



## A STRONG START FOR SUPERIOR SURVIVAL<sup>1,2</sup>

VYXEOS demonstrated superior efficacy with longer overall survival compared to traditional chemotherapy<sup>a</sup> and provided an improved opportunity for transplant<sup>1</sup>





Liposomal daunorubicin and cytarabine (VYXEOS) is the ONLY treatment recommended in the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for induction in patients ≥60 years of age with therapy-related AML or antecedent MDS/CMML or AML-MRC (Category 1)<sup>3,b</sup>

### **INDICATION**

VYXEOS is indicated for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia (t-AML) or AML with myelodysplasia-related changes (AML-MRC).

### **IMPORTANT SAFETY INFORMATION**

## WARNING: DO NOT INTERCHANGE WITH OTHER DAUNORUBICIN AND/OR CYTARABINE-CONTAINING PRODUCTS

VYXEOS has different dosage recommendations than daunorubicin hydrochloride injection, cytarabine injection, daunorubicin citrate liposome injection, and cytarabine liposome injection. Verify drug name and dose prior to preparation and administration to avoid dosing errors.

### **Contraindications**

VYXEOS is contraindicated in patients with a history of serious hypersensitivity reactions to cytarabine, daunorubicin, or any component of the formulation.

Please see additional Important Safety Information on pages 24 and 25 and full Prescribing Information, including BOXED Warning.

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AML=acute myeloid leukemia; AML-MRC=AML with myelodysplasia-related changes; CMML=chronic myelomonocytic leukemia; MDS=myelodysplastic syndromes; NCCN=National Comprehensive Cancer Network; OS=overall survival.

<sup>&</sup>lt;sup>a</sup>7+3: cytarabine 100 mg/m<sup>2</sup> and daunorubicin 60 mg/m<sup>2</sup>.

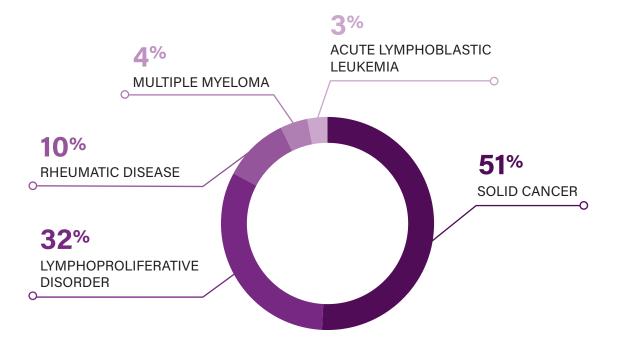
<sup>&</sup>lt;sup>b</sup>Category 1: Based upon high-level evidence, there is uniform NCCN consensus that the intervention is appropriate.<sup>3</sup>

## Approximately 30% of all AML cases are made up of secondary AML subtypes t-AML and AML-MRC<sup>4,5</sup>

### t-AML: ~4% to 10% of all AML cases4,5

WHO defines t-AML as AML that arises from treatment with cytotoxic therapy or ionizing radiotherapy for an unrelated disease or prior cancer<sup>6,7</sup>

### Prior malignancies associated with t-AML8,a



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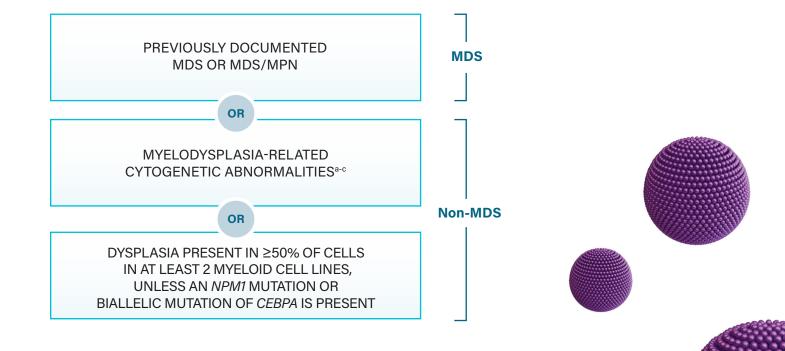
If your patient presents with a history of any of these malignancies, determine if they have been treated with a cytotoxic therapy or radiotherapy, as this may point to t-AML<sup>6,7</sup>

<sup>a</sup>Distribution of previous disease in 203 patients with t-AML regardless of treatment intent.

Data from a national, population-based study of 3055 patients diagnosed with AML from 2000 to 2013 in Denmark.<sup>8</sup>

### AML-MRC: ~25% of all AML cases4

WHO defines AML-MRC as ≥20% blasts in the peripheral blood or bone marrow and ANY of the following<sup>7,9</sup>:





Among the most common genetic abnormalities found in the unfavorable cytogenetic risk group in AML are -7/del(7q) and -5/del(5q)<sup>10,11</sup>

### **IMPORTANT SAFETY INFORMATION**

### Hemorrhage

Serious or fatal hemorrhage events, including fatal CNS hemorrhages, associated with prolonged thrombocytopenia, have occurred with VYXEOS. The overall incidence (grade 1-5) of hemorrhagic events was 74% in the VYXEOS arm and 56% in the control arm. The most frequently reported hemorrhagic event was epistaxis (36% in VYXEOS arm and 18% in control arm). Grade 3 or greater events occurred in 12% of VYXEOS-treated patients and in 8% of patients in the control arm. Fatal treatment-emergent CNS hemorrhage not in the setting of progressive disease occurred in 2% of patients in the VYXEOS arm and in 0.7% of patients in the control arm. Monitor blood counts regularly and administer platelet transfusion support as required.

Please see additional Important Safety Information on pages 24 and 25 and full Prescribing Information, including BOXED Warning.

<sup>a</sup>Complex karyotype: 3 or more abnormalities.<sup>7</sup>

<sup>b</sup>Unbalanced abnormalities: -7/del(7q), del(5q)/t(5q), i(17q)/t(17p), -13/del(13q), del(11q), del(12p)/t(12p), idic(X)(q13).<sup>7</sup>

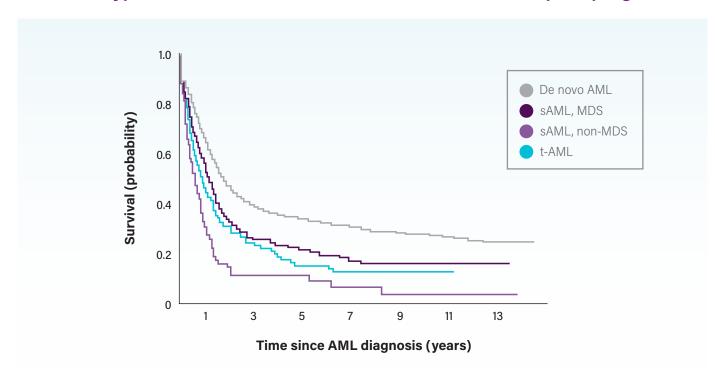
<sup>e</sup>Balanced abnormalities: t(11;16)(q23.3;p13.3), t(3;21)(q26.2;q22.1), t(1;3)(p36.3;q21.2), t(2;11)(p21;q23.3), t(5;12)(q32;p13.2), t(5;7)(q32;q11.2), t(5;17)(q32;p13.2), t(5;10)(q32;q21.2), t(3;5)(q25.3;q35.1).<sup>7</sup>





## Historically, there have been challenges in treating sAML<sup>®</sup>

### sAML subtypes t-AML and AML-MRC are associated with a poor prognosis<sup>8</sup>



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### It is critical to identify sAML prior to treatment8

### **IMPORTANT SAFETY INFORMATION**

#### Cardiotoxicity

VYXEOS contains daunorubicin, which has a known risk of cardiotoxicity. This risk may be increased in patients with prior anthracycline therapy, preexisting cardiac disease, previous radiotherapy to the mediastinum, or concomitant use of cardiotoxic drugs. Assess cardiac function prior to VYXEOS treatment and repeat prior to consolidation and as clinically required. Discontinue VYXEOS in patients with impaired cardiac function unless the benefit of initiating or continuing treatment outweighs the risk. VYXEOS is not recommended in patients with cardiac function that is less than normal.

