

**Caring for Older Adults with Acute Leukemia in North Carolina: Updates for 2023** September 27

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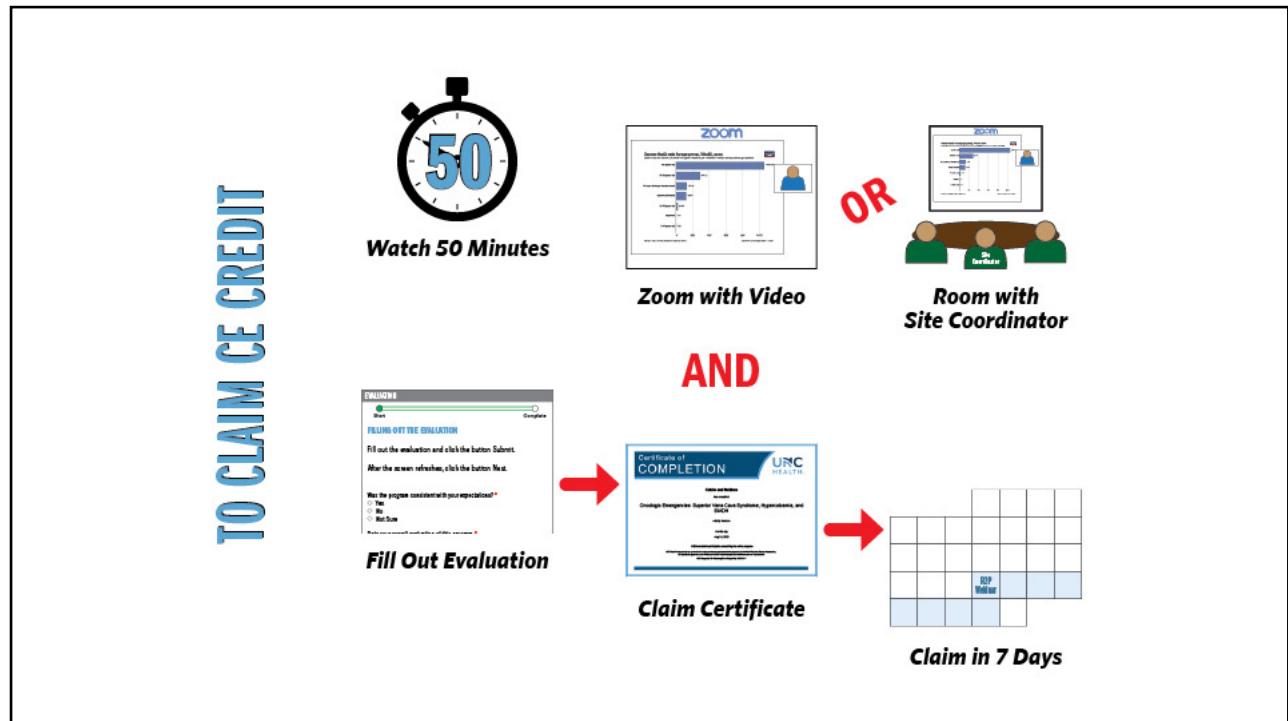
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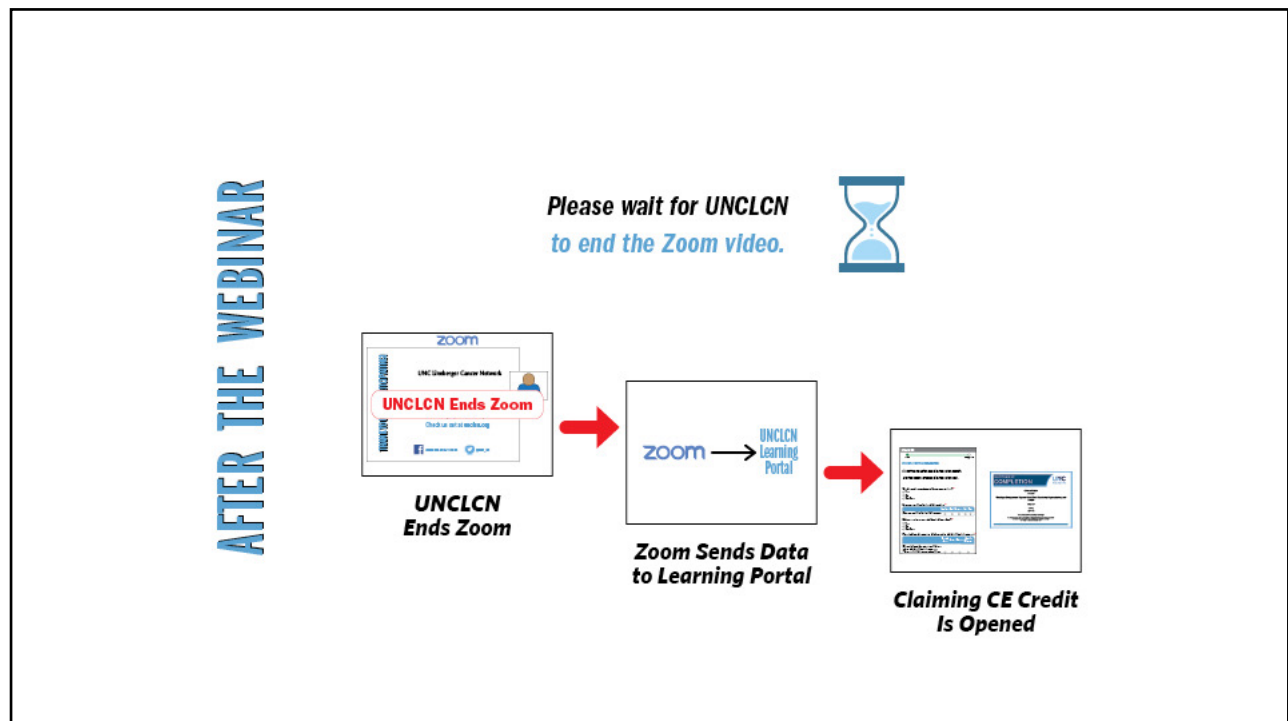
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**Daniel Richardson,**  
MD, MSc, MA



UNC Lineberger Cancer Network

## RESEARCH TO PRACTICE

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## Caring for Older Adults with Acute Leukemia in North Carolina: Updates for 2023

September 27

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## OUR PRESENTER



**Daniel Richardson,**  
MD, MA, MSc

Daniel Richardson, MD, MA, MSc, an Assistant Professor at the University of North Carolina and a member of the Lineberger Comprehensive Cancer Center.

He cares primarily for patients with acute leukemia but also attends to patients with Myelodysplastic syndromes. His research interests include patient preferences and values, patient-centered outcomes, geriatric oncology, and shared decision-making.

The goal of his research career is to improve the quality of care and outcomes of patients with cancer. Dr. Richardson leads a research team that develops novel strategies to improve patient-centered care.

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## OUR PRESENTER

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2. The goal of his research career is to improve the quality of care and outcomes of patients with cancer.
3. His research interests include patient preferences and values, patient-centered outcomes, geriatric oncology, and shared decision-making.
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What one word comes to mind when you hear the words "acute leukemia"?

Nobody has responded yet.  
Hang tight! Responses are coming in.

Instructions Responses Clear responses

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What one word comes to mind when you hear the words "acute leukemia"?


Nobody has responded yet.  
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# Caring for Older Adults with Acute Leukemia in North Carolina: Updates for 2023

Daniel Richardson, MD, MSc  
Leukemia Program  
Lineberger Comprehensive Cancer Center  
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of NORTH CAROLINA  
at CHAPEL HILL

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## Learning Objectives

1. Distinguish between front line options for older adults with acute myeloid leukemia based on disease characteristics, frailty, and patient preference.
2. Identify the two recent developments in acute myeloid leukemia that have moved the field to consider waiting for molecular testing to make treatment decisions.
3. Describe treatment options for older adults with Ph+ acute lymphoblastic leukemia.
4. Discuss the benefits of geriatric assessment for older adults with leukemia.

