2023 ASCO Annual Meeting
Embargoed Pre-Meeting Press Briefing

Moderators:
ASCO Chief Medical Officer and Executive Vice President Julie R. Gralow, MD, FACP, FASCO
ASCO President Eric P. Winer, MD, FASCO
Embargo policy

- Abstracts in today’s press briefing are embargoed until May 25, at 5:00 p.m. ET
- Late-Breaking Abstracts (LBAs) will be released each day of the meeting and remain embargoed until 7:00 a.m. CT/ 8:00 a.m. ET on day of scientific presentation
- June 2-6, 2023, in Chicago and online
- More than 5,500 abstracts will be presented during the meeting or published online
Highlighted studies

• Efficacy and safety results from the COMMANDS trial: A phase 3 study evaluating luspatercept vs epoetin alfa in erythropoiesis-stimulating agent (ESA)-naive transfusion-dependent (TD) patients (pts) with lower-risk myelodysplastic syndromes (LR-MDS).

• KEYNOTE-826: Final overall survival results from a randomized, double-blind, phase 3 study of pembrolizumab + chemotherapy vs placebo + chemotherapy for first-line treatment of persistent, recurrent, or metastatic cervical cancer.

• Minimally invasive versus open distal pancreatectomy for resectable pancreatic cancer (DIPLOMA): An international randomised trial.

• Effect of a telephone-based weight loss intervention (WLI) on weight at 12-months in women with early breast cancer: Results from the Breast Cancer Weight Loss (BWEL) trial.

• Racial disparities in cancer mortality in patients with gastrointestinal malignancies following Medicaid expansion.

• Childhood leukemia survival in the US-Mexico border: Building sustainable leukemia care using health systems strengthening models.
2023 ASCO Annual Meeting

• The ASCO Annual Meeting provides an all-access pass to cutting-edge clinical trials and global perspectives on the most sought-after innovation in oncology.

• Late-Breaking Abstracts will be featured in three additional press briefings leading up to and throughout the meeting.

• Visit www.Cancer.Net for a trustworthy resource that can help ensure your reporting is accurate, informative, and accessible to a wide audience.

• Theme of this year’s meeting is Partnering With Patients: The Cornerstone of Cancer Care and Research.
Presenters

• Guillermo Garcia-Manero, MD
• Bradley Monk, MD
• Mohammad Abu Hilal, MD, PhD
• Jennifer Ligibel, MD
• Naveen Manisundaram, MD, MPH
• Paula Aristizabal, MD, MAS
Q&A Information

- To be held at the conclusion of all author presentations
- Chat will open for questions towards the end of the last presentation
- When using chat, please first chat your media outlet and name of the panelist to whom your question is directed
EFFICACY AND SAFETY RESULTS FROM THE COMMANDS TRIAL: A PHASE 3 STUDY EVALUATING LUSPATERCEPT VS EPOETIN ALFA IN ERYTHROPOIESIS-STIMULATING AGENT NAIVE TRANSFUSION-DEPENDENT PATIENTS WITH LOWER RISK MYELODYSPLASTIC SYNDROMES

Guillermo Garcia-Manero, MD (presenting author)
Department of Leukemia, University of Texas MD Anderson Cancer Center, Houston, TX
Background

- Anemia represents a major burden for patients with MDS
- Chronic anemia and transfusion dependency are significant clinical challenges in LR-MDS, increasing the risk of death by more than 50% compared to patients who are transfusion independent
- The efficacy and duration of ESA response are limited
- There is an unmet need for effective and durable options other than ESAs for treating anemia in patients with LR-MDS
- Luspatercept is a monoclonal antibody that modulates TGF-β pathway resulting in increased erythrocytosis
- Luspatercept is currently approved in the US for patients with RS+ LR-MDS after ESA failure\(^1\) or who are ESA ineligible
- We present the results of the phase 3 COMMANDS study comparing the efficacy and safety of luspatercept versus ESAs in ESA-naive patients with LR-MDS (NCT03682536)

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ESA, erythropoiesis-stimulating agent; LR-MDS, lower-risk myelodysplastic syndromes.