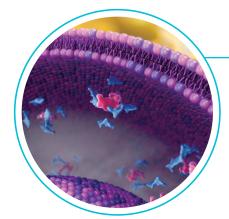
Total cumulative doses of non-liposomal daunorubicin greater than 550 mg/m² have been associated with an increased incidence of drug-induced congestive heart failure. The tolerable limit appears lower (400 mg/m²) in patients who received radiation therapy to the mediastinum. Calculate the lifetime cumulative anthracycline exposure prior to each cycle of VYXEOS. VYXEOS is not recommended in patients whose lifetime anthracycline exposure has reached the maximum cumulative limit.

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### Synergistic combination for potent delivery<sup>1,12</sup>

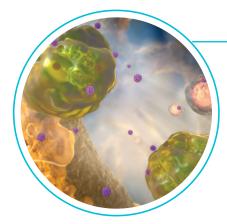
VYXEOS (CPX-351) is a unique combination liposome, engineered to deliver 2 established therapies at a synergistic ratio<sup>1,12</sup>

### Based on animal studies a...



#### **INCREASED ACTIVITY VS FREE DRUG**

The synergistic 1:5 molar ratio of daunorubicin and cytarabine has been shown to enhance the killing of leukemia cells in vitro and in murine models<sup>1</sup>

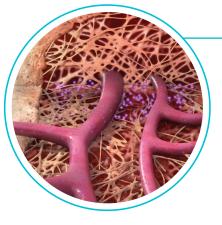


### **GREATER LEUKEMIA CELL UPTAKE**

VYXEOS liposomes enter the bone marrow and are preferentially taken up by leukemia cells to a greater extent than by normal bone marrow cells in a murine model<sup>1,13</sup>

 Their unique composition allows the negatively charged VYXEOS liposomes to interact with receptors that are overexpressed by leukemic cells compared to the expression by normal bone marrow cells<sup>13,14</sup>

### Based on pharmacokinetic Phase 1 trial data...



### PROLONGED DELIVERY

The longer half-life of VYXEOS resulted in greater drug exposure within the plasma and bone marrow than traditional chemotherapy<sup>1,15</sup>

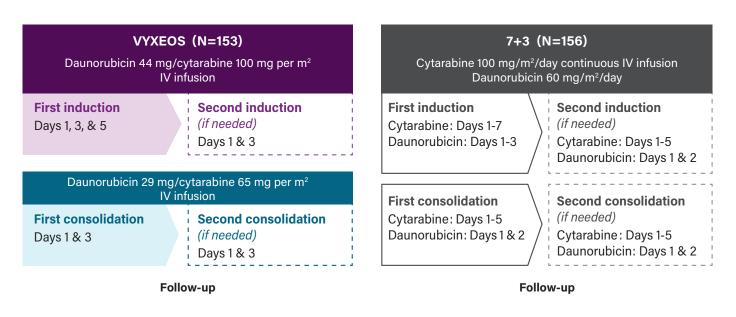
- Estimated median half-life of daunorubicin was 32 hours with VYXEOS vs 19 hours as free drug<sup>1,16</sup>
- Estimated median half-life of cytarabine was 40 hours with VYXEOS vs approximately 1 to 3 hours as free drug<sup>1,17</sup>



<sup>&</sup>lt;sup>a</sup>The clinical relevance of this is unknown.

## The FDA approval of VYXEOS (CPX-351) was based on data from a large, pivotal Phase 3 study<sup>2</sup>

The Phase 3 study was a multicenter, open-label, active-controlled, randomized trial of VYXEOS vs 7+3 in 309 patients (aged 60-75) with newly-diagnosed t-AML or AML-MRC<sup>1</sup>



Key eligibility <sup>2,18,19</sup>		Primary endpoint <sup>1</sup>
<ul> <li>Previously untreated</li> </ul>	<ul> <li>Able to tolerate intensive therapy</li> </ul>	<ul> <li>Overall survival (OS)<sup>a</sup></li> </ul>
• Aged 60-75	• ECOG PS 0-2	

- VYXEOS was administered as 90-minute intravenous infusions<sup>1</sup>
- Second induction was highly recommended for patients who did not achieve a response and was mandatory for patients achieving >50% reduction in percent blasts<sup>1</sup>
- Postremission therapy with HSCT was permitted either in place of or after consolidation chemotherapy<sup>1</sup>
- In the Phase 3 trial, a bone marrow assessment following induction was done between Days 14 and 21<sup>20</sup>
- A preplanned overall survival analysis was conducted based on the final 5-year follow-up results from the Phase 3 trial<sup>18</sup>

### **IMPORTANT SAFETY INFORMATION**

### **Hypersensitivity Reactions**

Serious or fatal hypersensitivity reactions, including anaphylactic reactions, have been reported with daunorubicin and cytarabine. Monitor patients for hypersensitivity reactions. If a mild or moderate hypersensitivity reaction occurs, interrupt or slow the rate of infusion with VYXEOS and manage symptoms. If a severe or life-threatening hypersensitivity reaction occurs, discontinue VYXEOS permanently, treat the symptoms, and monitor until symptoms resolve.

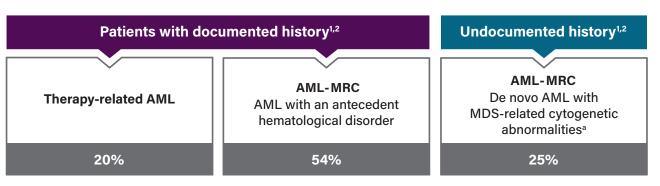
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#### <sup>a</sup>Overall survival was defined as date of randomization to death from any cause!

### ECOG=Eastern Cooperative Oncology Group; FDA=Food and Drug Administration; HSCT=hematopoietic stem cell transplant; IV=intravenous; PS=performance status

### sAML patient characteristics in the Phase 3 study

All patients in the Phase 3 study had difficult-to-treat sAML<sup>1,2</sup>



<sup>a</sup>De novo AML with MDS-related cytogenetic abnormalities was defined as patients having cytogenetic abnormalities characteristic of myelodysplasia based on 2008 WHO criteria.<sup>2,9</sup>

Baseline patient and disease characteristics <sup>1,2,21</sup>		VYXEOS (N=153) n (%)	7+3 (N=156) n (%)
Male/female		94/59 (61/39)	96/60 (62/38)
Median age (range)		68 (60, 75)	68 (60, 75)
ECOG	PS 0	37 (24)	45 (29)
	PS1	101 (66)	89 (57)
	PS 2	15 (10)	22 (14)
All patients with prior HMA exposure <sup>b</sup>		62 (41)	71 (46)
Number with cytogenetic risk by NCCN		143	146
	Favorable	7 (5)	5 (3)
Cytogenetic risk	Intermediate	64 (45)	58 (40)
	Unfavorable	72 (50)	83 (57)
Genetic mutations	FLT3	22 (14)	21 (14)
	NPM1	13 (9)	12 (8)
	CEBPA	12 (8)	5 (3)

