



Improving Quality Outcomes in Obstetrics and Gynecology: Programmatic Development

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Disclosures

- I have no relevant disclosures for this talk.



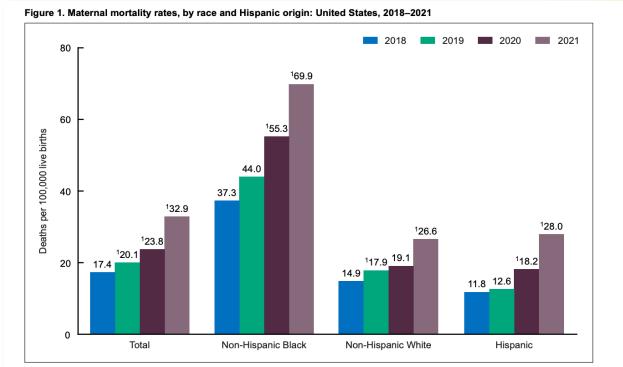
Improving Women's Health Outcomes

- Placenta Accreta Response Team
- Prevention of Venous Thromboembolism Strategy/Study
- Protocol-Bundle to Prevent Deep Space Infection in Gyn Surgery
- Molecular Analysis in Endometrial Cancer
- The Future of Ob/Gyn: A Vision for Emory GYNOB

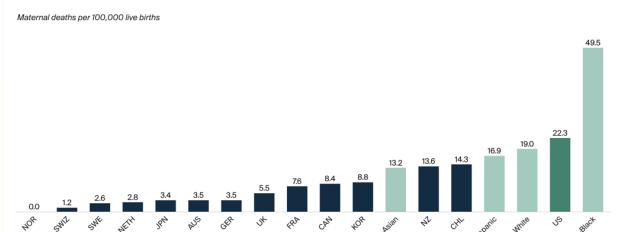


Placenta Accreta: A growing issue in maternal health

- Maternal mortality rates continue to increase dismally in the United States
- Reasons for this are multifactorial
 - Racial disparities in health care delivery
 - Increasing co-morbidities among young women (obesity, hypertension, opioid abuse, etc.)
 - Impaired access to pre-natal care
- Leading causes of maternal mortality in the US include
 - Cardiovascular causes
 - Maternal cardiac disease
 - Hypertensive Crisis in Pregnancy
 - Venous Thromboembolism
 - Hemorrhage
 - More common in developing countries but still occurs in the US
 - Placenta accreta rates are increasing in the United States- a common cause of hemorrhage and ante-natal disease



The United States continues to have the highest maternal death rate, with the rate for Black women by far the highest of any group.



Notes: The maternal mortality ratio is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy. From the UN, 2022 data for aggregated groups. Maternal mortality ratio is the number of maternal deaths divided by the number of live births. Data are for 2020, except for UK: 2018 data for NZ; 2020 data for CAN and SWZ; 2021 data for AUS, GER, JPN, KOR, NETH, and SWE; 2022 data for FRA (provisional), NOR, and US. Due to sample size limitations, data for some countries are not included. Asian Indians and Asian Americans include a wide range of distinct communities. Such groupings are imperfect, as they mask significant difference in maternal mortality rates.

Date: All country data from OECD Health Statistics 2023 extracted on February 29, 2024, except data for US are 2022 data from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System, mortality and natality data files. "Maternal Mortality Rates in the United States, 2022."

Source: Munira Z. Gurje et al., Insights into the U.S. Maternal Mortality Crisis: An International Comparison (Commonwealth Fund, June 2024). <https://doi.org/10.26099/cfrn-ef75>



One case can change it all...