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## Crisis in Cancer Care Quality

“Cancer care is often not as patient-centered, accessible, coordinated, or evidence-based as it could be, detrimentally impacting patients.”



“The vast majority of people have concerns about the care they receive not being in alignment with what matters to them most. We [as providers] ask patients less than a quarter of the time about their priorities and 75% of the time we deliver care outside of their priorities. **And the result is suffering.**”



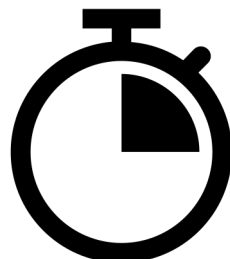
Atul Gawande

IOM (Institute of Medicine). Delivering high-quality cancer care: Charting a new course for a system in crisis. 2013.  
Gawande. ASCO 2019. Will We Be Technicians or Counselors?

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## Person-centered care in a medically complex world



**What tools are available to foster  
shared decision-making for older adults?**

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## Acute Myeloid Leukemia

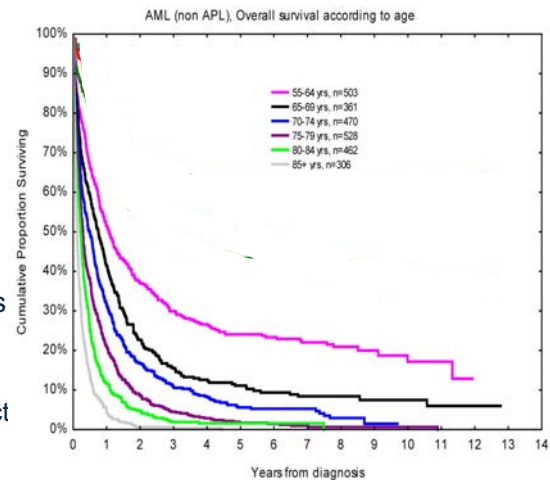
### Evolving Treatment Paradigms

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## Acute Myeloid Leukemia

- 21,000+ New dx each year in the US
- Median age 67 years
- Treatment paradigms include:
  - Intensive induction (7+3; ~4-6 weeks inpatient)
  - Outpt therapy (HMA +/- BCL2, targeted therapy)
  - Clinical Trial
  - Best Supportive Care Only
- Prognosis poor for adults, especially older adults
- Of survivors:
  - 90% will have one or more long-term side effects
  - 30% will have one or more severe long-term effect

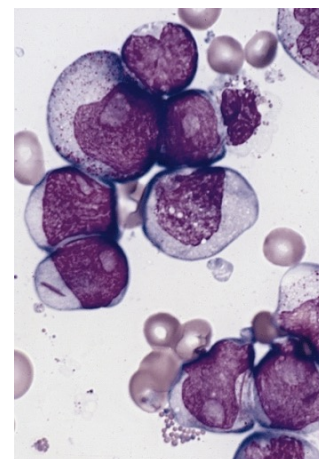
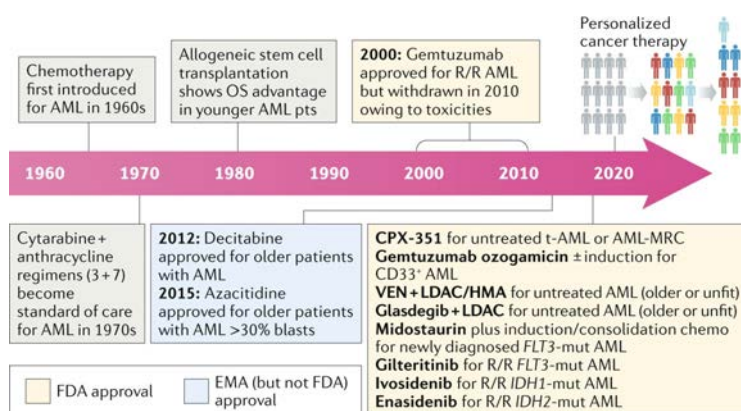


Cancer Stat Facts: Leukemia - Acute Myeloid Leukemia (AML). 2018.  
Crossnohere, Richardson, Bridges et al. CMRO, 2019.  
Juliussen et al. Blood 2012;119:3890-3899.

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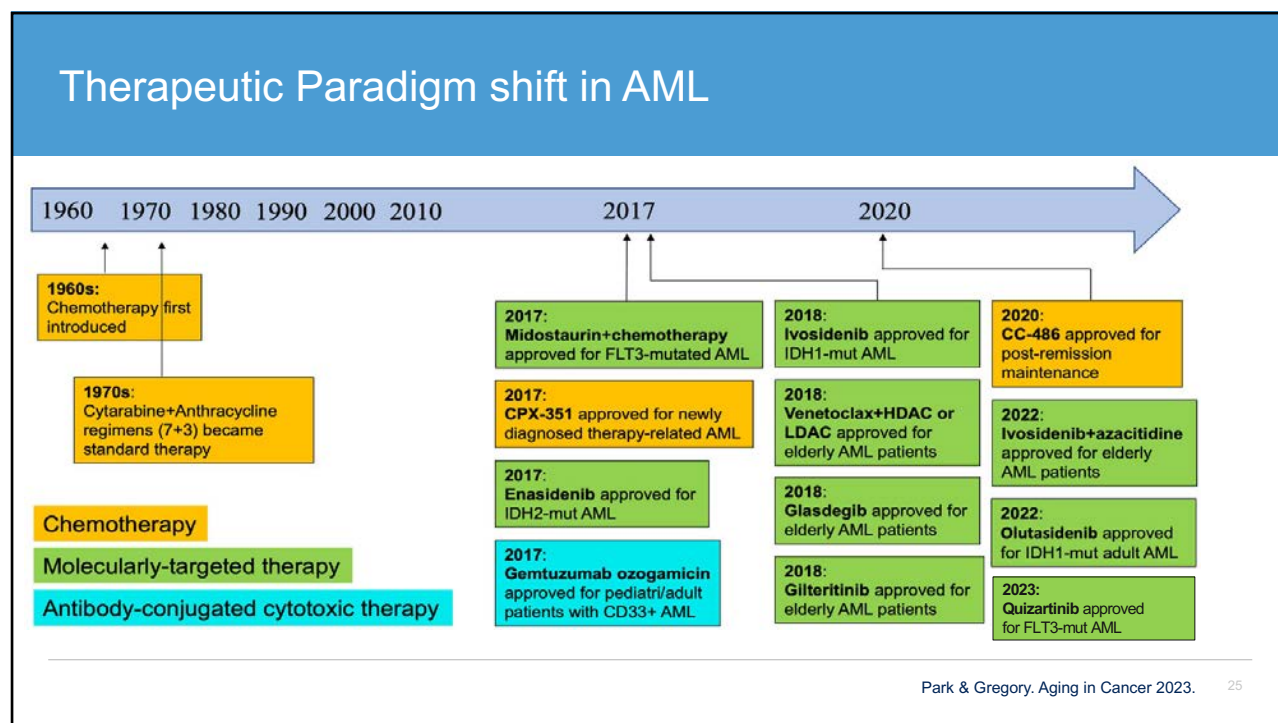
## Therapeutic Paradigm shift in AML