41% of patients treated with VYXEOS had prior HMA exposure<sup>2</sup>



For patients >60 years old with AML, NCCN Guidelines® recommend selecting a treatment option based on patient performance status, comorbid conditions, and adverse features such as subtype rather than chronologic age alone<sup>3</sup>

<sup>&</sup>lt;sup>b</sup>Includes patients in the prespecified randomization strata of antecedent MDS with prior HMA exposure as well as patients in other strata (eg, t-AML, antecedent CMML) who had previously received HMAs.<sup>2</sup>



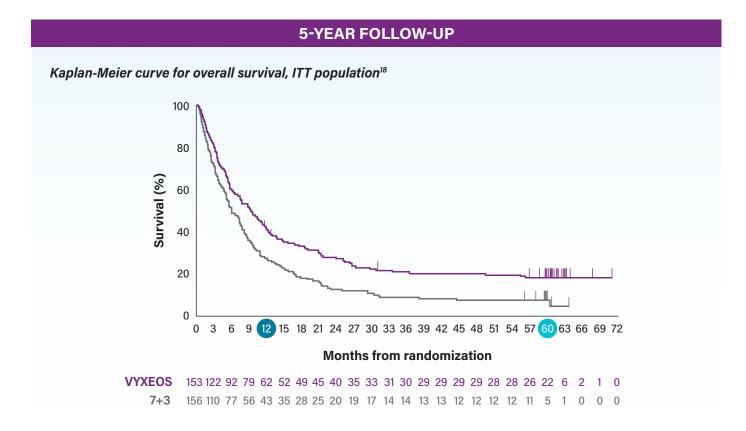




## Overall survival more than doubled at 5 years with VYXEOS (18%) vs 7+3 (8%) based on KM estimates<sup>1,18</sup>

Median overall survival (primary endpoint) of 9.6 months with VYXEOS vs 5.9 months with 7+3 (HR=0.69 [0.52, 0.90], *P*=0.005<sup>a</sup>)<sup>1</sup>

With median follow-up of 60 months, the improvement in OS was maintained with a stable hazard ratio 18



1-YEAR
KM-estimated survival<sup>2</sup>

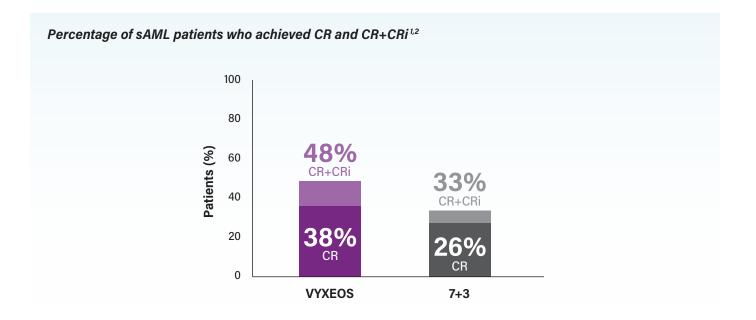
**VYXEOS: 42%** 7+3: 28%

**5-YEAR** KM-estimated survival<sup>18</sup>

**VYXEOS: 18%** 7+3: 8%

## Strive for higher remission rates in sAML with VYXEOS<sup>1,2</sup>

Almost half of sAML patients treated with VYXEOS achieved CR+CRi<sup>2</sup>





<sup>&</sup>lt;sup>a</sup>P value is 2-sided.<sup>1</sup>

### **IMPORTANT SAFETY INFORMATION**

#### Copper Overload

VYXEOS contains copper. Consult with a hepatologist and nephrologist with expertise in managing acute copper toxicity in patients with Wilson's disease treated with VYXEOS. Monitor total serum copper, serum non-ceruloplasmin-bound copper, 24-hour urine copper levels, and serial neuropsychological examinations during VYXEOS treatment in patients with Wilson's disease or other copper-related metabolic disorders. Use only if the benefits outweigh the risks. Discontinue in patients with signs or symptoms of acute copper toxicity.



# Exploratory post hoc analysis of patients who achieved CR or CRi and did not undergo transplant in the Phase 3 trial<sup>22,a</sup>



### Limitations of subanalysis<sup>22</sup>

- This subgroup analysis was exploratory and not powered to determine statistical significance. No efficacy conclusions about OS following CR or CRi can be drawn from this analysis
- Results should be interpreted with caution, as this analysis was not prespecified and was conducted in a small, nonrandomized subgroup (n=61)<sup>22</sup>
- The treatment effect of this nonrandomized subgroup was possibly confounded by unbalanced baseline characteristics

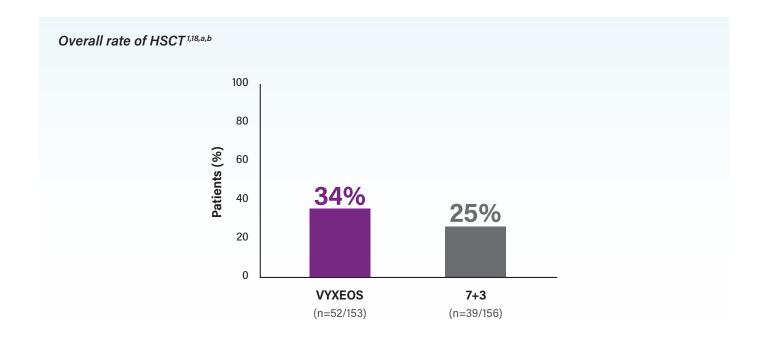
### **IMPORTANT SAFETY INFORMATION**

#### **Tissue Necrosis**

Daunorubicin has been associated with severe local tissue necrosis at the site of drug extravasation. Administer VYXEOS by the intravenous route only. Do not administer by intramuscular or subcutaneous route.

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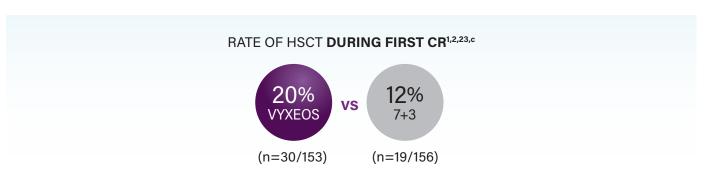
## For sAML patients whose treatment goals align with transplant, start with VYXEOS<sup>1</sup>



<sup>a</sup>First CR, induction failure, or as salvage after relapse.

bAt 5-year follow-up, HSCT had been received by 53/153 (35%) and 39/156 (25%) patients in the VYXEOS and 7+3 arms, respectively.18

## A greater proportion of patients who achieved first CR with VYXEOS subsequently underwent HSCT<sup>23</sup>

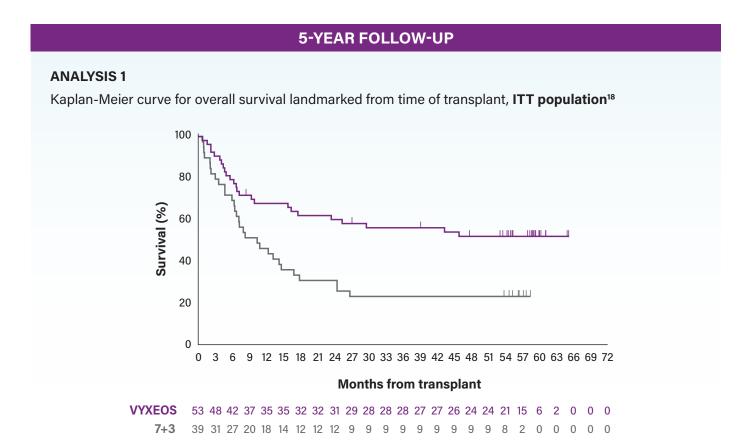


°First CR after 1 or 2 induction cycles.23

The goal of chemotherapy is to eliminate as many leukemia cells from the body as possible to achieve remission,<sup>3,24</sup> and low leukemic burden impacts outcomes of HSCT<sup>25</sup>