- The case of JA....
- 29yo presented at 31 weeks gestation with complaints of vaginal spotting
- She has a history of 2 prior cesarean deliveries
- She is also a Jehovah's Witness patient and refuses all blood products
- JA is admitted to the antepartum service and placenta percreta is noted on ultrasound and confirmed with MRI

→

- Gynecologic oncology is "curbsided" and told of the case to the fellow and attending who "acknowledge" the case
- MFM service manages her antepartum care with a rotating faculty each week
- Both faculty make a plan for delivery
 - MFM recommends proceeding with hysterectomy
 - GYN oncology recommends consideration of in-situ treatment with methotrexate

→

- JA begins to bleed unexpectedly at 32 weeks at 4pm
- She is taken to the OR by two different faculty members
- She undergoes cesarean delivery of a healthy male fetus....
 - She begins to hemorrhage → hysterectomy is performed
 - Her total EBL is 3000cc; cell saver and other products are used
 - Her hemoglobin falls to 4.3 and she is transferred to the ICU
 - JA died 4 hours later from cardiovascular collapse



Key “take aways” from this case...

- Poor communication between the obstetric team and the gynecologic service on both sides
- Multiple changes in attending all of who had different plans
- Lack of identified “go-to” faculty member
- Lack of anesthesia and interventional radiology involvement until late in the case
- Acute change in the patient’s condition that was unexpected



- Improve communication and collegiality
- Develop a first in class program to prevent this outcome
- Focus on improving this aspect of maternal health
- Plan ahead!



Placenta Accreta Response Team (P.A.R.T) at the University of Colorado Hospital

- We have a unique, multidisciplinary program at UCH
 - Gynecologic oncology “heavy”
 - Significant input from surgical teams including vascular surgery, urology, interventional radiology
 - Anesthesia colleagues are intimately involved in the preoperative care
 - Significant financial and marketing support from UCHealth system
 - Now major referral center for the entire Rocky Mountain region



**Saketh
Guntupalli, MD
GYN Oncology**



**Ty Higuchi, MD
Urology**



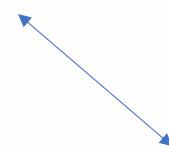
**Interventional
Radiology, Kristin
McKinney, MD
(Entire team of
specialists)**



Multidisciplinary Placenta Accreta Team



**Julie Scott, MD
High Risk
Obstetrics**



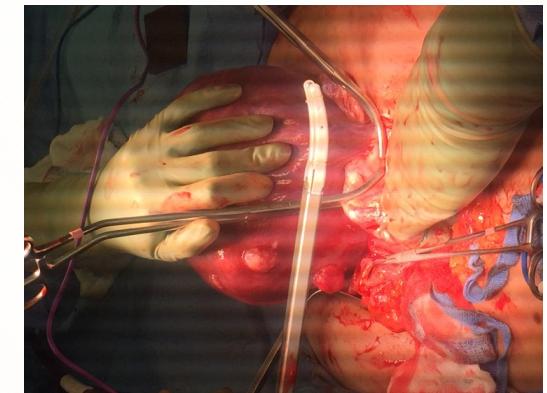
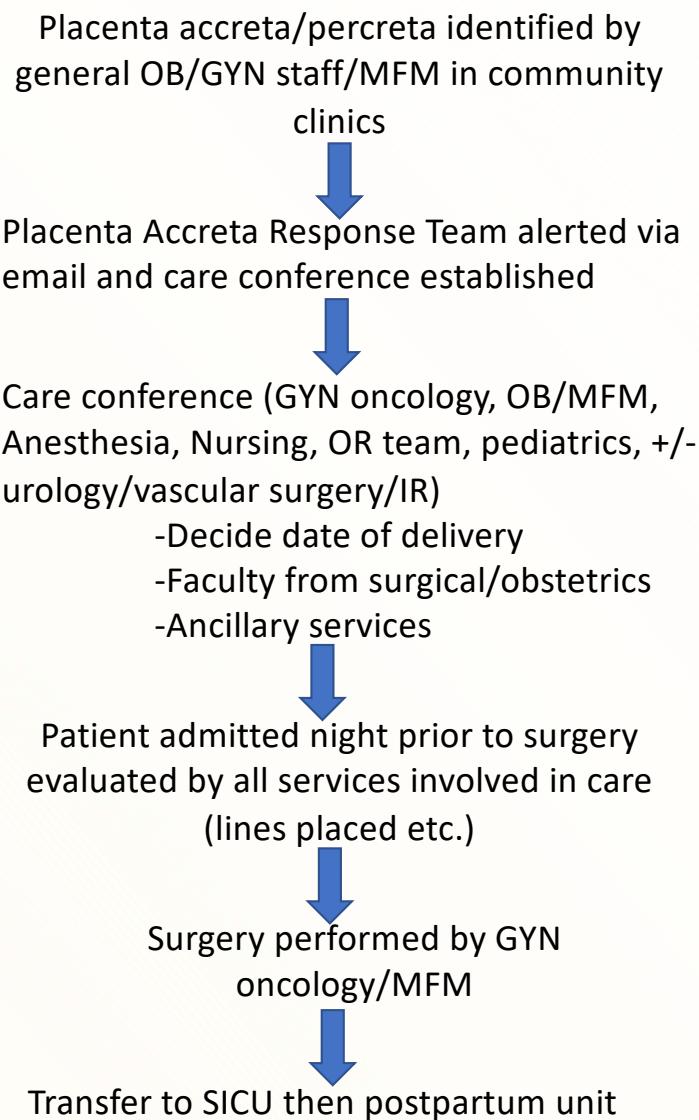
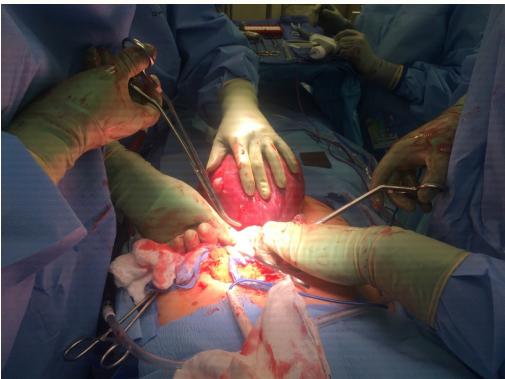
**UCH Operating
Room
Staff/Nursing**