\(^1\)Fenaux et al. NEJM 2020;382:140.
COMMANDS study

- COMMANDS is a phase 3, global, open-label, randomized trial comparing the efficacy and safety of luspatercept versus epoetin alfa to treat anemia due to LR-MDS in ESA-naive patients who require RBC transfusions.
- The primary endpoint of the study is achievement of RBC-TI for ≥ 12 weeks with concurrent mean hemoglobin increase ≥ 1.5 g/dL.

Key eligibility criteria

- Age ≥ 18 years
- IPSS-R very low-, low-, or intermediate-risk MDS (with or without RS) by WHO 2016, with < 5% blasts in bone marrow
- Required RBC transfusions (2–6 pRBC units/8 weeks for a minimum of 8 weeks immediately prior to randomization)
- Endogenous sEPO < 500 U/L
- ESA-naive

Patients stratified by:

- Baseline sEPO level
- Baseline RBC transfusion burden
- RS status

Luspatercept (N = 178)
1.0 mg/kg s.c. Q3W titration up to 1.75 mg/kg

Epoetin alfa (N = 178)
450 IU/kg s.c. QW titration up to 1050 IU/kg

Response assessment at day 169 and every 24 weeks thereafter

End treatment
Due to lack of clinical benefit or disease progression per IWG criteria

Randomized 1:1

Post-treatment safety follow-up

- Monitoring for other malignancies, HR-MDS or AML progression, subsequent therapies, survival
- For 5 years from first dose or 3 years from last dose, whichever is later

AML, acute myeloid leukemia; HR, high risk; IPSS-R; Revised International Prognostic Scoring System; IWG, International Working Group; MDS, myelodysplastic syndromes; pRBC, packed RBC; QW, every week; Q2W, every 3 weeks; RBC, red blood cell; RS, ring sideroblasts; s.c., subcutaneously; sEPO, serum erythropoietin; WHO, World Health Organization.
Luspatercept ~2× more likely to result in transfusion independence with hemoglobin increase than epoetin alfa

- Patients receiving luspatercept, regardless of subgroup, achieved transfusion independence with hemoglobin increase (primary endpoint)

BL, baseline.

*ITT population*
Luspatercept provides longer duration of transfusion independence compared to ESA

- Patients receiving luspatercept experience longer durations of transfusion independence, regardless of RS status

### Duration of RBC-TI ≥ 12 weeks: All patients

<table>
<thead>
<tr>
<th></th>
<th>Luspatercept</th>
<th>Epoetin alfa</th>
<th>HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All patients</td>
<td>126.6 (108.3 to NE)</td>
<td>77.0 (39.0 to NE)</td>
<td>0.456 (0.260 to 0.798)</td>
</tr>
<tr>
<td>RS+</td>
<td>120.9 (76.4 to NE)</td>
<td>47.0 (36.6 to NE)</td>
<td>0.626 (0.361 to 1.085)</td>
</tr>
<tr>
<td>RS−</td>
<td>NE (46.0 to NE)</td>
<td>95.1 (35.3 to NE)</td>
<td>0.492 (0.148 to 1.638)</td>
</tr>
</tbody>
</table>

CI, confidence interval; HR, hazard ratio; NE, not estimable; RBC-TI, RBC transfusion independence.
Luspatercept has a manageable and predictable safety profile consistent with previous clinical experience

<table>
<thead>
<tr>
<th>Patients, n (%)</th>
<th>Luspatercept (n = 178)</th>
<th>Epoetin alfa (n = 176)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any grade</td>
<td>Grade 3/4</td>
</tr>
<tr>
<td><strong>Heme-related TEAEs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>17 (9.6)</td>
<td>13 (7.3)</td>
</tr>
<tr>
<td>Thrombocytopenia</td>
<td>11 (6.2)</td>
<td>7 (3.9)</td>
</tr>
<tr>
<td>Neutropenia</td>
<td>9 (5.1)</td>
<td>7 (3.9)</td>
</tr>
<tr>
<td>Leukocytopenia</td>
<td>2 (1.1)</td>
<td>0</td>
</tr>
<tr>
<td><strong>TEAEs of interest</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fatigue</td>
<td>26 (14.6)</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>26 (14.6)</td>
<td>2 (1.1)</td>
</tr>
<tr>
<td>Peripheral edema</td>
<td>23 (12.9)</td>
<td>0</td>
</tr>
<tr>
<td>Asthenia</td>
<td>22 (12.4)</td>
<td>0</td>
</tr>
<tr>
<td>Nausea</td>
<td>21 (11.8)</td>
<td>0</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>21 (11.8)</td>
<td>7 (3.9)</td>
</tr>
<tr>
<td>TEE</td>
<td>8 (4.5)</td>
<td>5 (2.8)</td>
</tr>
</tbody>
</table>

Safety data are not exposure-adjusted. *Deaths during treatment period and post-treatment period.