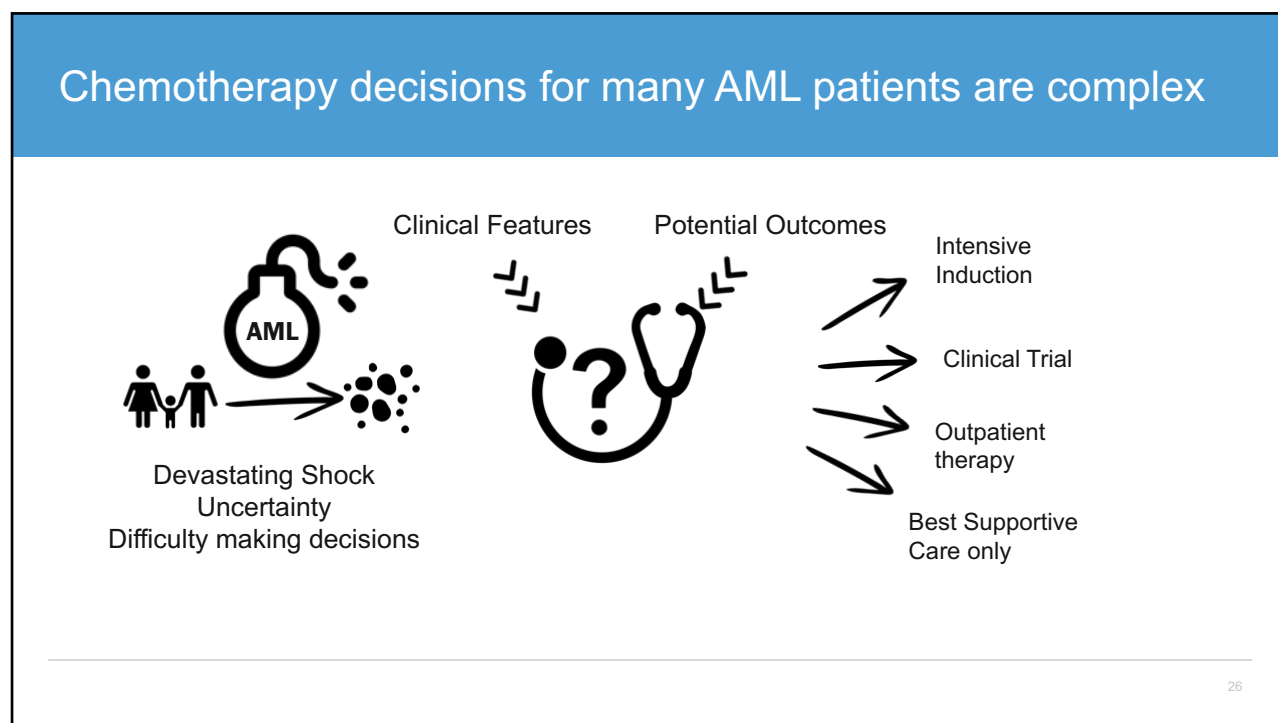
Dinardo & Perl. Nature Reviews Clinical Oncology. 2019.

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## Crisis in Cancer Care Quality

- How are we doing in routine care at aligning care with patient values (in AML)?
  - Poor patient-provider concordance on goals and prognosis (Bories, *Haematologica*, 2018)
  - Patients frequently report not being involved in decision-making nor being informed about treatment options (LeBlanc, *Psychooncology*, 2017)
  - High rates of prognostic discordance (El-Jawahri, *The Oncologist*, 2018)
  - Low levels of preference elicitation (Loh, *Leuk Lymphoma*, 2020)
  - High rates of patient dissatisfaction with communication and decision making (Rood, *Psychooncology*, 2017)
- What could we do to improve?

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## Case

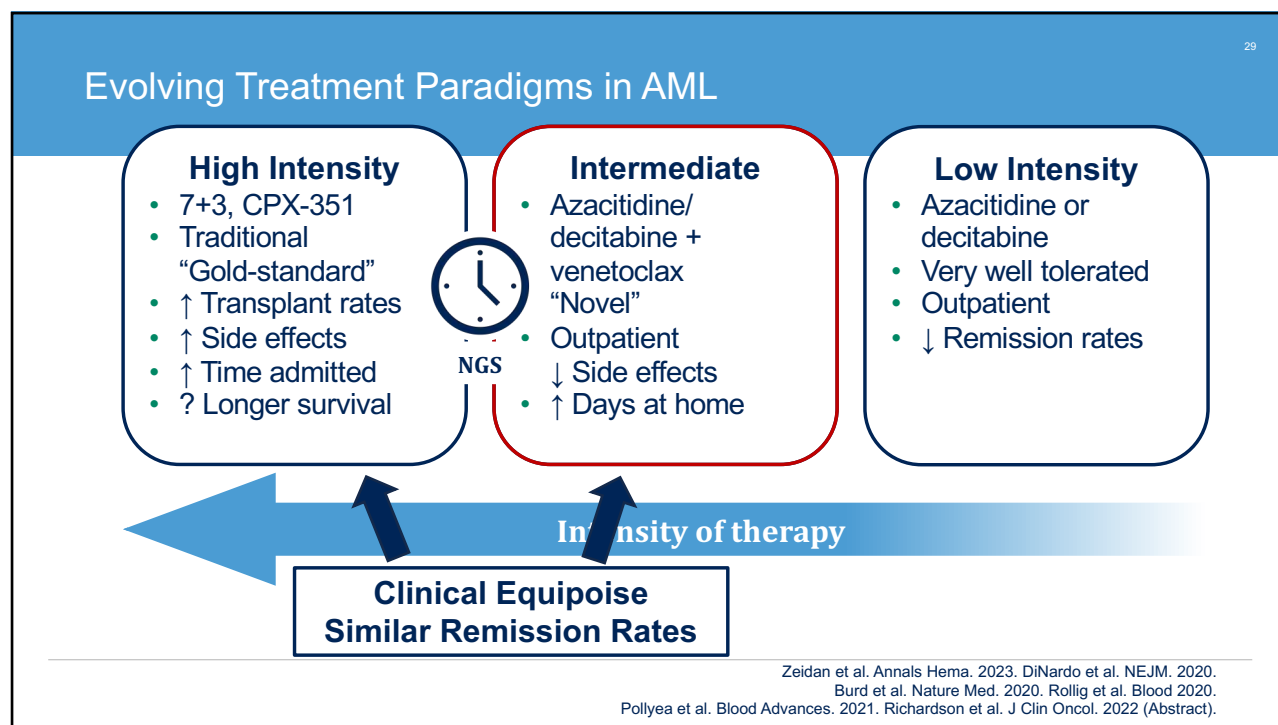


- Ms. AML is a 70-year-old woman who presents with pancytopenia
- PMH: DM, HTN
- Bone marrow biopsy: AML
- Normal karyotype
- NGS: No targetable mutations
- AML risk group: Intermediate

Image: rawpixel.com on Freepik  
Fictional case.

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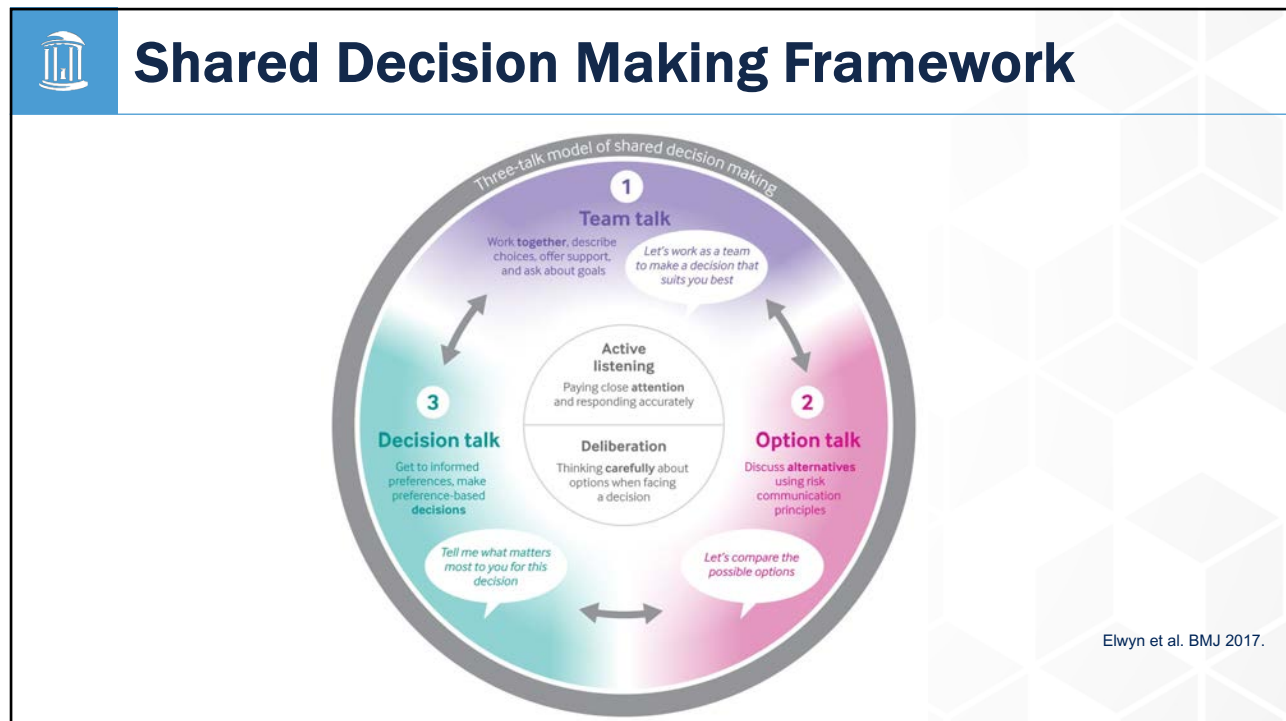


