

**PRESENTATION:** Based on compliance with the ASCO/NCODA Patient-Centered Standards for Medically Integrated Dispensing, the NCODA CoE MIP Accreditation Program focuses on enhanced patient care and quality of services. It was created specifically for medically integrated oncology practices. It is focused on seven tenets: patient centered, always collaborative, quality and value to all stakeholders, robust, independent, innovative and budget neutral. 

NCODA accreditation exemplifies high-quality patient care backed by objective data. As a result of accreditation, practices can expect to experience better patient outcomes and experience, decreased time to therapy and reduced cost of care. The IntegratedRx™ – Oncology program will allow pharmacy benefit manager (PBM) Prime Therapeutics’ 33 million members to receive oral oncolytic and companion medications directly from their oncologist’s clinic or affiliated hospital pharmacy. The pilot program for IntegratedRx™ – Oncology demonstrated significantly shorter fill times, better adherence and reduced drug costs. Prime has named NCODA accreditation as the preferred accreditation for IntegratedRx™ – Oncology. 

**DISCUSSION:**  
**Q:** How is NCODA accreditation different from existing accreditation programs?  
**A:** It is focused on patient values and outcomes, has minimal administrative requirements and is substantially less expensive than other programs.  

**TAKEAWAY POINTS:**  
- NCODA’s CoE MIP Accreditation Program is incredibly patient-focused.  
- NCODA’s accreditation program and Prime Therapeutics’ IntegratedRx™ – Oncology program has the potential to improve patient outcomes **Beyond the First Fill** on an vast national scale.  

**SESSION SLIDES:** Scan the QR code at right to view slides from this presentation.
BEYOND THE FIRST FILL IS ABOUT TO TAKE A GIANT STEP FORWARD

NCODA CoE MIP ACCREDITATION WAS SPECIFICALLY DESIGNED FOR MEDICALLY INTEGRATED PRACTICES

For more than six years, NCODA has addressed the growing need for Medically Integrated Pharmacies (MIP) to enhance care of cancer patients receiving oral and IV therapy by improving operations at the pharmacy level.

Now, thanks to the establishment of the Patient-Centered Standards for Medically Integrated Dispensing: ASCO/NCODA Standards in December 2019, NCODA is about to take its Mission to the next level.

On Aug. 10, 2021, NCODA announced the creation of the NCODA Center of Excellence (CoE) Medically Integrated Pharmacy (MIP) Accreditation Program.

The program, based on compliance with the ASCO/NCODA Standards, focuses on enhanced patient care and quality of services.

Beginning in January 2022, NCODA CoE MIP Accreditation will be the preferred accreditation for IntegratedRx™ – Oncology, a new clinically-integrated program offered through pharmacy benefit manager (PBM) Prime Therapeutics that will allow patients to receive oncolytic and companion medications directly from their oncologist’s clinic or affiliated hospital pharmacy.

Pharmacy accreditation is a component of required credentialing for the IntegratedRx™ – Oncology program, and NCODA’s CoE MIP Accreditation Program aligns well with this Prime program as it meets their quality requirements while reducing the burden associated with some broad accreditations.

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ACCREDITATION
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Practices will have a choice in selecting one of several accreditation program options as specified by Prime Therapeutics for IntegratedRx™ – Oncology.

Leading NCODA’s new program is Elizabeth Bell, Director of Medically Integrated Pharmacy Accreditation.

Bell joined NCODA with more than 20 years of experience in healthcare accreditation, compliance and management. She has extensive experience with accreditation programs. Bell has managed quality and accreditation departments, developed healthcare quality initiatives and led statewide compliance audit teams. Most recently, she served as the vice president of consulting services for a healthcare accreditation consulting company.

“The NCODA CoE MIP Accreditation Program is extremely patient-centered and does not include many of the administrative requirements found in other pharmacy accreditation programs,” Bell said. “It’s designed to improve patient outcomes, increase access to medications and ensure the safety of patients taking oral oncolytics. It was built to be meaningful and to bring value to MIP practices that go through the accreditation process.”

In addition to Bell, an Executive Accreditation Council and an Accreditation Working Group will provide guidance, insight and support for the program.

Currently, three NCODA member practices were selected for the pilot program, which is projected to be completed before the end of 2021.