TEAE, treatment-emergent adverse event; TEE, thromboembolic event.

**TEAEs (any grade)**
- 164 (92.1%) luspatercept
- 150 (85.2%) epoetin alfa

**Median treatment duration, weeks**
- 41.6 (range: 0–165) luspatercept
- 27.0 (range: 0–171) epoetin alfa

**Progression to HR-MDS**
- 10 (2.8%) luspatercept
- 7 (4.0%) epoetin alfa

**Progression to AML**
- 5 (2.8%) luspatercept
- 4 (2.2%) epoetin alfa

**Deaths**
- 32 (18.0%) luspatercept
- 32 (18.2%) epoetin alfa
COMMANDS: Conclusions

- COMMANDS study achieved its primary endpoint demonstrating that luspatercept is superior to ESA in front line TD LR-MDS
  - Primary endpoint was achieved in 58% of patients treated with luspatercept vs 31% with ESA
  - Median duration of response was 126 weeks vs 77 in favor of luspatercept
- Luspatercept provided clinical benefit regardless of patient subgroups
- Toxicity profile was consistent with previous clinical experience
- In summary, luspatercept is the first and only therapy to demonstrate superiority in a head-to-head study against ESAs in TD LR-MDS
- It should be considered a paradigm shift in the treatment of LR-MDS–associated anemia
Pembrolizumab + Chemotherapy versus Placebo + Chemotherapy for Persistent, Recurrent, or Metastatic Cervical Cancer: Final Overall Survival Results of KEYNOTE-826

Bradley J. Monk, MD
Background

- Platinum-based chemotherapy is standard treatment for persistent, recurrent, or metastatic cervical cancer\(^1,2\)
  - Preferred regimen of platinum, paclitaxel, and bevacizumab associated with median OS of 17.5 months in the pivotal GOG 240 study\(^3\)
- Pembrolizumab monotherapy has shown efficacy in previously treated cervical cancer
  - 14.3% ORR in patients with ≥1 prior line of chemotherapy and PD-L1–positive recurrent or metastatic cervical cancer in the phase 2 KEYNOTE-158 study\(^4\)
- In the first interim analysis, KEYNOTE-826 sowed that the addition of pembrolizumab to chemotherapy ± bevacizumab provided statistically significant, clinically meaningful OS and PFS improvements and was generally well tolerated in patients with persistent, recurrent, or stage 4B cervical cancer\(^5\)
- Here, we present the protocol-specified final OS results of KEYNOTE-826

KEYNOTE-826: Randomized, Double-Blind, Phase 3 Study

**Key Eligibility Criteria**
- Persistent, recurrent, or metastatic cervical cancer not amenable to curative treatment
- No prior systemic chemotherapy (prior radiotherapy and chemoradiotherapy permitted)
- ECOG PS 0 or 1

**Stratification Factors**
- Metastatic disease at diagnosis (yes vs no)
- PD-L1 CPS (<1 vs 1 to <10 vs ≥10)
- Planned bevacizumab use (yes vs no)

**End Points**
- **Dual primary:** OS and PFS per RECIST v1.1 by investigator
- **Secondary:** ORR, DOR, 12-mo PFS, and safety

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**Treatment Arms**

**Pembrolizumab 200 mg IV Q3W**
- for up to 35 cycles
- + Paclitaxel + Cisplatin or Carboplatin IV Q3W
  - for up to 6 cycles\(^a\)
  - ± Bevacizumab 15 mg/kg IV Q3W

**Placebo IV Q3W**
- for up to 35 cycles
- + Paclitaxel + Cisplatin or Carboplatin IV Q3W
  - for up to 6 cycles\(^a\)
  - ± Bevacizumab 15 mg/kg IV Q3W