- Nursing on L&D and Main OR
- Trainees
 - MFM/Onc Fellows
 - Residents

**Anesthesiology
Joy Hawkins, MD**



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Outcomes of the P.A.R.T program at UCH

- N=202 as of 10/2024
- After the establishment of the program we have seen
 - Improved communication between services
 - More predictability in availability of surgical staff
 - Dedicated faculty who self identified as wanting to do these cases
 - Increase in referral base from outside physicians who have heard of the program
 - Improved patient satisfaction by meeting surgical colleagues prior to surgery





Retrospective Study

DOI: [10.36959/468/475](https://doi.org/10.36959/468/475)

A Quality Improvement Initiative to Decrease Maternal Morbidity in Placenta Accreta Spectrum with a Standardized Approach: A Single Institution Experience

Ivy L Lersten*, Christina E Rodriguez, Jamie R Gilroy, Dina M Fink and Saketh R Guntupalli

Department of Obstetrics and Gynecology, University of Colorado School of Medicine, Aurora, Colorado, United States



"Being African American, I'm 2 to 3 times more likely to die in childbirth," explained Desta, "so we were facing a really bad situation."





	Post Accreta Program	Pre Accreta Program	P value
ICU length of Stay	.79 days	.50 days	.26
Hysterectomy time	178 minutes	190 minutes	.85
Infectious Complication	1	2	.65
Cystotomy rate	3	3	.84
Ureteral Injury	1	0	.92
Bowel Injury	1	1	NS
Decrease in hematocrit points pre and post op	11	14	.1

	Post Accreta Program	Pre Accreta Program	P-value
EBL	2600cc	3400cc	.049
Transfusion rate	3.7 units	4.7 units	NS
Length of hospital stay	4 days	5 days	NS
Readmission rate	4%	8%	.04
Maternal death	0	2	.001
Accreta diagnosed prior to surgery	83%	53%	.03
Emergency surgery rate	33%	64%	.03



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LOCAL NEWS

Mother And Baby Survive Serious Complications Linked To C-Sections

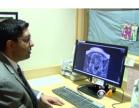
November 22, 2017 / 8:06 PM MST / CBS Colorado

f X

Dr. Guntupalli talked to CBS4 about treating a mother of three's placenta percreta

A mother and her baby boy survived this life-threatening pregnancy condition thanks to [Dr. Sakeeth Guntupalli](#) and others at the University of Colorado Hospital. Experts believe scarring from multiple C-sections increases the risk of placenta percreta.