UNIQUE IN SEVERAL WAYS

What sets the program apart is its commitment to the following CoE MIP Tenets: Patient-Centered, Always Collaborative, Quality & Value, Robust, Independent, Innovative and Budget-Neutral.

It’s designed to hit the Quadruple Aim of better outcomes, improved patient experience, improved clinician experience and lower (healthcare) costs.

Key accreditation focus areas include adherence, safety, cost and waste reduction, education, speed to therapy, patient satisfaction and financial assistance.

The program is unique in several ways, Bell noted.

First, it’s the only oncology accreditation focused on medically integrated pharmacy. Existing pharmacy accreditation programs — URAC and ACHC — focus primarily on the needs of mail-order pharmacies. For MIP practices, such standards are not always relevant or supportive of patient care.

The pharmaceutical distributor McKesson currently has 175 MIP practices in its network, according to Mark Alwardt, Vice President of Medically Integrated Dispensing. Of those, he estimates that only “a single digit percentage” are accredited with either URAC or ACHC.

“Typically, the existing accreditations have not been an exact fit for integrated pharmacies,” Alwardt said. “Some of the measurements and quality criteria don’t quite fit that type of model.”

Second is the cost factor. Up until now, pharmacy accreditation has been an expensive proposition, costing tens of thousands of dollars, especially for larger practices. This isn’t the case with NCODA CoE MIP accreditation.

“This program is designed to be budget-neutral for NCODA,” Bell said. “It’s not meant to generate a profit, so it will be much less expensive than the existing pharmacy accreditations out there today.”

Finally, the NCODA CoE MIP Accreditation Program is designed to not only confirm that practices have met the Patient-Centered Standards for Medically Integrated Dispensing: ASCO/NCODA Standards, but also to assist in that achievement.

To that end, NCODA’s full toolbox of initiatives, including Oral Chemotherapy Education (OCE) sheets, Positive Quality Interventions (PQI), Patient Satisfaction Survey (PSS) and other tools, are available to help participants attain accreditation.

PRIME THERAPEUTICS

Creating the new accreditation standards was only half the battle. For years, MIP practices have struggled to go Beyond The First Fill because of mandates from the PBMs managing the majority of the nation’s insurance plans that require oral oncology prescriptions to be filled through mail-order pharmacies.

Not anymore.

When Prime Therapeutics launches IntegratedRx™ – Oncology in January 2022, more than 33 million members across 19 Blue Cross Blue Shield plans will have the potential to access medication from a projected 300 to 600 MIP practices.

“NCODA is rolling out a product that we need and we’re rolling out a network that will help raise awareness of the accreditation process that NCODA is building,” said Joe Leach, MD, Senior Vice President and Chief Medical Officer at Prime. “The timing is perfect. I’m excited to see what we can do together.”

Prime’s goal is end-to-end coordination across the entire treatment pathway, helping improve adherence, shortening time to dispense and creating a better member and provider experience from the first fill through the last fill.

The model makes Prime Therapeutics the only large PBM that doesn’t require patients to use a mail-order pharmacy.

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ACCREDITATION
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It will enable patients to receive cancer medications up to two days faster than traditional PBM models.

Prime believes IntegratedRx™ will result in significant savings for plan sponsors through lower medication costs and waste reduction through better integration.

“Most of our health plans have been very enthusiastic,” Leach said. “We expect very broad participation once we roll IntegratedRx™ – Oncology out to scale.”

A PROFOUND MOMENT

Prime began working with McKesson in October 2020 to develop the model. A working pilot was ready by February 2021 and then tested at three practices in Florida and Oregon. The practices are members of The US Oncology Network, which is supported by McKesson.

According to Prime, the pilot practices experienced better pharmacy average wholesale price (AWP) discounts, lower per member per month (PMPM) costs, improved adherence, improved time-to-medication, improved patient satisfaction and a more intimate patient experience by keeping prescriptions in-house.

“This is a profound moment,” Alwardt said. “This is, quite literally, a first in healthcare. I’ve been associated with networks of all sorts for more than 16 years, and there has never been one that centers on medically integrated dispensing as its core pharmacy.”