## Exploratory post hoc analyses of 5-year OS in patients who received HSCT in the Phase 3 trial<sup>18</sup>

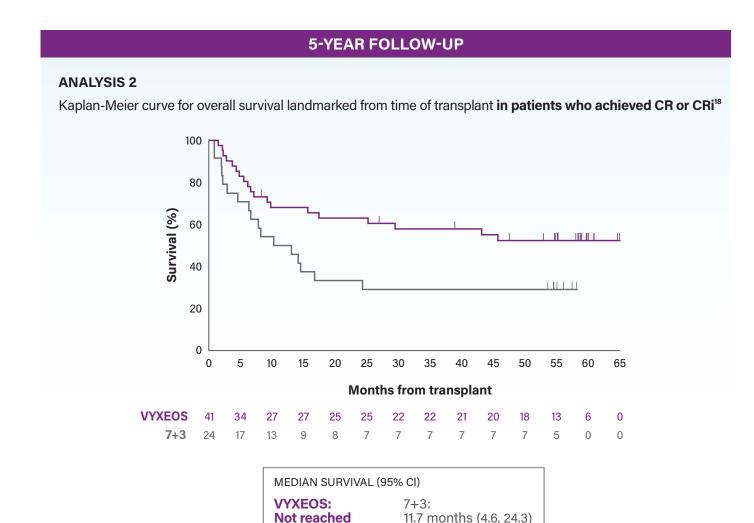


MEDIAN SURVIVAL (95% CI)

VYXEOS: 7+3:
Not reached 10.3 months (6.2, 16.7)
(n=25/53) (n=30/39)

### Limitations of subanalysis<sup>18</sup>

- This subgroup analysis was exploratory and not powered to determine statistical significance. No efficacy conclusions about OS following HSCT can be drawn from this analysis
- Results should be interpreted with caution, as this analysis was not prespecified and was conducted in a small, nonrandomized subgroup (n=92)<sup>18</sup>
- The treatment effect of this nonrandomized subgroup was possibly confounded by unbalanced baseline characteristics
  - A higher proportion of patients proceeding to HSCT in the VYXEOS arm (77%) were in CR/CRi as compared with the 7+3 arm (62%)<sup>18</sup>
  - To address this limitation, Analysis 2 (right) evaluated only those patients in each treatment arm who were in CR/CRi at the time they received HSCT<sup>18</sup>



### Limitations of subanalysis<sup>18</sup>

• This subgroup analysis was exploratory and not powered to determine statistical significance. No efficacy conclusions about OS following HSCT after CR or CRi can be drawn from this analysis

(n=19/41)

• Results should be interpreted with caution, as this analysis was not prespecified and was conducted in a small, nonrandomized subgroup (n=65)<sup>18</sup>

(n=17/24)

 The treatment effect of this nonrandomized subgroup was possibly confounded by unbalanced baseline characteristics

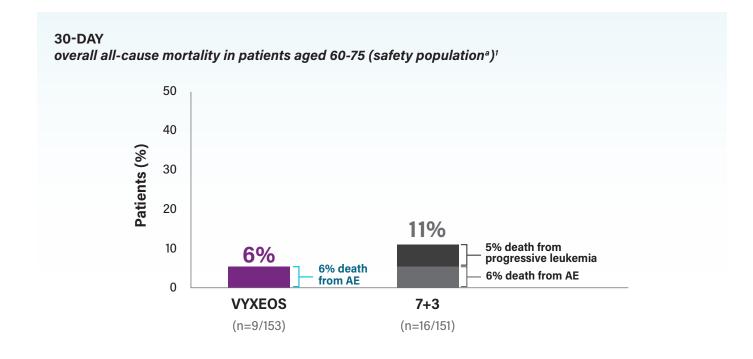
### **IMPORTANT SAFETY INFORMATION**

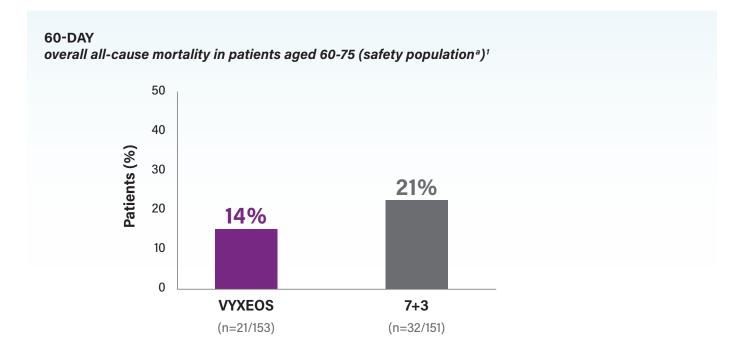
### **Embryo-Fetal Toxicity**

VYXEOS can cause embryo-fetal harm when administered to a pregnant woman. Patients should avoid becoming pregnant while taking VYXEOS. If VYXEOS is used during pregnancy or if the patient becomes pregnant while taking VYXEOS, apprise the patient of the potential risk to a fetus. Advise females and males of reproductive potential to use effective contraception during treatment and for 6 months following the last dose of VYXEOS.



## VYXEOS was associated with lower 30- and 60-day mortality rates compared to 7+3<sup>1</sup>





- 9 patients each in the VYXEOS arm (6%) and control arm (6%) had a fatal adverse reaction on treatment or within 30 days of treatment that was not in the setting of progressive disease<sup>1</sup>
- 8 patients in the control arm (5%) died within 30 days of treatment due to progressive leukemia<sup>1</sup>
- Fatal adverse reactions in the VYXEOS arm included infection, CNS hemorrhage, and respiratory failure<sup>1</sup>

<sup>a</sup>The safety population included all patients in the VYXEOS cohort and 151 patients from the 7+3 cohort (5 patients withdrew consent before the receipt of treatment).<sup>2</sup>

## Safety profile in the Phase 3 trial consistent with 7+3<sup>1</sup>

Fatal treatment-emergent CNS hemorrhage not in the setting of progressive disease occurred in 2% of patients in the VYXEOS arm and 0.7% in the control arm<sup>1</sup>

Common adverse reactions (≥20% incidence in the VYXEOS arm) during the induction phase¹