Guntupalli, Director of the UCHealth Placenta Accreta Response Team, explained that Maya Fieweger had placenta percreta, in which the placenta had grown through the wall of the uterus. Placenta percreta is the most serious form of three life-threatening problems grouped under the umbrella of [placenta accreta](#). Guntupalli has treated 54 cases in five years.



THE NOW

f X

Childbirth survivors host blood drive to bring awareness to serious pregnancy condition

Raising awareness of a deadly childbirth condition



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LOCAL NEWS

'My Life Was Definitely On The Line': UCHealth Saves Mom And Baby

May 25, 2017 / 5:02 PM MDT / CBS Colorado

f X

UCHealth team tackles the most dangerous of deliveries

Placenta Accreta Response Team saves moms

By Todd Neff, for UCHealth | Feb. 7, 2017

Share



Svenja Carlson knew plenty about high-risk pregnancies. The Colorado Springs elementary school music teacher's first child, daughter Anja, had come to the world via emergency cesarean section five years earlier. Her second daughter, Raija, born in mid-2015, had also been a C-section – the placenta wouldn't allow otherwise.

uchealth

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Three moms pay forward the gift of life

These women have joined forces to rebuild stores of the blood that saved their lives during a rare pregnancy complication.

By Kati Blocker, UCHealth | June 6, 2018

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It is a rare but serious pregnancy complication – one that could have easily taken the lives of three northern Colorado women.

"I was close to not making it," said Christine Heim, who three years ago delivered a healthy baby girl but then started hemorrhaging. "It's really opened my eyes to the significance of donating blood."

Heim joined Kate McMakin and Tonya Trostel to host a blood drive at UCHealth Medical Center of the Rockies in Loveland on June 22, 2018. They'll host another on Sept. 20, 2019. They are connected as survivors, and they met via an international Facebook support group: Hope for Accreta.

Latest stories in News

How to stay safe from deadly E. coli outbreak linked to tainted onions on McDonald's Quarter Pounders

Estes Park Health and UCHealth sign partnership letter of intent

How to choose the Medicare plan that's right for you

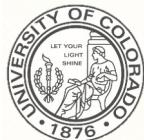


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Venous Thromboembolism in Gynecologic Surgery

- VTE remains a significant potential complication after gynecologic surgery
- Estimates of VTE after gynecologic surgery range from as low as .1% to as high as 26% particularly in long cancer cases
- PE after gynecologic surgery can be particularly dangerous and mortality rates from this can be as high
- One of the most modifying causes is smoking and use of estrogen based oral contraceptive pills



It is all about risk assessment for gyn cases...

- The Caprini Model/Scoring system is a highly sensitive and validated model for predicting risk of VTE in the peri-operative period
- Well versed for patients undergoing gynecologic surgery
- Nice, fairly simple model by which to risk stratify patients

Table 1. Recommended Thromboprophylaxis by Risk Level

Risk of symptomatic VTE	Caprini score	Risk of major bleeding complications*	
		Average risk (~1%)	High risk (~2%)
Low (~1.5%)	1–2	Mechanical prophylaxis, preferably with IPC	
Moderate (~3.0%)	3–4	LDUH, LMWH, or mechanical prophylaxis, preferably with IPC	Mechanical prophylaxis, preferably with IPC
High (~6.0%)	5 or greater	Pharmacologic prophylaxis (LDUH or LMWH) plus mechanical prophylaxis (preferably with IPC)	Mechanical prophylaxis, preferably with IPC, until risk of bleeding diminishes and pharmacologic prophylaxis can be added
High-risk cancer surgery	5 or greater	LDUH or LMWH plus mechanical prophylaxis (preferably with IPC) and extended-duration prophylaxis with LMWH postdischarge	Mechanical prophylaxis, preferably with IPC, until risk of bleeding diminishes and pharmacologic prophylaxis can be added
High risk, LDUH and LMWH contraindicated or not available	5 or greater	Fondaparinux or low-dose aspirin (160 mg); or mechanical prophylaxis, preferably with IPC; or both	Mechanical prophylaxis, preferably with IPC, until risk of bleeding diminishes and pharmacologic prophylaxis with fondaparinux can be added