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## Geriatric Oncology Decision Framework

- 1. Determine aging-related vulnerability using geriatric assessment (GA)**
  - Age and cancer-specific data alone are often insufficient
  - GA is better than ECOG PS at identifying aging-related vulnerabilities
- 2. Consider benefits/harms of cancer treatment in context of vulnerability**
  - Older adults in practice typically not represented in trials
- 3. Incorporate patient values and preferences**
  - Older adults often value different outcomes than traditional trial endpoints

DuMontier et al. J Clin Oncol. 2021 32

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## Updated ASCO Guidelines Practical Assessment and Management of Vulnerabilities in Older Patients (2023)

### All patients age 65 and older should have GA to guide management

- New practical GA available from ASCO, CARG, SIOG (see link in article cited below)
- New videos on how to perform a GA and what to do with the results

### Impairments should have GA-identified management in the care plan

- Inform cancer treatment decision-making
- Address impairments through appropriate interventions, counseling, and/or referrals

### GA should include high priority domains




<https://www.youtube.com/watch?v=jnaQljOz2Dw>  
<https://www.youtube.com/watch?v=nZXtwaGh0Z0>

Dale et al. J Clin Oncol. 2023

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## Updated ASCO Guidelines Practical Assessment and Management of Vulnerabilities in Older Patients (2023)








### Practical Geriatric Assessment

To be completed by the patient or caregiver

Patient Name: \_\_\_\_\_ Patient DOB: \_\_\_\_\_ Date Being Completed: \_\_\_\_\_

- How many times have you fallen in the last 6 months? \_\_\_\_\_
- Does your health limit you in walking one block?
  - ☐ Not limited at all
  - ☐ Limited a little
  - ☐ Limited a lot
- Does your health now limit you in climbing one flight of stairs?
  - ☐ Not limited at all
  - ☐ Limited a little
  - ☐ Limited a lot
- Can you get to places out of walking distance...
  - ☐ Without help (drive your own car, or travel alone on buses or taxis);
  - ☐ With some help (need someone to help you or go with you when traveling); or
  - ☐ Are you unable to travel unless emergency arrangements are made for a specialized vehicle like an ambulance?
- Can you go shopping for groceries or clothes (assuming you have transportation)...
  - ☐ Without help (taking care of all shopping needs yourself, assuming you had transportation);
  - ☐ With some help (need someone to go with you on shopping trips); or
  - ☐ Are you completely unable to do any shopping?
- Can you prepare your own meals.

### Practical Geriatric Assessment

To be completed by provider

Patient Name: \_\_\_\_\_ Patient DOB: \_\_\_\_\_ Date Being Completed: \_\_\_\_\_

#### Nutrition

How much weight have you lost in the past 5 months?

- ☐ No weight loss (less than 1 kg (2.2 lbs))
- ☐ Greater than 1 kg (6.6 lbs)
- ☐ Between 1 and 3 kg (2.2 and 6.6 lbs)
- ☐ Do not know the amount

#### Gait Speed

"Now I am going to observe how you normally walk. If you use a cane or other walking aid and you feel you need it to walk a short distance, then you may use it."

- "This is our walking course. I want you to walk to the other end of the course at your usual speed, just as if you were walking down the street to go to the store."
- Demonstrate the walk for the participant.
- "Walk all the way past the other end of the tape before you stop. I will walk with you. Do you feel this would be safe?"
- Have the participant stand with both feet touching the starting line.
- "When I want you to start, I will say, 'Ready, begin.'" When the participant acknowledges this instruction say, "Ready, begin."
- Press the start/stop button to start the stopwatch as the participant begins walking

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<https://www.youtube.com/watch?v=jnaQljOz2Dw>  
<https://www.youtube.com/watch?v=nZXtwaGh0Z0>