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\(^a\)Paclitaxel: 175 mg/m². Cisplatin: cisplatin 50 mg/m². Carboplatin: AUC 5 mg/mL/min. The 6-cycle limit was introduced with protocol amendment 2, although participants with ongoing clinical benefit who were tolerating chemotherapy could continue beyond 6 cycles after sponsor consultation. CPS, combined positive score (number of PD-L1–staining cells [tumor cells, lymphocytes, macrophages] divided by the total number of viable tumor cells, multiplied by 100). KEYNOTE-826 ClinicalTrials.gov identifier, NCT03635567.

Abstract: 5500
Protocol-Specified Final OS: PD-L1 CPS ≥1 Population

12-mo rate (95% CI)
75.5% (69.9-80.1)
63.2% (57.2-68.6)

24-mo rate (95% CI)
53.5% (47.4-59.2)
39.4% (33.6-45.2)

HR 0.60 (95% CI, 0.49-0.74)
nominal P < 0.0001

Data cutoff date: October 3, 2022.

Abstract: 5500
Protocol-Specified Final OS: All-Comer Population

Data cutoff date: October 3, 2022.

24-mo rate (95% CI)
52.1% (46.4-57.5)
38.7% (33.2-44.1)

HR 0.63 (95% CI, 0.52-0.77)
nominal P < 0.0001

Abstract: 5500
Summary and Conclusions

• At the protocol-specified final analysis of KEYNOTE-826, the addition of pembrolizumab to chemotherapy ± bevacizumab continued to show substantial and clinically meaningful OS and PFS improvements in women with persistent, recurrent, or metastatic cervical cancer
  – Benefit observed in all protocol-specified primary analysis populations:
    ▪ OS: PD-L1 CPS ≥1 (HR 0.60), all-comer (HR 0.63), and CPS ≥10 (HR 0.58)
    ▪ PFS: PD-L1 CPS ≥1 (HR 0.58), all-comer (HR 0.61), and CPS ≥10 (HR 0.52)
  – Benefit generally consistent across all protocol-specified subgroups, including the with and without bevacizumab subgroups
  – ORR was higher and DOR was longer with the addition of pembrolizumab

• Safety profile for pembrolizumab + chemotherapy ± bevacizumab was manageable
  – Observed AEs as expected based on profiles of individual drugs
  – No new safety signals after longer follow up

• Findings are consistent with the previous interim data and provide further support for first-line pembrolizumab plus chemotherapy, with or without bevacizumab, as a new standard of care for women with persistent, recurrent, or metastatic cervical cancer
Minimally invasive versus open distal pancreatectomy for resectable pancreatic cancer (DIPLOMA): an international randomized trial

Maarten Korrel, Leia Jones, Jony van Hilst, Gianpaolo Balzano, Bergthor Björnsson, Professor Ugo Boggi, Svein Olav Bratlie, Professor Olivier Busch, Professor Giovanni Butturini, Giovanni Capretti, Professor Riccardo Casadei, Professor Bjørn Edwin, Anouk Emmen, Alessandro Esposito, Professor Massimo Falconi, Bas Groot Koerkamp, Professor Tobias Keck, Ruben de Kleine, Dyre Kleive, Professor Arto Kokkola, Daan Lips, Sanne Lof, Misha Luyer, Alberto Manzoni, Ravi Marudanayagam, Matteo de Pastena, Nicolò Pecorelli, Professor John N Primrose, Claudio Ricci, Professor Roberto Salvia, Professor Per Sandström, Frederique Vissers, Professor Ulrich Wellner, Professor Alessandro Zerbi, Professor Marcel Dijkgraaf, Professor Marc G Besselink#,

Professor Mohammad Abu Hilal#, for the European Consortium on Minimally Invasive Pancreatic Surgery (E-MIPS)
Background

- Minimally invasive distal pancreatectomy (MIDP) increasing since 1994

- Benefit of MIDP > time to functional recovery and hospital stay

- Concerns about MIDP > lymph node yield, radicality, survival

- Recent hysterectomy trial > inferior outcomes in minimally invasive surgery
Methodology