Venous Thromboembolism in Gynecologic Surgeries

- Compliance with postoperative DVT prophylaxis remains less than ideal for a variety of reasons
 - Pain associated with enoxaparin injections
 - Cost (>\$600/4 week supply)
 - Poor post operative teaching and realization of importance of prophylaxis
- Multiple studies have shown that patient compliance is poor
 - In orthopedic literature, <60% of patients comply with postop VTE regimens
 - In cancer patients even less due to multiple issues surround large debulking surgeries

Compliance With Enoxaparin Dosing and Monitoring Guidelines and the Impact on Patient Length of Stay: A Pilot Study

Katharine R. Dekker, B.Pharm,*† Brooke L. Myers, B.Pharm,*† and Michael A. Barras, B.Pharm, PhD*†

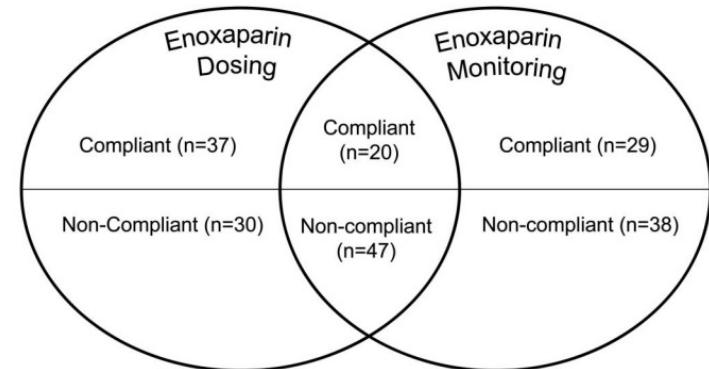


FIGURE 1. Compliant versus noncompliant groups (n = number of patients).



Study Design

- Participants were randomized to:
 - Oral apixaban 2.5 mg tablet BID for 28 days post surgery
 - Subcutaneous enoxaparin 40 mg QD for 28 days post surgery
- Followed for 90 days post-operatively



Primary Outcome-Safety Evaluation

- One major bleeding event in each arm
(0.5% vs. 0.5%, OR=1.05, 95% CI 0.07-16.76, $P=1.00$)
- 12 clinically relevant non-major bleeding events in the apixaban and 19 in the enoxaparin arm
(5.4% vs. 9.7%, OR= 1.88 95%, CI 0.87-4.1, $P=0.11$)

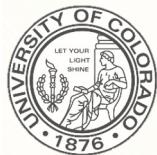
No significant difference in major bleeding or CRNM



Secondary Outcome: Venous Thromboembolism

- 5 VTE events occurred during the study period
- 2 in the apixaban arm and 3 in the enoxaparin arm
- (1.0% vs. 1.5%, OR=1.57 95% CI 0.26-9.50, $P=0.68$)
- 13 additional patients evaluated for suspected VTE (3.2%)

No difference in VTE events



What about post-operative patients?