Dale et al. J Clin Oncol. 2023 35

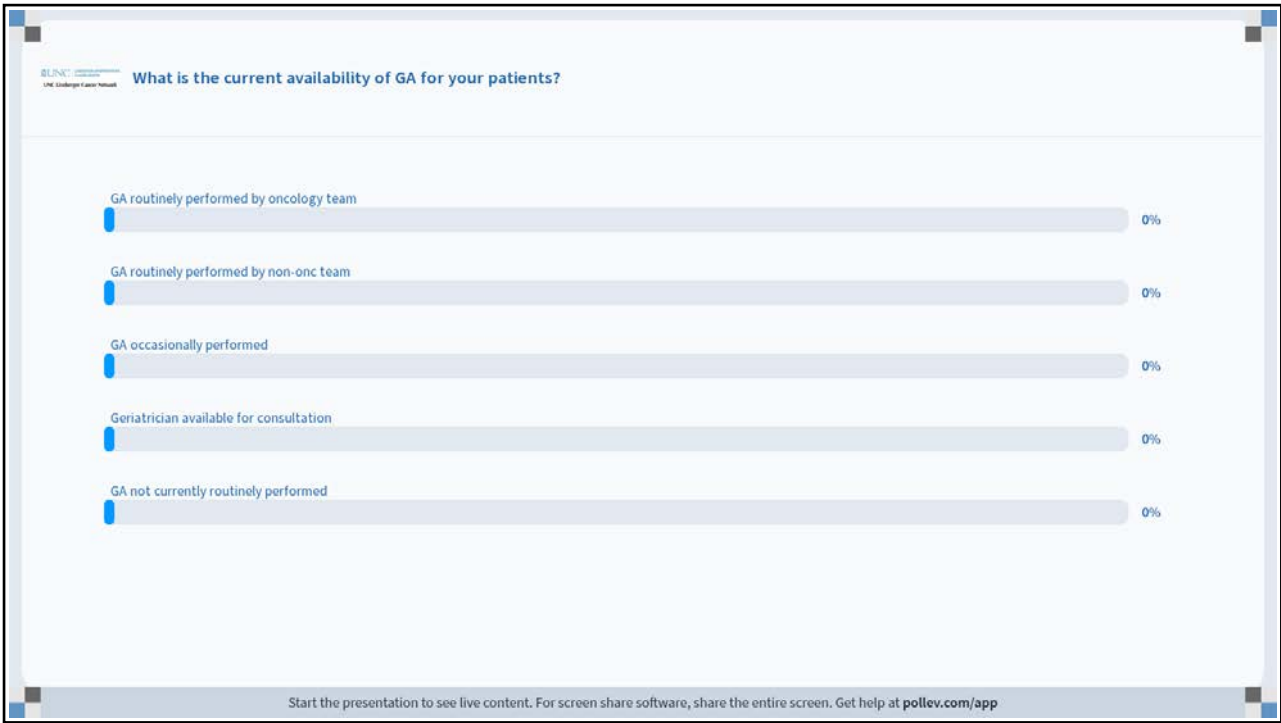
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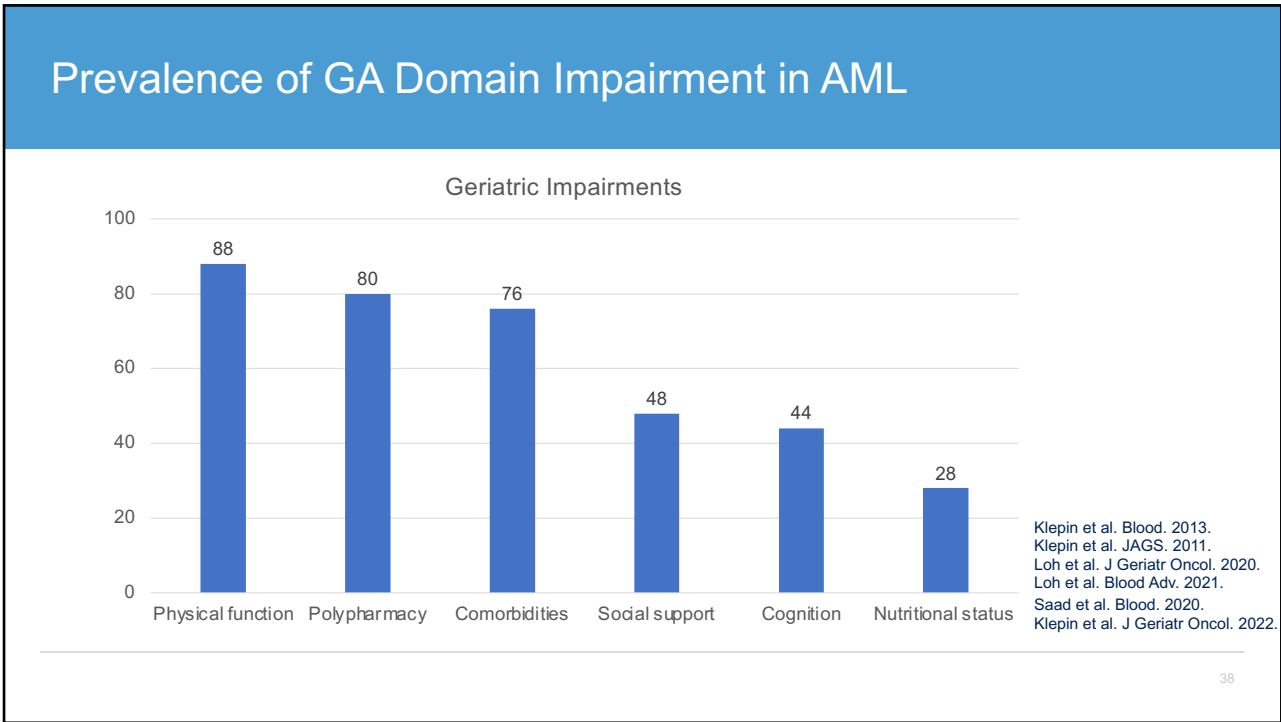
DOMAIN	MEASURE
<b>Function</b>	IADLs and ADLs
<b>Falls</b>	Fall screen in last 6 months
<b>Comorbidity</b>	Review of PMHx and medications
<b>Cognition</b>	Mini-Cog
<b>Mood</b>	Geriatric depression scale (GDS)
<b>Nutrition</b>	Unintentional weight loss (>10%)
<b>Objective physical performance</b>	Short Physical Performance Battery (SPPB) or gait speed

Dale et al. J Clin Oncol. 2023 36

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## Geriatric Assessment Results

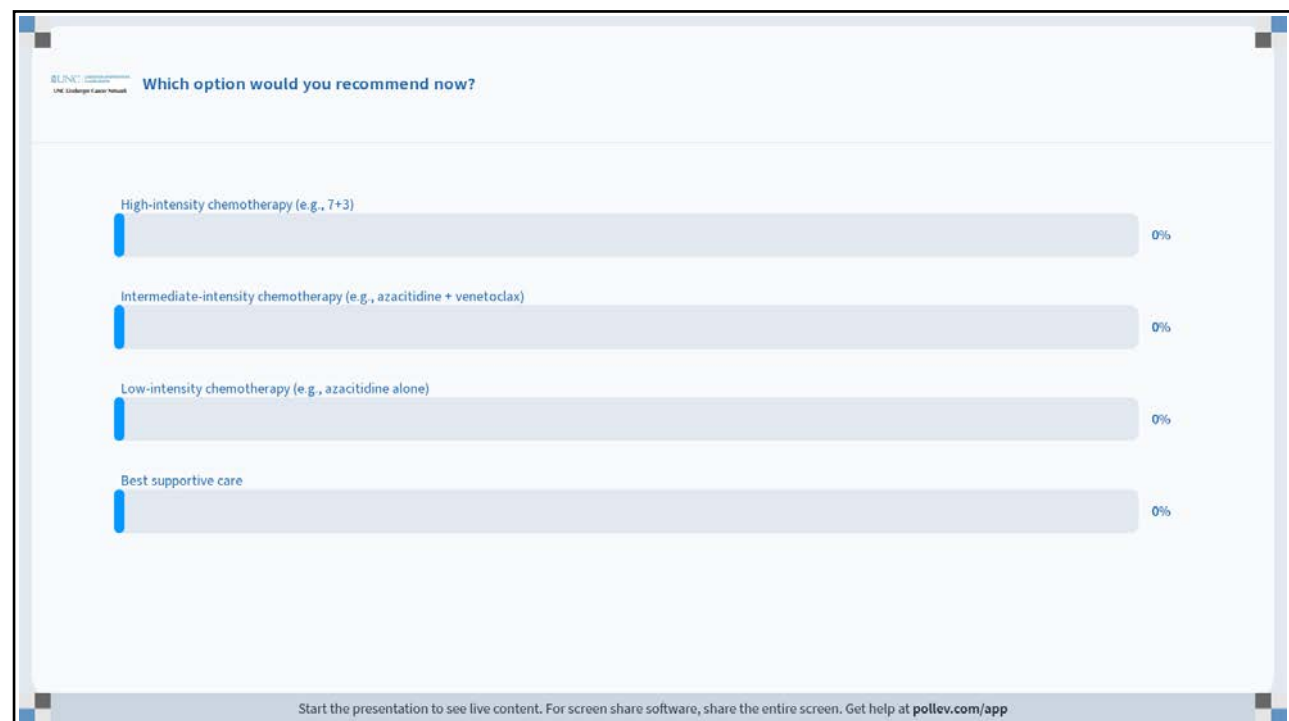


- Some fatigue, developed with AML
- DM, HTN (both well controlled)
- Independent in all ADLs/IADLs
- Normal gait speed
- Cognitively intact
- No depression, mildly anxious about her new diagnosis
- Active during day, volunteers part-time at library

Image: rawpixel.com on Freepik  
Fictional case.

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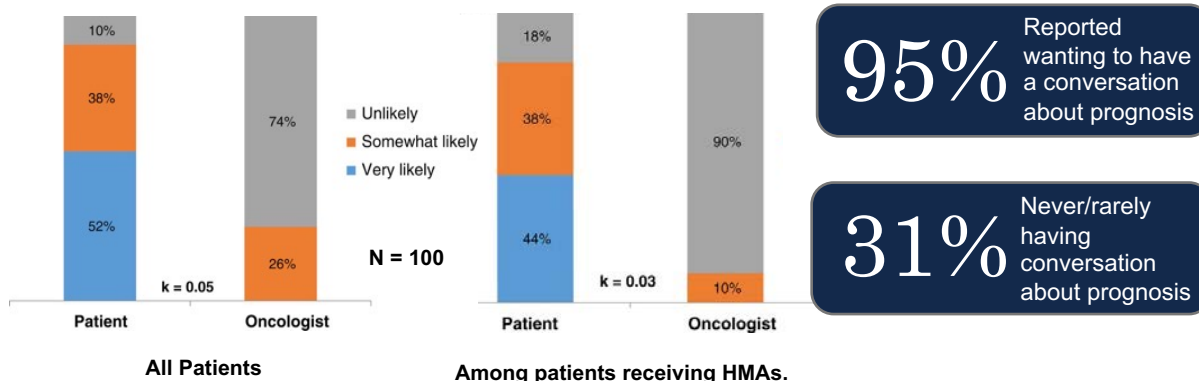
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## What do AML patients understand about prognosis?