One of the practices where the pilot was tested was Regence, a nonprofit independent licensee of the Blue Cross and Blue Shield Association operating health plans in Oregon, Idaho, Utah and Washington.

While it’s still too early to analyze performance data, Regence Senior Vice President of Health Care Services & Chief Medical Officer Marion Couch MD, PhD, MBA, FACS, said feedback from both patients and cancer centers has been positive.

The program appears to show great promise, Couch said. It assures a tight connection with the cancer center and is “incredibly more convenient” for the patient, she noted, while at the same time also empowering for the pharmacist.

“The pharmacist has access to the electronic medical record (EMR). They can educate. They can be more involved. They’re part of the team,” Couch said. “It’s also more convenient for the member — they don’t have to go to a mail-order pharmacy — they can get it right there. And when you are struggling with cancer, that simplicity matters.”

NCODA ENTERS THE PICTURE

NCODA became involved in the development of IntegratedRx™ – Oncology project in Fall 2020, after Prime contacted Lisa Harrison, RPh, President, Specialty Distribution at AmerisourceBergen, a group purchasing organization (GPO), for her expertise in medically integrated pharmacy.

“Prime was interested in thinking through what a medically integrated dispensing network would look like, and over many months we discussed how we could put that network together,” Harrison said.

As a true believer in MIP, the moment and its potential were not lost on her.

“This is huge,” Harrison said. “It’s market-changing. It could change the paradigm, and that’s what we need to not only be successful for our providers, but also for our patients.”

Through her discussion with Prime, Harrison told the Integrated Rx™ – Oncology team about NCODA and the recently established ASCO/NCODA Standards. More importantly,

Harrison introduced key Prime executives to NCODA Executive Director & Founder Michael Reff.

STANDARDIZING EXCELLENCE

As someone who has toiled for close on five years to convince payers about the efficacy and benefits of MIP, Reff knew exactly what challenges Prime was facing.

“Prime had to convince the plans that this wasn’t just a financially-driven strategy for the doctors,” Reff explained.

“It wanted a standard, demonstrating quality and value, showing that the practice is actually doing what they say they are doing, not haphazardly filling prescriptions just to support their bottom line.”

“And that’s where NCODA accreditation comes in. Our CoE MIP program means practices will have better patient adherence, less waste, fewer unaddressed side effects and lower costs. We’re going to standardize and measure better customer service.”

Clearly, MIP accreditation is an idea that’s time has come, especially in the wake of the establishment of the ASCO/NCODA Standards.

Published in 2019 following extensive study and a high-quality systematic review of patient-centered best practices, the ASCO/NCODA standards provide the industry with a clear, concise model for MIP operations.

“Because of those established standards, we’re not reinventing the wheel,” Reff said. “We’re giving medically integrated pharmacies a program tailored to their needs, a program designed to help them reach and maintain the highest level of patient care.”

TIME IS RIPE FOR MIP STANDARDS

Due to the phenomenal growth of oral oncolytics in recent years, the need for such standards has never been greater. And because it acts as bridge
between oncology practices, pharmaceutical manufacturers and other MIP stakeholders, NCODA is ideally positioned to implement them.

Kashyap Patel, MD, Chief Executive Officer of Carolina Blood and Cancer Care Associates, put it this way: “I feel NCODA as an organization has evolved itself to a level where the transparency, the credibility, the expertise and the process and partnering with multiple outside stakeholders in the same space has reached maturity level to guide the practices that are all drinking from the same fire hose right now.”

“You can’t measure what we’re doing, we can’t measure the impact of what we’re doing, we can’t measure if we’re doing it,” said Lucio Gordan, MD, President and Managing Physician at Florida Cancer Specialists & Research Institute (FCS), and a member of the Executive Accreditation Council for the NCODA Center of Excellence.

“Data is important because if we don’t measure what we’re doing, we can’t really prove that we’re doing it,” said Lucio Gordan, MD, President and Managing Physician at Florida Cancer Specialists & Research Institute (FCS), and a member of the Executive Accreditation Council for the NCODA Center of Excellence.

Medically Integrated Pharmacy Accreditation program.

“Data allows us to self-correct, it helps us get to the next level,” Gordan said. “When we can put in the side-effect profile, the laboratory data and the financial toxicity each into a discrete box, it creates a very powerful story.”