- Non-inferiority trial (margin -7%)
- Randomization 1:1 MIDP vs open distal pancreatectomy (ODP)
- Pathologist and patient blinded (through abdominal dressing)
- Follow-up: 2 weeks, 1-3-6-12 months postoperatively (CT scan at 12 months)
- **Primary endpoint**: radical resection (R0, ≥1 mm distance between tumor and margin)
Results

- 258 patients, 35 centers, 12 countries

- **R0 resection**: 73% vs 69%, $p_{\text{non-inferiority}} = 0.039$

- **Lymph node yield**: 22 vs 23 nodes, $p=0.89$

- **Time to functional recovery**: 5 vs 5 days, $p=0.22$

- **Serious adverse events**: 18% vs 22%
Results

Overall survival

Disease-free survival

HR 0.99, 95% CI 0.67-1.46; p=0.94

HR 0.97, 95% CI 0.67-1.42; p=0.68
Conclusions

• Minimally invasive distal pancreatectomy is **safely applicable** in patients with resectable pancreatic cancer

• Radical resection rates, lymph node yield, and survival are **comparable**

• Benefit of shorter time to functional recovery **could not be confirmed**
On the behalf of the DIPLOMA team

- Prof Mohamad Abu Hilal
- Prof Marc Besslink
- Dr Maarten korrel
- Dr Marco Ramera
- Dr Nine De Graaf
- Dr Martina Guerra
- Dr Anouk Emmen
- Alberto Manzoni
- Dr Jony Van Hilst
Effect of a telephone-based weight loss intervention (WLI) on weight at 12-months in women with early breast cancer: Results from the Breast Cancer Weight Loss (BWATCH) Trial

Background

- Obesity is a poor prognostic factor in early-stage breast cancer

- Obesity is associated with higher risk of all-cause and breast-cancer specific mortality
  - Each 5kg/m² increase in body mass index (BMI) linked to a 10% increase in breast-cancer mortality

- Obesity is also linked to higher risk of second cancers
  - Each 5kg/m² increase in BMI linked to 14% increase in risk of second cancers

- Impact of weight loss after breast cancer diagnosis on breast cancer mortality and second cancers is not known

Chan et al. IJC 2022
The **Breast Cancer Weight Loss** Trial

3136 Participants

**Key Eligibility**
- Stage II-III Breast Cancer
- Diagnosed w/in past 14 months
- HR+/HER-2- or TNBC
- BMI ≥ 27 kg/m²

Randomize

Health Education + 2-year Telephone-Based Weight Loss Intervention
- 42 calls from health coach (DFCI)
- Supplemented with workbook and tools
- Based on Social Cognitive Theory

Health Education Alone
- Non-tailored diet/exercise recommendations
- Quarterly newsletter
- Twice yearly webinars
- Health-related magazine

- **Primary Outcome**: Invasive Disease-Free Survival
- **Key Secondary Outcome**: Weight Change

*Patients planning on taking medications for the purpose of weight loss and/or undergoing a surgical weight loss procedure within 2 years were not eligible*
## Weight Loss

<table>
<thead>
<tr>
<th></th>
<th>CONTROL (n=1173)</th>
<th>WLI (n=1222)</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Weight Change at 6-months</td>
<td>+ 0.2 kg</td>
<td>- 4.4 kg</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>% Weight Change at 6-months</td>
<td>+ 0.3%</td>
<td>- 4.8%</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Absolute Weight Change at 12-months</td>
<td>+ 0.7kg</td>
<td>- 4.4kg</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>% Weight Change at 12-months</td>
<td>+ 0.9%</td>
<td>- 4.8%</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
# Weight Loss in Patient Subsets

## Mean Difference in Percent Weight Change Between Arms by Subgroups

### Menopausal Status
- Pre-menopausal: 4.68
- Post-menopausal: 6.39

Interaction p value = 0.0057

### HR status
- HR-positive: 5.86
- HR-negative: 4.75

### Race/Ethnicity
- African American: 3.74
- Hispanic: 4.13
- Other: 6.05

Interaction p value = 0.019

### Education
- < College: 5.76
- College: 6.20
- > College: 4.90

### Income
- <$50,000: 6.21
- $50-120,000: 5.66
- >$120,000: 5.15

### Summary
- 5.65
Conclusions and Next Steps

A telephone and web-based weight loss intervention led to significant and clinically meaningful weight loss in breast cancer survivors with overweight and obesity.