JAMA Network **Open**™

Original Investigation | Surgery

Safety and Efficacy of Apixaban vs Enoxaparin for Preventing Postoperative Venous Thromboembolism in Women Undergoing Surgery for Gynecologic Malignant Neoplasm A Randomized Clinical Trial

Saketh R. Guntupalli, MD; Alyse Brennecke, MS; Kian Behbakht, MD; Anna Tayebnejad, BS; Christopher A. Breed, MD; Lisa Marie Babayan, PAC; Georgina Cheng, MD, PhD; Amin A. Ramzan, MD; Lindsay J. Wheeler, MD; Bradley R. Corr, MD; Carolyn Lefkowitz, MD; Jeanelle Sheeder, PhD; Koji Matsu, MD, PhD; Dina Flink, PhD



National
Comprehensive
Cancer
Network®

NCCN Guidelines Version 1.2022 Cancer-Associated Venous Thromboembolic Disease

[NCCN Guidelines Index](#)
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[Discussion](#)

VTE PROPHYLAXIS OPTIONS FOR HOSPITALIZED SURGICAL ONCOLOGY PATIENTS (VTE-1)

Agent	Standard Dosing ^{j,k}	Renal Dose	Obesity Dosing (BMI ≥ 40 kg/m 2) ^d
Dalteparin ^{1,2,3,4}	5000 units SC the evening prior to surgery, then 5000 units SC daily OR 2500 units SC 1-2 hours prior to surgery and 2500 units SC 12 hours later, then 5000 units SC daily beginning postoperative day 1	Avoid if CrCl < 30 mL/min	Consider 7500 units SC daily OR 5000 units SC every 12 hours OR 40-75 units/kg SC daily
Enoxaparin ^{3,4,5,6}	40 mg SC 10-12 hours prior to surgery, then 40 mg SC daily or 40 mg SC daily with first dose 6-12 hours postoperative	Recommend 30 mg SC daily if CrCl < 30 mL/min	Consider 40 mg SC every 12 hours OR 0.5 mg/kg SC daily
Fondaparinux ^{3,4,6,7,8}	2.5 mg SC daily no earlier than 6-8 hours postoperative Avoid in patients weighing < 50 kg	Caution if CrCl 30-49 mL/min Avoid if CrCl < 30 mL/min	Consider 5 mg SC daily
UFH ^{13,14,15}	5000 units SC 2-4 hours prior to surgery, then 5000 units SC every 8 hours through postoperative day 1	Same as standard dose	Consider 7500 units SC every 8 hours postoperative
Apixaban ^{9,11,16}	UFH 5000 units SC 30 minutes prior to surgery and every 8 hours through postoperative day 1, then apixaban 2.5 mg PO every 12 hours	Avoid if CrCl < 30 mL/min	No dose adjustment available

CrCl = estimated creatinine clearance; PO = oral; SC = subcutaneous

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STATE OF THE ART REVIEW

Prevention of venous thromboembolism in patients with cancer

Saketh R Guntupalli,¹ Daniel Spinosa,¹ Stephanie Wethington,² Ramez Eskander,³ Alok A Khorana⁴

FULL LENGTH ARTICLE · Volume 159, Issue 2, P476-482, November 2020

Cost-effectiveness of apixaban for prevention of venous thromboembolic events in patients after gynecologic cancer surgery

Amanda Glickman^a · Alyse Brennecke^a · Anna Tayebnejad^a · Koji Matsuo^b ·
Saketh R. Guntupalli^a · Jeanelle Sheeder^{a,c} 



FULL LENGTH ARTICLE · Volume 158, Issue 3, P754-759, September 2020

 Download Full Issue

Adherence to postoperative thromboprophylactic medication among gynecologic oncology patients: A subanalysis

Megan E. Ross^a  · Amanda Glickman · Alyse Brennecke · Anna Tayebnejad ·
Saketh R. Guntupalli



Home > Annals of Surgical Oncology > Article

Validation of the Safety and Efficacy of Apixaban as Postoperative Thromboembolism Prophylaxis for Patients with Gynecologic Malignancies

Gynecologic Oncology | Published: 23 May 2024



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Original Research

Outcomes Associated With a Five-Point Surgical Site Infection Prevention Bundle in Women Undergoing Surgery for Ovarian Cancer