AML patients' and oncologists' perceptions of the likelihood of cure of leukemia.

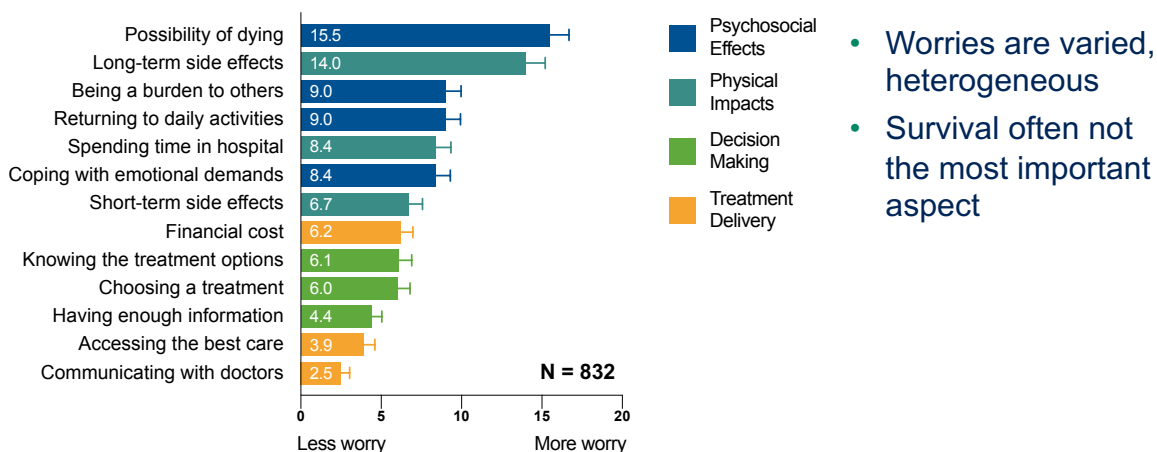


El-Jawahri et al., *The Oncologist*, 2018.

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## Worries of patients with AML

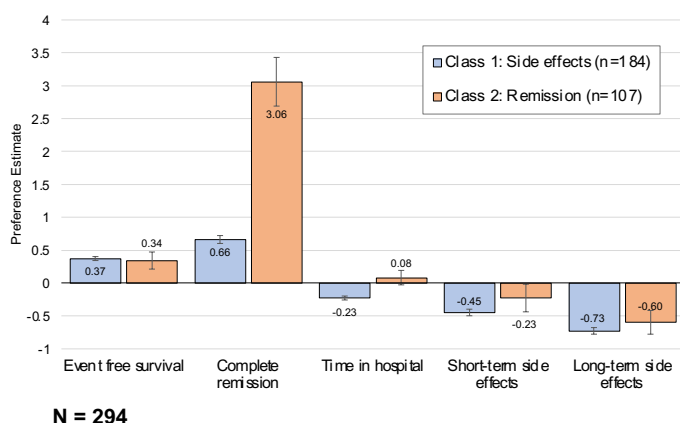


Richardson et al. *Psycho-oncology*, 2021.

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## Preferences for Treatment Outcomes among patients with AML



- Treatment preferences are varied, heterogeneous
- Survival often not the most important aspect

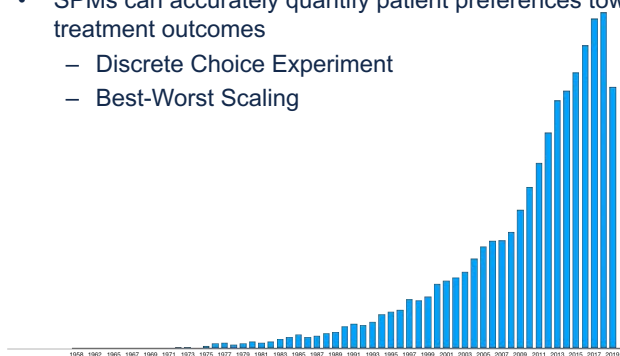
Richardson, *Cancer Epi Bio Prev.* 2020.

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## Stated-Preference Methods (SPMs)

- Efficient survey methods developed in economics
- Designed to understand preferences of participants for potential outcomes as revealed in choice tasks
- SPMs can accurately quantify patient preferences toward treatment outcomes
  - Discrete Choice Experiment
  - Best-Worst Scaling



Haber et al., *Value Health*, 2016. Jayadevappa et al., *JCO*, 2019. Mansfield et al., *Blood Adv.* 2018. Bridges et al., *Value Health*, 2011. Cheung et al., *Pharmacoeconomics*, 2016.

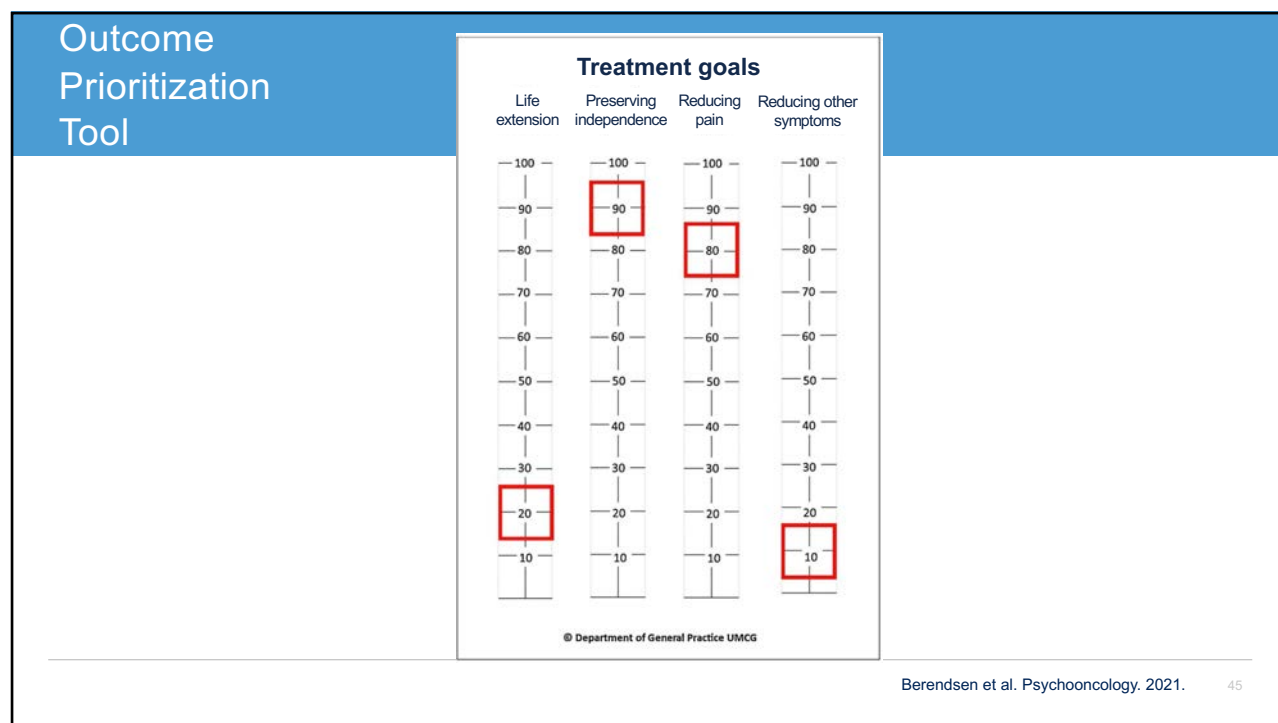
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**B**