The intervention was successful in inducing weight loss across patient subgroups defined by age, race, ethnicity and tumor subtype.

Patterns of weight change varied by age and race.

BWEL will continue to follow patients to assess the impact of the WLI on iDFS and other outcomes.
Addressing Racial Disparities in Gastrointestinal Cancer Mortality: The Impact of Medicaid Expansion

Naveen Manisundaram, MD MPH; Rebecca Snyder MD MPH, Chung-Yuan Hu MPH PhD, Sandra R. DiBrito MD PhD, George J. Chang MD MS
Medicaid Expansion Increased Access to Healthcare

• The Affordable Care Act was implemented to improve healthcare access through providing insurance coverage for lower-income patients

• Law included a Medicaid Expansion provision to provide federal funding for participating states to expand Medicaid

• Medicaid Expansion has led to improved access to care for cancer patients (screenings, receipt of cancer-related treatments)

• The impact of Expansion on racial survival disparities among gastrointestinal cancer patients remains unknown
Methods

• Utilized the National Cancer Database

• Mortality rates for GI Cancer Patients were compared in Medicaid Expansion (MES) and Non-Expansion States (NMES) by race before (2009-2013) and after (2014-2019) expansion

• Utilized Difference-in-Difference Analysis (DID) - A negative DID suggested a greater reduction in mortality MES compared to those in non-MES
Expansion Improved Survival for Pancreatic Cancer Patients

Change in 2-Year Mortality for Pancreatic Cancer Patients Following Medicaid Expansion

Difference-in-Difference in 2-Year Mortality for Pancreatic Cancer Patients

[Bar chart showing differences in mortality rates for white and black patients across different stages and Medicaid expansion statuses.]
Expansion Improved Survival for CRC Patients

Change in 2-Year Mortality for CRC Patients Following Medicaid Expansion

Difference in 2-Year Mortality (%)

-1.8  -2  -4.9  -6.1  -6  -4.9  -6.8  -12.6

All Stages in NMES  Late Stage in NMES  All Stages in MES  Late Stage in MES

White Patients  Black Patients

Difference-in-Difference in 2-Year Mortality for CRC Patients

-4.2%  -1.8%  -2.9%  -6.4%

White  Black

CRC

All Stages  Late Stages
Expansion Improved Survival for Gastric Cancer Patients

Change in 2-Year Mortality for Gastric Cancer Patients Following Medicaid Expansion

Difference-in-Difference in 2-Year Mortality for Gastric Cancer Patients

White Patients

Black Patients

All Stages in NMES
Late Stage in NMES
All Stages in MES
Late Stage in MES

Gastric

White

Black

All Stages
Late Stages

6.0%
4.0%
2.0%
0.0%
-2.0%
-4.0%
-6.0%
-8.0%
-10.0%
-12.0%
-14.0%

3.7%
5.4%
-7.7%
-10.6%

0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%

2023 ASCO ANNUAL MEETING
Press Briefing Presentation

#ASCO23
Conclusions

• Improvement in mortality rates over time for patients in both expansion and non-expansion states
• Mortality rates in MES were better than those in non-MES
• For Black patients, improvements in mortality were consistently higher in MES than in non-MES

Impact of Findings:

• Expanding Medicaid is one attainable and concrete solution that has been found to be associated with improved survival outcomes
• Additionally, Medicaid Expansion can serve as solution to reduce survival disparities between Black and White patients
Childhood Leukemia Survival in the US-Mexico Border:
Building Sustainable Leukemia Care Using Health Systems Strengthening Models

Paula Aristizabal, MD, MAS
Associate Professor of Clinical Pediatrics, Division of Pediatric Hematology/Oncology
University of California San Diego
Population Sciences, Disparities & Community Engagement
UC San Diego Moores Cancer Center
## Childhood Cancer Burden: Global