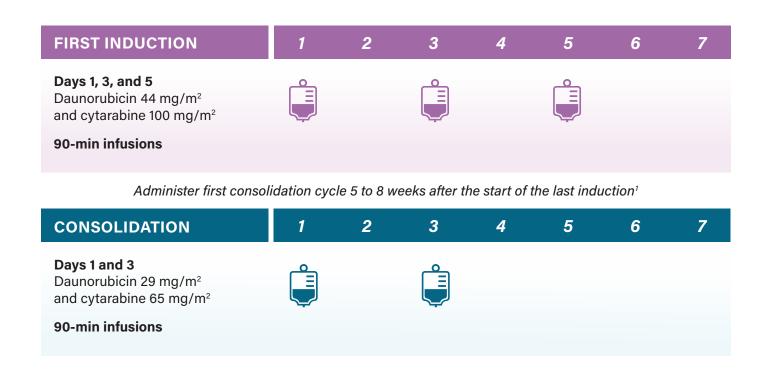
Adverse reaction	All gı	radesª	Grades	3 to 5ª
	VYXEOS (N=153) n (%)	7+3 (N=151) n (%)	VYXEOS (N=153) n (%)	7+3 (N=151) n (%)
Hemorrhage	107 (70)	74 (49)	15 (10)	9 (6)
Febrile neutropenia	104 (68)	103 (68)	101 (66)	102 (68)
Rash	82 (54)	55 (36)	8 (5)	2 (1)
Edema	78 (51)	90 (60)	2 (2)	5 (3)
Nausea	72 (47)	79 (52)	1 (1)	1 (1)
Diarrhea/colitis	69 (45)	100 (66)	4 (3)	10 (7)
Mucositis	67 (44)	69 (46)	2 (1)	7 (5)
Constipation	61 (40)	57 (38)	0	0
Musculoskeletal pain	58 (38)	52 (34)	5 (3)	4 (3)
Abdominal pain	51 (33)	45 (30)	3 (2)	3 (2)
Cough	51 (33)	34 (23)	0	1 (1)
Headache	51 (33)	36 (24)	2 (1)	1 (1)
Dyspnea	49 (32)	51 (34)	17 (11)	15 (10)
Fatigue	49 (32)	58 (38)	8 (5)	8 (5)
Arrhythmia	46 (30)	41 (27)	10 (7)	7 (5)
Decreased appetite	44 (29)	57 (38)	2 (1)	5 (3)
Pneumonia (excluding fungal)	39 (26)	35 (23)	30 (20)	26 (17)
Sleep disorders	38 (25)	42 (28)	2 (1)	1 (1)
Bacteremia (excluding sepsis)	37 (24)	37 (25)	35 (23)	31 (21)
Vomiting	37 (24)	33 (22)	0	0
Chills	35 (23)	38 (25)	0	0
Hypotension	30 (20)	32 (21)	7 (5)	1 (1)
Non-conduction cardiotoxicity	31 (20)	27 (18)	13 (9)	15 (10)

<sup>&</sup>lt;sup>a</sup>Adverse reactions were graded using National Cancer Institute Common Terminology Criteria for Adverse Events version 3.0.

Other adverse reactions that occurred in ≥10% of patients in the VYXEOS arm included: dizziness, fungal infection, hypertension, hypoxia, upper respiratory infections (excluding fungal), chest pain, pyrexia, catheter/device/injection site reaction, delirium, pleural effusion, anxiety, pruritus, sepsis (excluding fungal), hemorrhoids, petechiae, renal insufficiency, transfusion reactions, and visual impairment (except bleeding)¹



## VYXEOS is a fixed course of therapy that allows patients time off sAML treatment<sup>1,a,b</sup>



The majority of patients received induction with VYXEOS in an inpatient setting during the Phase 3 trial<sup>26</sup>

Second induction (if needed)1

Daunorubicin 44 mg/m<sup>2</sup> and cytarabine 100 mg/m<sup>2</sup> liposome on Days 1 and 3

• In patients not achieving a response, start 2 to 5 weeks after first induction 51% of patients received consolidation with VYXEOS in an outpatient setting during the Phase 3 trial<sup>27</sup>

Second consolidation (if needed)<sup>1</sup>

Daunorubicin 29 mg/m<sup>2</sup> and cytarabine 65 mg/m<sup>2</sup> liposome on Days 1 and 3

• 5 to 8 weeks after the start of first consolidation in patients who do not show disease progression or unacceptable toxicity

### **Dosing considerations**

- Prior to initiating each cycle, calculate the prior cumulative anthracycline exposure for the patient¹
- Assess cardiac function, complete blood counts, and liver and renal function before each consolidation cycle<sup>1</sup>
- Do not start consolidation until the absolute neutrophil count (ANC) recovers to greater than 0.5 Gi/L and the platelet count recovers to greater than 50 Gi/L in the absence of unacceptable toxicity1

## Factors to consider for outpatient administration with VYXEOS and administration with VYXEOS

### PATIENT FACTORS



### Deemed stable by medical team<sup>28-31</sup>

 ECOG PS 0-1 and no significant comorbidities such as kidney or cardiopulmonary diseases or active uncontrolled infections

### Capable of self-care activities<sup>28,30</sup>

 Ability to consistently attend all scheduled visits and participate in self-care activities such as taking temperature

### In close proximity to their infusion center<sup>28,30</sup>

 Ability to consistently attend all scheduled visits for treatment and monitoring

### **INSTITUTIONAL FACTORS**



### Timely access to supportive care that may include<sup>28,30</sup>

- Blood and platelet transfusion support
- Prophylactic antimicrobial implementation

### A multidisciplinary team that can<sup>28,30</sup>

- Coordinate and manage expectations for outpatient care with the patient
- Assess and evaluate lab results
- Monitor symptoms, side effects, and/or signs of toxicity

### Inpatient access that allows for<sup>28</sup>

3

 Unplanned admission due to urgent adverse events

### MOST COMMON ADVERSE REACTIONS

The most common adverse reactions (incidence ≥25%) were hemorrhagic events (74%), febrile neutropenia (70%), rash (56%), edema (55%), nausea (49%), mucositis (48%), diarrhea (48%), constipation (42%), musculoskeletal pain (43%), fatigue (39%), abdominal pain (36%), dyspnea (36%), headache (35%), cough (35%), decreased appetite (33%), arrhythmia (31%), pneumonia (31%), bacteremia (29%), chills (27%), sleep disorders (26%), and vomiting (25%).

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°Outpatient administration may decrease the number of days a patient needs to be hospitalized for treatment.21



<sup>&</sup>lt;sup>a</sup>In the Phase 3 trial, site of induction and consolidation administration—inpatient vs outpatient was not defined. The decision was left to the discretion of the investigators according to the standard practices of their institution.<sup>26,27</sup>

<sup>&</sup>lt;sup>b</sup>Most patients in the Phase 3 trial received induction in an inpatient setting.<sup>26</sup>

## Institutions have evaluated administering VYXEOS in the outpatient setting<sup>32,33</sup>

Two small, postapproval, single-institution studies assessed the feasibility of adult patients receiving VYXEOS induction in the inpatient/outpatient (IPOP) setting<sup>32,33,a</sup>

Treatment in the IPOP setting enables appropriate patients to receive induction in an outpatient setting with inpatient admission scheduled or as needed for continued monitoring and subsequent treatment<sup>32,33</sup>



IPOP-eligible patients who received VYXEOS infusions in an outpatient setting were closely monitored<sup>32,33</sup>

- In a study by Kubal et al, patients were excluded for IPOP if they had increased risk for tumor lysis including white count >50K, increased creatine and uric acid, active cardiopulmonary symptoms, ECOG PS >2, or lacked a caregiver or were unable to reside within 60 minutes of the treating facility<sup>32</sup>
  - Patients were evaluated each day with CMP and uric acid and phosphorus measures.
     Planned admission occurred on Day 6 for continued care<sup>32</sup>
- In another study, by Deutsch et al, patients were excluded if they had signs or symptoms of active infection or cardiopulmonary disease, were at risk for tumor lysis syndrome, had ECOG PS >2, or did not have an appropriate caregiver or transportation to the cancer center<sup>33</sup>
  - Patients were monitored at least every other day until count recovery and admitted for continued care if complications occurred<sup>33</sup>