Melissa H. Lippitt, MD, Melissa Gerardi Fairbairn, PA-C, Rayna Matsuno, PhD, Rebecca L. Stone, MD, Edward J. Tanner III, MD, Elizabeth C. Wick, MD, Ana C. Angarita, MD, Kara Long Roche, MD, MS, Kimberly L. Levinson, MD, MPH, Jennifer E. Bergstrom, MD, Abdulrahman K. Sinno, MD, Melanie S. Curless, RN, MPH, Stephanie Wethington, MD, Sarah M. Temkin, MD, Jonathan Efron, MD, Deborah Hobson, RN, and Amanda N. Fader, MD

- Johns Hopkins Study used intervention in ovarian cancer patients to decrease SSI
- 219 patients were enrolled and included in final analysis compared to historical controls
- Showed a substantial reduction in superficial and deep space infection OR 0.13, 95% CI 0.037–0.53; P=.001
- Substantial reduction in cost post intervention due to decrease in rehospitalization

Box 1. Johns Hopkins 5-Point Surgical Site Infection Prevention Bundle Elements

Preoperative measures

1. Chlorhexidine wash using 4% chlorhexidine gluconate wipes

1. Administered at home by patient with detailed instructions
 - a. One washcloth used for the: 1) neck, chest, and abdomen; 2) both arms; 3) left leg; 4) right leg; 5) back; 6) back and forth over surgical area for 3 min
 - b. Applied the night before surgery and the morning of surgery
2. Patient provides written documentation of use by bringing in labels from the washcloth pack

2. Mechanical bowel preparation with oral antibiotics

1. One bottle of Miralax powder (238 g) and four tablets bisacodyl, 5-mg tablets) and antibiotics (nine tablets of neomycin sulfate, 500-mg tablets and 12 tablets erythromycin, 250-mg tablets)
2. Begins 24 h before surgery with clear liquid diet followed by a combination of antibiotics and laxatives

Intraoperative measures

3. Antibiotic and skin preparation administration

1. Intravenous cephalozolin (1–3 g, weight-based) and metronidazole 500 mg IV administered within 30 min of procedure
2. Cephalozolin redosing when applicable (ie, every 3 h, when greater than 1,500 estimated blood loss has occurred, or both)
3. Skin, vaginal, and anogenital preparation with a 4% chlorhexidine solution

4. Adoption of enhanced sterile techniques during intestinal resection and wound closure

1. Gown and glove change by surgical team after intestinal surgery
2. Change of instruments for wound closure

Postoperative measures

5. Strict postoperative wound management

1. Appropriate timing of dressing removal by nursing
2. Enhanced attention to wound care by housestaff and nursing
3. Strict glycemic control to keep blood sugars less than 180 mg/dL

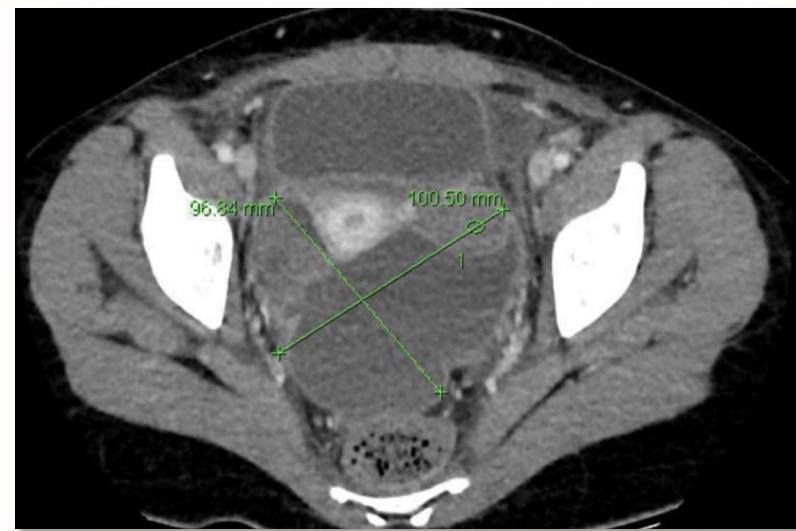


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Novel interventions to prevent infection after ovarian cancer and gynecologic surgery