<table>
<thead>
<tr>
<th>Income Group</th>
<th>Total/year 2020</th>
<th>Number undiagnosed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global</td>
<td>413,000</td>
<td>182,000/44%</td>
</tr>
<tr>
<td>LMIC</td>
<td>382,000</td>
<td>210,000/55%</td>
</tr>
<tr>
<td>HIC</td>
<td>31,000</td>
<td>2,000/6%</td>
</tr>
</tbody>
</table>

LMIC: Low- & Middle-Income Countries
HIC: High-Income Countries

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**Pediatric Cancer Survival Rate**

![Pediatric Cancer Survival Rate Graph](image)

Johnston, CA Epidemiol, 2019
Background

• Acute Lymphoblastic Leukemia is a leading cause of death among children in LMICs.
• Significant health disparities exist in cross-border populations.
• Our US-Mexico partnership illustrates collaborative strategies to improve outcomes for children with cancer LMICs, particularly those that share a border with high-income countries.

• 23 miles: Rady to Hospital General Tijuana
• Busiest border crossing in the world
A **Twinning Model Approach**

A center of excellence in a HIC collaborates & mentors a center in a LMIC

**GOAL** is to improve survival for children with cancer through:

1. Sharing of knowledge, technology & organizational skills
2. Consultation, education & research
3. **HSS → Capacity Building & Sustainability**

Masera, Lancet, 1998
Barr, Pediatr Blood Cancer, 2014
WHO Framework for Action Health Systems Strengthening (HSS)

- **HSS**: strategies & activities designed to sustainably improve health systems performance in access, coverage, quality and efficiency

Swanson, GI Health, 2015
Aristizabal, Front Public Health, 2015
Aristizabal, JCO Global, 2023

**FIG 1** Twinning-WHO framework combination model to achieve high-quality leukemia care.
Study at a Glance & Key Findings

• Population
  - 109 children treated at Hospital General-Tijuana in Tijuana, Mexico
  - Pre-implementation: 2008-2012
  - Post-implementation: 2013-2017

• Findings
  - Sustainability indicators significantly improved between 2013-2017

<table>
<thead>
<tr>
<th>TABLE 3 ALL Patient Characteristics From 2008 to 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
</tr>
<tr>
<td>No. of patients, No. (%)</td>
</tr>
<tr>
<td>Age (mean), years</td>
</tr>
<tr>
<td>Sex, No. (%)</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Risk group, No. (%)</td>
</tr>
<tr>
<td>Standard</td>
</tr>
<tr>
<td>High⁵</td>
</tr>
</tbody>
</table>

⁵Clinical features at presentation: age <1 or ≥10 years, WBC count >50,000 cells, testicular or central nervous system involvement, immunophenotype T or bilineage, genetic features: BCR/ABL1 [t(9;22)] or MLL-AF4 [t(4;11)], hypodiploid, and measurable residual disease: >0.01% in bone marrow at the end of induction chemotherapy.
C  
SR: 5-Year OS (2008-2017), Preimplementation vs Postimplementation
Kaplan-Meier Survival Estimates

No. at risk:
Pre 22
Post 14

Analysis Time (months)
0 50 100 150

OS (probability)
0.25 0.50 0.75 1.00

SR, postimplementation: 5-year OS: 100%
SR, preimplementation: 5-year OS: 73%

D  
HR: 5-Year OS (2008-2017), Preimplementation vs Postimplementation
Kaplan-Meier Survival Estimates

No. at risk:
Pre 27
Post 46

Analysis Time (months)
0 50 100 150

HR, postimplementation: 5-year OS: 55%
HR, preimplementation: 5-year OS: 48%
Significance

• Our Twinning + WHO Framework for Action model focused on Sustainability was effective in reducing leukemia survival disparities.
• Geographic proximity, mentoring & data-driven projects to improve care led to better clinical outcomes.
• Capacity building resulted in the implementation of disease-specific treatment guidelines & in a highly trained team able to provide high-quality supportive care.
• Sustained improvements in cancer outcomes in LMICs are feasible with innovative cross-border programs.
It takes a village...
Q&A Session

Chat the name of your outlet and the person you are directing your question to, along with your question
Thank you for joining!

**Embargo lifts:**
For regular abstracts only, May 25 at 5:00 p.m. ET
For all Late-Breaking Abstracts, 7:00 a.m. CT / 8:00 a.m. ET on
day of scientific presentation

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