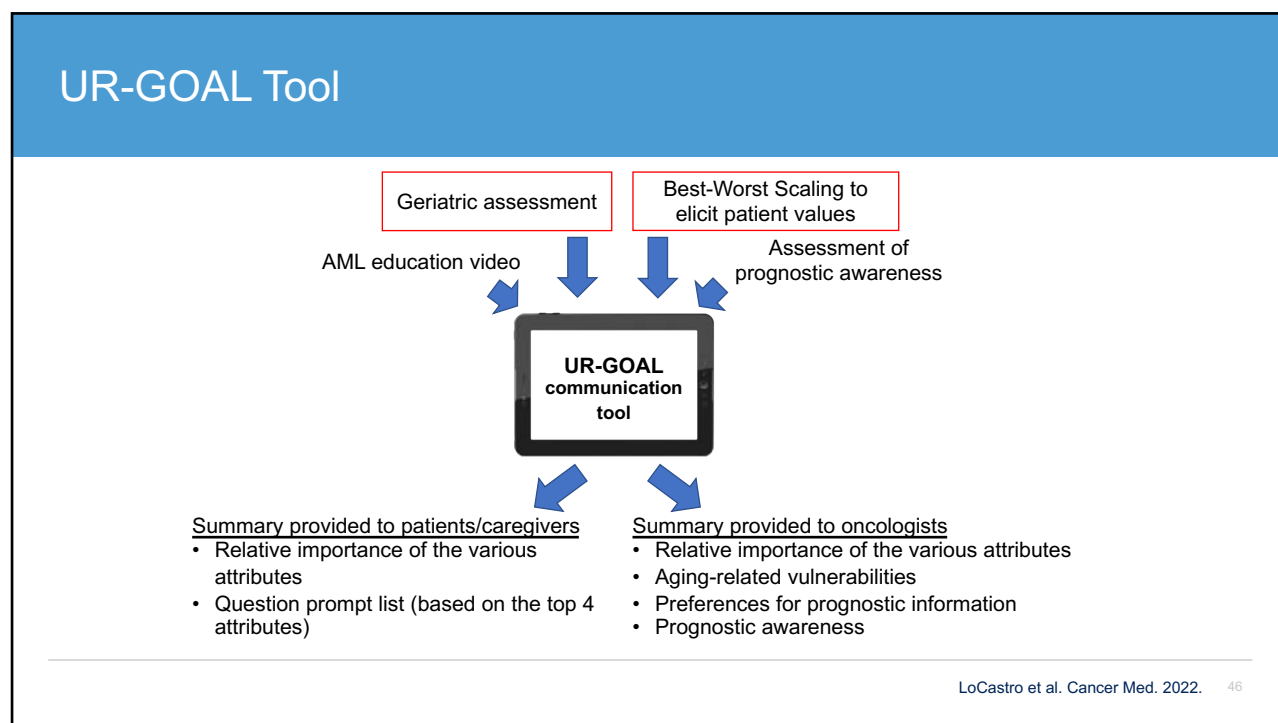
Medication Feature	Medication A	Medication B
How long until the cancer advances	26 months (2 years and 2 months)	60 months (5 years)
How you take the medicine	IV 1 time per month for 6 months	Daily pill for 60 months
Diarrhea (2-3 days per month)	None	Mild to moderate for 60 months for 2-3 days per month
Chance of severe infection	15 out of 100 (15%) for 6 months	30 out of 100 (30%) for 60 months
Chance of organ damage	8 out of 100 (8%) for 6 months	None
Out-of-pocket cost to you	\$200 per month (\$1,200 total)	\$600 per month (\$36,000 total)
Which medicine would you choose?	<input type="radio"/>	<input type="radio"/>

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## Ms. AML's preferences



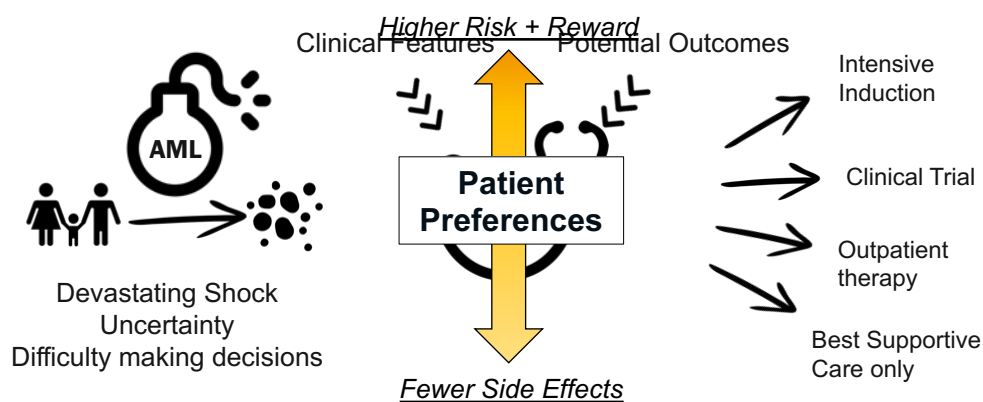
- Interested in cancer-directed treatment
- Prefers to stay out of the hospital
- Prioritizes quality of life and location of treatment

Image: rawpixel.com on Freepik  
Fictional case.

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## Chemotherapy decisions for many AML patients are complex



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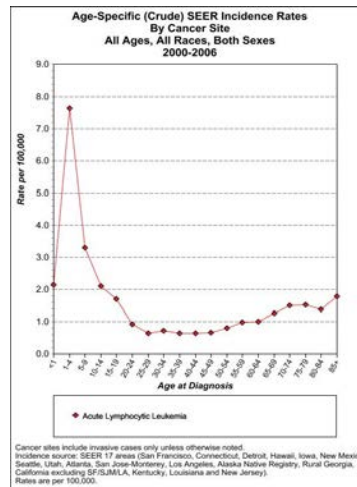
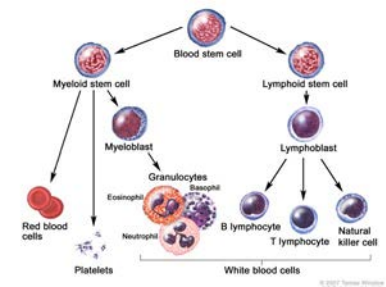
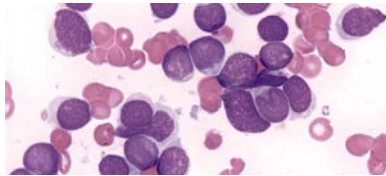
# Acute Lymphoblastic Leukemia

## Evolving Treatment Paradigms

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## Acute Lymphoblastic Leukemia

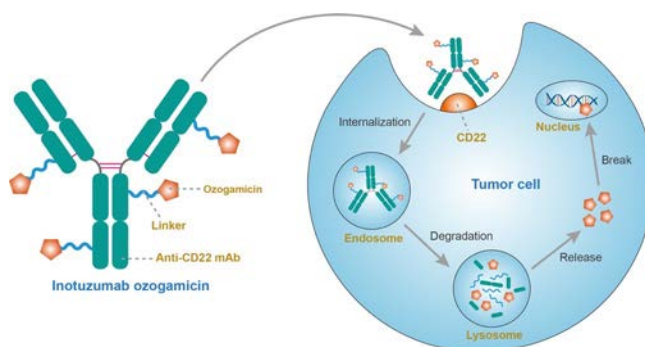


- 6,150 Newly diagnosed patients each year (US)
- Bimodal distribution
- Treatment paradigms based on cell type (B v. T), Philadelphia (Ph) chromosome status and age
- Deepening molecular understanding → novel therapeutic targets

*Cancer Stat Facts: Leukemia - Acute Lymphocytic Leukemia (ALL).*

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## Antibody-Drug Conjugate: Inotuzumab ozogamicin (stealth missile)



### Inotuzumab:

FDA-approved for patients with relapsed or refractory B-cell ALL

### Mechanism of action:

Delivers a payload (ozogamicin) to CD22 positive cells

### Clinical Benefit:

Improved survival v. salvage chemotherapy

### Toxicities:

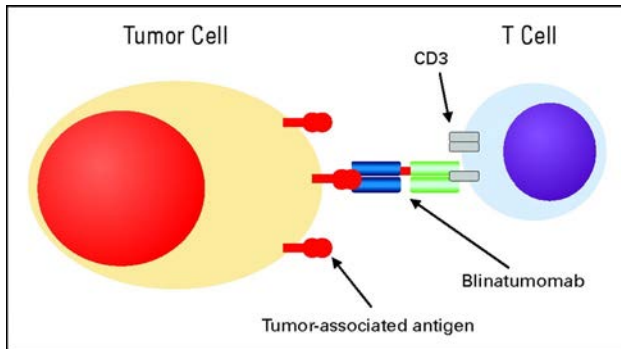
Liver damage

Kantarjian H et al. N Engl J Med 2016;375:740-53.  
Creative biolabs, promotional material.