<sup>a</sup>Most patients in the Phase 3 trial received induction in an inpatient setting.<sup>26</sup>

#### **Study information**

In a small, single-center pilot study by Kubal et al, 22 patients received a full induction course of VYXEOS. Of these, 64% (n=14; median age 69) received induction in an IPOP setting, and 93% of those patients (n=13) were admitted for continued care on Day 6, as planned. One patient was admitted on Day 2 of induction.<sup>32</sup>

In a small, single-center pilot study by Deutsch et al, 12 patients received a full induction course of VYXEOS, with 58% (n=7; median age 72) receiving induction in an IPOP setting. Of these patients, 86% (n=6) were eventually admitted for continued care; all admissions were due to infection complications. One patient was admitted prior to completing the third induction dose.<sup>33</sup>

## One institution's experience with VYXEOS administration in the outpatient setting<sup>30</sup>

Real-world experience from one institution's implementation of VYXEOS administration in the outpatient setting<sup>30</sup>

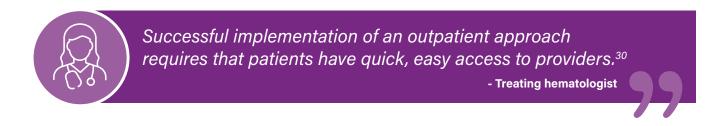
### Patient factors for outpatient treatment<sup>30</sup>

- No active, uncontrolled infections
- Ability to travel to
  - Infusion center during the first week of therapy for infusions and supportive care
  - Infusion center twice per week after initial induction for continued monitoring
  - A cancer center close to home to help with transfusion support if infusion center is too distant

### Institutional factors to conduct outpatient treatment<sup>30</sup>

- Access to advanced practice providers (APPs)
- Multidisciplinary team trained in transfusion support, symptom management, and transfer of patients to the inpatient setting

There is no planned day of admission; however, when treating patients with VYXEOS, it is not uncommon for a patient to experience fevers. When fever persists, inpatient admission allows further observation and intervention<sup>30</sup>



### **IMPORTANT SAFETY INFORMATION**

### **Contraindications**

VYXEOS is contraindicated in patients with a history of serious hypersensitivity reactions to cytarabine, daunorubicin, or any component of the formulation.



### A case study: patient presentation

### Elizabeth | 67 years old | retired

- ECOG PS 1
- Was diagnosed with lower-risk MDS (IPSS low) 2 years ago and has been under observation since then
- Received 3 blood transfusions since diagnosis
- Contacts her hematologist after 3 consecutive days of severe fatigue, shortness of breath, and chest pain
- Married; husband is also retired
- Lives a short drive from hospital

### LAB RESULTS

	CBC results	Reference range <sup>34,35</sup>
WBC	4.1 x 10 <sup>9</sup> /L	4.5-11 x 10 <sup>9</sup> /L
ANC	1.4 x 10 <sup>9</sup> /L	2.0-8.25 x 10 <sup>9</sup> /L
Hb	8.5 g/dL	12-16 g/dL
Hct	20%	36%-47%
RBC	1.9 x 10 <sup>12</sup> /L	4.2-5.9 x 10 <sup>12</sup> /L
MCV	115 fL	80-100 fL
PLT	55 x 10 <sup>9</sup> /L	150-350 x 10 <sup>9</sup> /L

### **ANALYSIS AND FINDINGS**

Aspirate smear	Bone marrow biopsy	Flow cytometry
45% blasts with multilineage dysplasia (MLD)	50% blasts	46% myeloblasts

Cytogenetics and PCR molecular findings: results pending

### **DIAGNOSIS**

Based on her medical history and test results, Elizabeth is diagnosed with AML-MRC

Based on her condition and practical considerations, Elizabeth is deemed a candidate for outpatient induction

### **PATIENT CONSIDERATIONS**

- Elizabeth lives within 30 minutes of hospital and has a reliable caregiver who will provide transportation for appointments as needed
- Elizabeth has consistently attended all scheduled appointments with her hematologist and has clearly communicated symptoms she has experienced

CBC=complete blood count; Hb=hemoglobin; Hct=hematocrit; IPSS=International Prognostic Scoring System; MCV=mean corpuscular volume; PCR=polymerase chain reaction; PLT=platelet; RBC=red blood cell; WBC=white blood cell.

### PRACTICE CONSIDERATIONS

- Practice has multidisciplinary support staff needed to coordinate outpatient care with the patient, assess and evaluate lab results, and monitor symptoms, side effects, and/or signs of toxicity
- Practice has access to supportive care, including blood and platelet transfusion support
- Practice has inpatient access in case unplanned admission is required due to urgent adverse event(s)

### VYXEOS reimbursement and support

### J code issued for VYXEOS

Permanent, product-specific HCPCS J code for VYXEOS			
J9153	Dosage	Billing	
	Injection, liposomal, 1 mg daunorubicin and 2.27 mg cytarabine	units per dose: 1	
		units per vial: 44	



The JazzCares Program is sponsored by Jazz Pharmaceuticals to help improve access to Jazz products for appropriate patients. Dedicated JazzCares specialists are available to assist patients and practices with coverage and reimbursement support for Jazz products.

### Ask our JazzCares specialists about...



### **Understanding insurance coverage**

Resources to help patients understand their insurance coverage and find information on sources of financial support.



### Paying for medication (commercially insured patients only)<sup>a</sup>

Only available for certain Jazz products.

Provides eligible patients with assistance for out-of-pocket costs, subject to annual maximum.



### Free-drug program for eligible patients

Designed to provide Jazz products at no cost to patients who are uninsured or deemed uninsured due to lack of coverage for a Jazz product.

Subject to financial and residency eligibility criteria.

Call the support hotline 1-855-5VYXEOS (1-855-589-9367), Monday through Friday between 8 AM and 8 PM ET to speak with a representative

<sup>a</sup>Insurance coverage and plans may vary. The JazzCares program provides general information only and is not a guarantee of any coverage or reimbursement outcome. All treatment decisions rest solely with the treating physician or qualified healthcare professional.

You can also request to be contacted by an Access and Reimbursement Manager (ARM) to assist you with additional reimbursement-related questions.



## VYXEOS distribution partners

### **Specialty Distributors**

VYXEOS (daunorubicin and cytarabine) is available for purchase from the authorized Specialty Distributors listed below. Verify that your facility has an account with their Specialty Distributor before ordering. If not, they should contact their Specialty Distributor. The facility should also contact their Specialty Distributor with questions regarding product returns.

### **ASD HEALTHCARE** Online https://www.asdhealthcare.com

Phone

1-800-746-6273

Fax

1-800-547-9413

(C) Email

AmerisourceBergen

asd.customerservice@asdhealthcare.com

### **ONCOLOGY SUPPLY**

https://www.oncologysupply.com

1-800-633-7555



Fax

Email

1-800-248-8205

custserv@oncologysupply.com

### CARDINAL SPECIALTY PHARMACEUTICAL DISTRIBUTION

**Online** 

Order Express (hospitals): https://orderexpress.cardinalhealth.com Specialty Online (clinics): https://specialtyonline.cardinalhealth.com



Cardinal Health

Phone 1-877-453-3972



Fax

1-877-274-9897

SPDOncologyTeam@cardinalhealth.com







https://connect.mckesson.com



Phone

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Fax

1-888-752-7626



Email

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### McKESSON SPECIALTY HEALTH



McKesson

Online

http://mscs.mckesson.com



1-800-482-6700



1-800-289-9285



MSH-CustomerCare@mckesson.com

### VYXEOS is now partnering with certain group purchasing organizations (GPOs)

- ION Solutions (AmerisourceBergen)
- Onmark GPO (McKesson Specialty Health)
- Unity GPO (The US Oncology Network/McKesson Specialty Health)
- VitalSource (Cardinal Health)



### Important Safety Information

#### **INDICATION**

VYXEOS is indicated for the treatment of adults with newly-diagnosed therapy-related acute myeloid leukemia (t-AML) or AML with myelodysplasia-related changes (AML-MRC).