**Benefits Both Patient and Practice**

And while patient care is first and foremost, NCODA CoE MIP Accreditation also is good for the practice itself.

“Going Beyond the First Fill is simply about reducing friction and being really intentional with patient interaction,” said Nathan H. Walcker, MBA, Chief Executive Officer for FCS.

Intentional interaction means “checking all the boxes” ahead of time to ensure patients understand all aspects of their healthcare. Yet maintaining a proactive culture also makes sense from a business standpoint, Walcker said.

“We’ve seen this time and time again—first impressions matter in the consumer arena. But we’re not selling cars or flipping burgers here,” Walcker said. “We are taking care of oncology patients. First impressions matter, and data has confirmed this in our practices at FCS.”

**Executive Accreditation Council & Accreditation Working Group to Oversee New NCODA Center of Excellence Program**

Two boards will help support NCODA’s Center of Excellence Medically Integrated Pharmacy Accreditation Program: the Executive Accreditation Council and the Accreditation Working Group.

**The Executive Accreditation Council** will serve to provide guidance on the CoE MIP accreditation program, insight on the current/future oncology ecosystem and network and program support.

Executive Accreditation Council members include Gury Doshi, MD | Texas Oncology; Lucio Gordan, MD | Florida Cancer Specialists & Research Institute; Michele Galito | ONS; Brian Morrissey, MBA | Pfizer; Stacey McCullough, PharmD | Tennessee Oncology; Jonas Congelli, RPH | HOACNY; Luis Razo, MD | Memorial Healthcare System; and other leaders to be determined.

**The Accreditation Working Group** will serve to provide guidance and assistance in the development and revision of accreditation tools and resources.

Working group members include Kara Sammons (Co-Chair), MS, PharmReg, CPhT | Rx To Go / Florida Cancer Specialists & Research Institute; Ryan Scott (Co-Chair), PharmD, MBA, MHA, CSp | Intermountain Specialty Pharmacy; Tiffany Mitchem, PharmD | Southern Cancer Center & Coastal Pharmacy; Kristina Hazard, PharmD, BCOP | Kaiser Permanente; Stephanie Parker, PharmD | Illinois CancerCare; Kyle Kitchen, PharmD | Utah Cancer Specialists; Hind Hamid, PharmD, BCOP | DCH Regional Medical Center; Brittnie Carden, PharmD | Mitchell Cancer Institute; Joy Pratt, PharmD | Tennessee Cancer Specialists; Ernestine Wigelsworth, PharmD | Cancer Specialists of North Florida; Chris Sellers, RPh | Texas Oncology; Jenelle Griffiths, PharmD, CPh, CSp | Baptist Health South Florida Specialty Pharmacy; Jonathan Heller, MHS, PHR, CMPE, DLM (ASCP) | Virginia Cancer Institute; Austin Cox, PharmD | Alabama Oncology; Meg Butler, PharmD | Clearview Cancer Institute; and Christie C. Smith, PharmD, MBA | AmerisourceBergen.

**GOING TO THE NEXT LEVEL**

The NCODA CoE MIP Standards, coupled with the new Prime Therapeutics IntegratedRx™ — Oncology program, are ideally positioned to bring medically integrated practices to the next level of oncology patient care.

It’s a goal that Reff has relentlessly pursued since 2015, when he first collaborated with a regional plan in Syracuse, New York. “By putting the patient first and being collaborative,” Reff said, “We’re changing the world!”

For more information on the NCODA Center of Excellence Medically Integrated Pharmacy Accreditation Program, contact Elizabeth.Bell@NCODA.org.
Oral Chemotherapy Education

Oral Chemotherapy Education (OCE) is an NCODA conceived, collaboratively executed resource that provides information about oral anti-cancer drugs and their side effects to both cancer patients and caregivers. OCE is a tool that empowers patients to become more active participants in their cancer treatment.

Scan This QR Code To Learn More:

Intravenous Cancer Treatment Education

Intravenous Cancer Treatment Education (IVE) is an NCODA conceived, collaboratively executed resource that provides information about IV anti-cancer drugs and their side effects to both cancer patients and caregivers. IVE provides the latest clinical treatment data about intravenous anti-cancer regimens in order to help caregivers and the patients they serve.

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