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## Immunotherapy: Blinatumumab (matchmaker)



### Blinatumumab:

FDA-approved for patients with relapsed or refractory B-cell ALL, eradication of MRD

### Mechanism of action:

Bi-specific T-cell engager – links tumor cells (CD19) to immune cells (CD3)

### Clinical Benefit:

Improved survival v. salvage chemotherapy

### Toxicities:

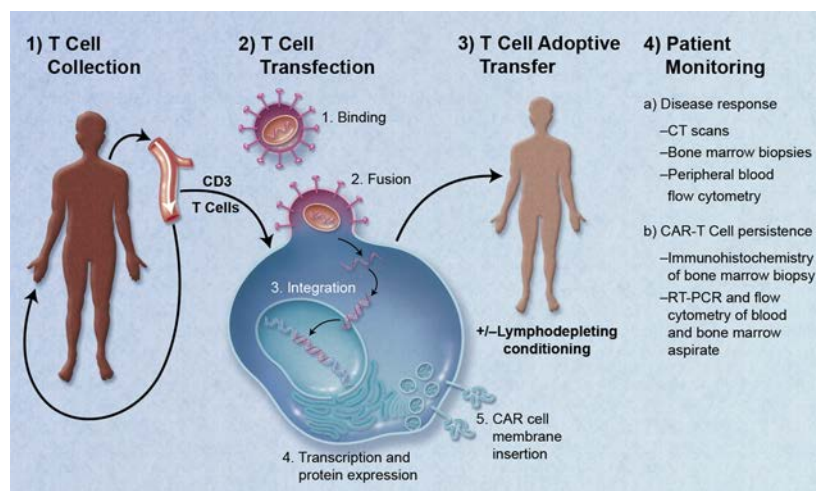
Cytokine release syndrome

Quintás-Cardama A et al. JCO 2010;28:884-892  
Kantarjian H et al. N Engl J Med 2017; 376:836-47

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53

## Immunotherapy: CAR-T cells – Programmed T-cells



### Tisagenlecleucel:

FDA-approved for patients with relapsed or refractory B-cell ALL (<25 years)

### Brexucabtagene autoleucel:

FDA-approved for patients with relapsed or refractory B-cell ALL

### Mechanism of action:

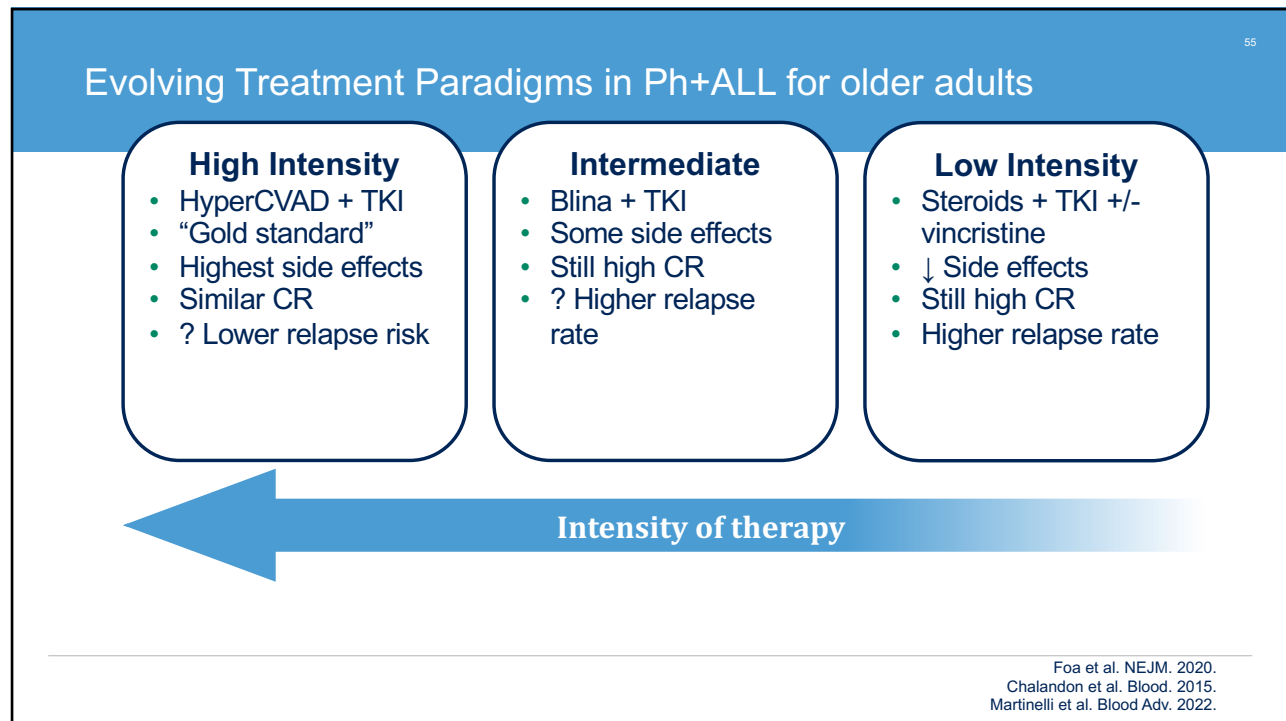
Hybrid molecule composed of an extracellular antigen-recognition site from an antibody and intracellular signaling domain of T-cell receptor

### Clinical Benefit: Improved survival

Toxicities: Cytokine release syndrome, neurologic toxicity

Jacobson C A , and Ritz J Blood 2011;118:4761-4762  
Maude et al., NEJM 2018

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### Study Team and Collaborators

Amy Cole	Antonia Bennett	William Dale
Carl Mhina	Thomas LeBlanc	Melissa Loh
Chris Jensen	Stephanie Wheeler	Jennifer Lund
Karthik Adapa	Ethan Basch	Chris Baggett
Matt Washko	Nonie Crossnohere	Lukasz Mazur
Konan Beke	John Bridges	Lorinda Coombs
Ashley Bryant	Liz Kwong	Michael Catalino
Andrew Moon	Clark DuMontier	Callie Berkowitz
Josh Zeidner	Matthew Foster	William Wood
Josy Zhou	Allison Deal	Hilary Heiling
Amro Khasawneh	Mattias Jonsson	

### Funding





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at CHAPEL HILL

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## References

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- Bridges et al. "Conjoint analysis applications in health—a checklist: a report of the ISPOR Good Research Practices for Conjoint Analysis Task Force." *Value Health*, 2011 Jun;14(4):403-13. doi: 10.1016/j.jval.2010.11.013. Epub 2011 Apr 22. <https://pubmed.ncbi.nlm.nih.gov/21669364/>
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**Sonali Acharya, PharmD**

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**Genitourinary Cancer Management in North Carolina: Updates for 2023**  
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