### IMPORTANT SAFETY INFORMATION

## WARNING: DO NOT INTERCHANGE WITH OTHER DAUNORUBICIN AND/OR CYTARABINE-CONTAINING PRODUCTS

VYXEOS has different dosage recommendations than daunorubicin hydrochloride injection, cytarabine injection, daunorubicin citrate liposome injection, and cytarabine liposome injection. Verify drug name and dose prior to preparation and administration to avoid dosing errors.

### Contraindications

VYXEOS is contraindicated in patients with a history of serious hypersensitivity reactions to cytarabine, daunorubicin, or any component of the formulation.

### **Warnings and Precautions**

### Hemorrhage

Serious or fatal hemorrhage events, including fatal CNS hemorrhages, associated with prolonged thrombocytopenia, have occurred with VYXEOS. The overall incidence (grade 1-5) of hemorrhagic events was 74% in the VYXEOS arm and 56% in the control arm. The most frequently reported hemorrhagic event was epistaxis (36% in VYXEOS arm and 18% in control arm). Grade 3 or greater events occurred in 12% of VYXEOS-treated patients and in 8% of patients in the control arm. Fatal treatment-emergent CNS hemorrhage not in the setting of progressive disease occurred in 2% of patients in the VYXEOS arm and in 0.7% of patients in the control arm. Monitor blood counts regularly and administer platelet transfusion support as required.

### Cardiotoxicity

VYXEOS contains daunorubicin, which has a known risk of cardiotoxicity. This risk may be increased in patients with prior anthracycline therapy, preexisting cardiac disease, previous radiotherapy to the mediastinum, or concomitant use of cardiotoxic drugs. Assess cardiac function prior to VYXEOS treatment and repeat prior to consolidation and as clinically required. Discontinue VYXEOS in patients with impaired cardiac function unless the benefit of initiating or continuing treatment outweighs the risk. VYXEOS is not recommended in patients with cardiac function that is less than normal.

Total cumulative doses of non-liposomal daunorubicin greater than 550 mg/m² have been associated with an increased incidence of drug-induced congestive heart failure. The tolerable limit appears lower (400 mg/m²) in patients who received radiation therapy to the mediastinum. Calculate the lifetime cumulative anthracycline exposure prior to each cycle of VYXEOS. VYXEOS is not recommended in patients whose lifetime anthracycline exposure has reached the maximum cumulative limit.

### **Hypersensitivity Reactions**

Serious or fatal hypersensitivity reactions, including anaphylactic reactions, have been reported with daunorubicin and cytarabine. Monitor patients for hypersensitivity reactions. If a mild or moderate hypersensitivity reaction occurs, interrupt or slow the rate of infusion with VYXEOS and manage symptoms. If a severe or life-threatening hypersensitivity reaction occurs, discontinue VYXEOS permanently, treat the symptoms, and monitor until symptoms resolve.

### **Copper Overload**

VYXEOS contains copper. Consult with a hepatologist and nephrologist with expertise in managing acute copper toxicity in patients with Wilson's disease treated with VYXEOS. Monitor total serum copper, serum non-ceruloplasmin-bound copper, 24-hour urine copper levels, and serial neuropsychological examinations during VYXEOS treatment in patients with Wilson's disease or other copper-related metabolic disorders. Use only if the benefits outweigh the risks. Discontinue in patients with signs or symptoms of acute copper toxicity.

### Warnings and Precautions, continued

#### **Tissue Necrosis**

Daunorubicin has been associated with severe local tissue necrosis at the site of drug extravasation. Administer VYXEOS by the intravenous route only. Do not administer by intramuscular or subcutaneous route.

### **Embryo-Fetal Toxicity**

VYXEOS can cause embryo-fetal harm when administered to a pregnant woman. Patients should avoid becoming pregnant while taking VYXEOS. If VYXEOS is used during pregnancy or if the patient becomes pregnant while taking VYXEOS, apprise the patient of the potential risk to a fetus. Advise females and males of reproductive potential to use effective contraception during treatment and for 6 months following the last dose of VYXEOS.

### MOST COMMON ADVERSE REACTIONS

The most common adverse reactions (incidence ≥25%) were hemorrhagic events (74%), febrile neutropenia (70%), rash (56%), edema (55%), nausea (49%), mucositis (48%), diarrhea (48%), constipation (42%), musculoskeletal pain (43%), fatigue (39%), abdominal pain (36%), dyspnea (36%), headache (35%), cough (35%), decreased appetite (33%), arrhythmia (31%), pneumonia (31%), bacteremia (29%), chills (27%), sleep disorders (26%), and vomiting (25%).

### Please see full Prescribing Information, including BOXED Warning.

References: 1. VYXEOS [package insert]. Palo Alto, CA: Jazz Pharmaceuticals. 2. Lancet JE, Uy GL, Cortes JE, et al. CPX-351 (cytarabine and daunorubicin) liposome for injection versus conventional cytarabine plus daunorubicin in older patients with newly diagnosed secondary acute myeloid leukemia. J Clin Oncol. 2018;36(26):2684-2692. 3. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Acute Myeloid Leukemia V.3.2020, © National Comprehensive Cancer Network, Inc. 2019, All rights reserved. Accessed December 23, 2019. To view the most recent and complete version of the guideline, go online to NCCN.org. 4. Nagel G, Weber D, Fromm E, et al; German-Austrian AML Study Group (AMLSG). Epidemiological, genetic, and clinical characterization by age of newly diagnosed acute myeloid leukemia based on an academic population-based registry study (AMLSG BiO). Ann Hematol. 2017:96(12):1993-2003. 5. Leone G. Mele L. Pulsoni A. et al. The incidence of secondary leukemias. Haematologica. 1999;84(10):937-945. 6. Czader M, Orazi A. Therapy-related myeloid neoplasms. Am J Clin Pathol. 2009;132(3):410-425. 7. Arber DA, Orazi A, Hasserijan R, et al. The 2016 revision to the World Health Organization classification of myeloid neoplasms and acute leukemia. Blood. 2016;127(20):2391-2405. 8. Granfeldt Østgård LS, Medeiros BC, Sengeløv H, et al. Epidemiology and clinical significance of secondary and therapy-related acute myeloid leukemia; a national population-based cohort study. J Clin Oncol. 2015;33(31):3641-3649. 9. Vardiman JW, Thiele J, Arber DA, et al. The 2008 revision of the World Health Organization (WHO) classification of myeloid neoplasms and acute leukemia: rationale and important changes. Blood. 2009;114(5):937-951. 10. Byrd JC, Mrózek K, Dodge RK, et al. Pretreatment cytogenetic abnormalities are predictive of induction success, cumulative incidence of relapse, and overall survival in adult patients with de novo acute myeloid leukemia; results from Cancer and Leukemia Group B (CALGB 8461). Blood. 2002;100(13):4325-4336. 11. Kumar CC. Genetic abnormalities and challenges in the treatment of acute myeloid leukemia. Genes Cancer. 2011;2(2):95-107. 12. Mayer LD, Tardi P, Louie AC. CPX-351: a nanoscale liposomal co-formulation of daunorubicin and cytarabine with unique biodistribution and tumor cell uptake properties, Int J Nanomedicine 2019;14:3819-3830. 13. Lim WS, Tardi PG, Dos Santos N, et al. Leukemia-selective uptake and cytotoxicity of CPX-351, a synergistic fixed-ratio cytarabine:daunorubicin formulation, in bone marrow xenografts. Leuk Res. 2010;34(9):1214-1223. 14. Dicko A, Kwak S, Frazier AA, et al. Biophysical characterization of a liposoma formulation of cytarabine and daunorubicin. Int J Pharm. 2010;391(1-2):248-259. 15. Feldman EJ, Lancet JE, Kolitz JE, et al. First-in-man study of CPX-351; a liposomal carrier containing cytarabine and daunorubicin in a fixed 5:1 molar ratio for the treatment of relapsed and refractory acute myeloid leukemia. J Clin Oncol. 2011;29(8):979-985. 16. Daunorubicin hydrochloride injection [package insert]. Eatontown, NJ: Hikma Pharmaceuticals USA, Inc; 2015. 17. Cytarabine injection [package insert]. Lake Forest, IL: Hospira, Inc; 2019. 18. Lancet JE, Uy GL, Newell LF, et al. Five-year final results of a phase 3 study of CPX-351 versus 7+3 in older adults with newly diagnosed high-risk/secondary AML. Presented at: American Society of Clinical Oncology ASCO20 Virtual Scientific Program; May 29-31, 2020. Poster 283. 19. US National Institutes of Health. ClinicalTrials.gov. Phase III study of CPX-351 versus 7+3 in patients 60-75 years old with untreated high risk (secondary) acute myeloid leukemia (301). https://www.clinicaltrials.gov/ct2/show/NCT01696084. Last updated February 27, 2018. Accessed June 26, 2020.

20. Data on File (VYX-2018-003). Jazz Pharmaceuticals, Inc. 21. Data on File (VYX-2018-013). Jazz Pharmaceuticals, Inc. 22. Lin TL, Ryan RJ, Faderl S, et al. Outcomes in older patients with high-risk/secondary AML who achieved remission with CPX-351 versus 7+3 but did not undergo transplant: phase 3 exploratory analysis. Presented at: American Society of Clinical Oncology ASCO20 Virtual Scientific Program; May 29-31, 2020, Poster 310, 23, Lin TL, Medeiros BC, Uv GL, et al. Outcomes by number of induction cycles with CPX-351 vs 7+3 chemotherapy in older adults with newly diagnosed high-risk/secondary acute myeloid leukemia (sAML). Presented at: American Society of Clinical Oncology Annual Meeting; June 1-5, 2018; Chicago, IL. Poster 7040. 24. Wang ES. Treating acute myeloid leukemia in older adults. Hematology Am Soc Hematol Educ Program. 2014;2014(1):14-20. 25. Zhou Y, Othus M, Araki D, et al. Pre- and post-transplant quantification of measurable ('minimal') residual disease via multiparameter flow cytometry in adult acute myeloid leukemia. Leukemia, 2016;30(7):1456-1464, 26, Kolitz JF, Strickland SA, Cortes JF, et al. Efficacy by consolidation administration site: subgroup analysis of a phase 3 study of CPX-351 versus 7+3 in older adults with newly diagnosed, high-risk acute myeloid leukemia (AML). Presented at: American Society of Clinical Oncology Annual Meeting; June 2-6, 2017; Chicago, IL. Poster 7036. 27. Kolitz JE, Strickland SA, Cortes JE, et al. Consolidation outcomes in CPX-351 versus cytarabine/daunorubicin-treated older patients with high-risk/secondary acute myeloid leukemia. Leuk Lymphoma 2020;61(3):631-640. 28. Aw A, Sabloff M, Sheppard D, et al. Evaluation of an outpatient model for treatment of acute myeloid leukemia. I Hematol. 2016;5(1):1-7 29. Vaughn JE, Othus M, Powell MA, et al. Resource utilization and safety of outpatient management following intensive induction or salvage chemotherapy for acute myeloid leukemia or myelodysplastic syndrome: a nonrandomized clinical comparative analysis. JAMA Oncol. 2015;1(8):1120-1127. 30. Kasner MT. Outpatient administration of liposomal daunorubicin and cytarabine (Vyxeos) in patients with secondary acute myeloid leukemia. Clin Adv Hematol Oncol. 2019;17(11):604-606. 31. Talati C. Frantz D. Lubas A. et al. How I treat newly diagnosed acute myeloid leukemia in an outpatient setting; a multidisciplinary team perspective. Future Oncol. 2020;16(7);281-291, 32. Kubal TE, Salamanca C, Komrokii RS, et al. Safety and feasibility of outpatient induction chemotherapy with CPX-351 in selected older adult patients with newly diagnosed AML. J Clin Oncol. 2018;36(15)(suppl):e19013. 33. Deutsch YE, Presutto JT, Brahim A, et al. Safety and feasibility of outpatient liposomal daunorubicin and cytarabine (Vyxeos) induction and management in patients with secondary AML. Blood. 2018:132(suppl 1):3559. 34. Merck Manual Professional Version, Blood tests; normal laboratory values; blood, plasma, and serum, https://www.merckmanuals.com/professional/resources/normal-laboratory values/blood-tests-normal-values, Accessed June 25, 2020, 35, American Board of Internal Medicine. ABIM laboratory test reference ranges—January 2020. https:// www.abim.org/~/media/ABIM%20Public/Files/pdf/exam/laboratory-referenceranges.pdf. Accessed July 14, 2020. 36. Data on File (VYX-2020-049).







## VYXEOS HAS PROVEN EFFICACY BENEFITS in newly-diagnosed sAML subtypes t-AML or AML-MRC<sup>1,2</sup>

## Overall survival more than doubled at 5 years with VYXEOS (18%) vs 7+3 (8%) based on KM estimates<sup>1,18</sup>

- Median overall survival (primary endpoint) of 9.6 months with VYXEOS vs 5.9 months with 7+3 (HR=0.69 [0.52, 0.90], P=0.005<sup>a</sup>)<sup>1</sup>
  - Higher rates of CR and CR+CRi with VYXEOS (38%; 48%) vs 7+3 (26%; 33%)12
  - More patients received HSCTb with VYXEOS (34%) vs 7+3 (25%)1,18
- With median follow-up of 60 months, the improvement in OS was maintained with a stable hazard ratio<sup>18</sup>

### Dosing designed with patients in mind<sup>1,26</sup>

- Fixed dosing regimen
- Allows patients time off sAML treatment
- Outpatient opportunity for appropriate patients, based on assessment of patient and institutional factors
- 90-minute infusions

## Reported adverse reactions were generally consistent with the known safety profile of cytarabine and daunorubicin therapy<sup>1,2</sup>

The most common adverse reactions (incidence  $\geq$ 25%) were hemorrhagic events (74%), febrile neutropenia (70%), rash (56%), edema (55%), nausea (49%), mucositis (48%), diarrhea (48%), constipation (42%), musculoskeletal pain (43%), fatigue (39%), abdominal pain (36%), dyspnea (36%), headache (35%), cough (35%), decreased appetite (33%), arrhythmia (31%), pneumonia (31%), bacteremia (29%), chills (27%), sleep disorders (26%), and vomiting (25%)<sup>1,36</sup>

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