- In our own institution, between 2020-2021, we noted an increased rate of infection after hysterectomy, particularly after ovarian cancer debulking.
 - COVID 19 pandemic
 - Impaired staffing
- These increased infections increased our readmission rate, increased global cost associated with ovarian cancer surgery and ultimately impaired patient satisfaction.
- Re-admission after surgery also resulted in delayed adjuvant chemotherapy interventions





Improving post op infection rates- Bundles/Programs

- Strategies to improve SSI rates
- At our institute of SSI after hysterectomy rates increased over the pandemic
- Interventions to the left have substantially reduced infection rates over the last 10 months
- Changed in antibiotic therapy to include Flagyl and 3rd generation cephalosporin in all patients

BUNDLE ELEMENTS

Pre-op antibiotic (Flagyl)

“Chin-to-toes” skin cleansing

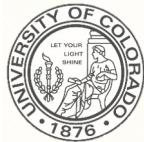
CHG vaginal prep

Oral antibiotic with bowel prep

Clean Closure Tray



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Improving post-operative infection rates

- Clean closure trays can substantially reduce infection in the post-operative period
- A completely sterile and unused set should be used for any instruments used to close the fascia and skin
- All present should re-gown and re-glove prior to the closure
- Stony Brook method- substantially reduced in infection rate after colorectal surgery

Bulletin



AMERICAN COLLEGE OF SURGEONS
Inspiring Quality:
Highest Standards, Better Outcomes

- Before closing the abdominal wall, the OR team operating within the sterile field will:
 - (1) Re-glove
 - (2) Re-prep
 - (3) Re-towel incision area
 - (4) Use reserved clean instrument tray for closing

What were the results?

The strategy used in this study resulted in a 41 percent decrease in SSI rates following colorectal resection over a six-year period, and its durability was demonstrated by continuing improvement over an additional two years. Evaluation of follow-up data was correlated with independent review by the New York State Department of Health, which demonstrated parallel evidence of continual improvement.⁸



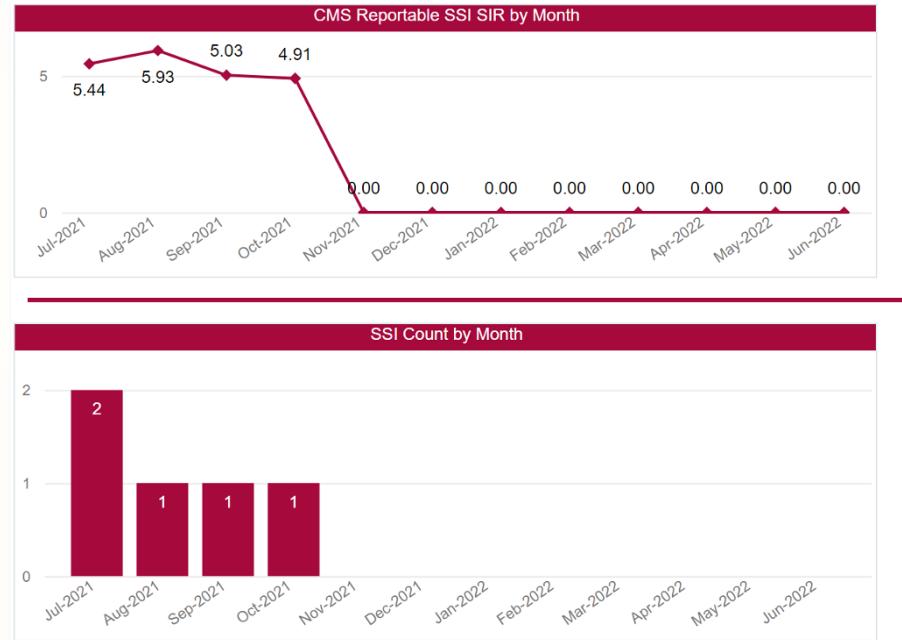
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Results of QI intervention to decrease SSI rates



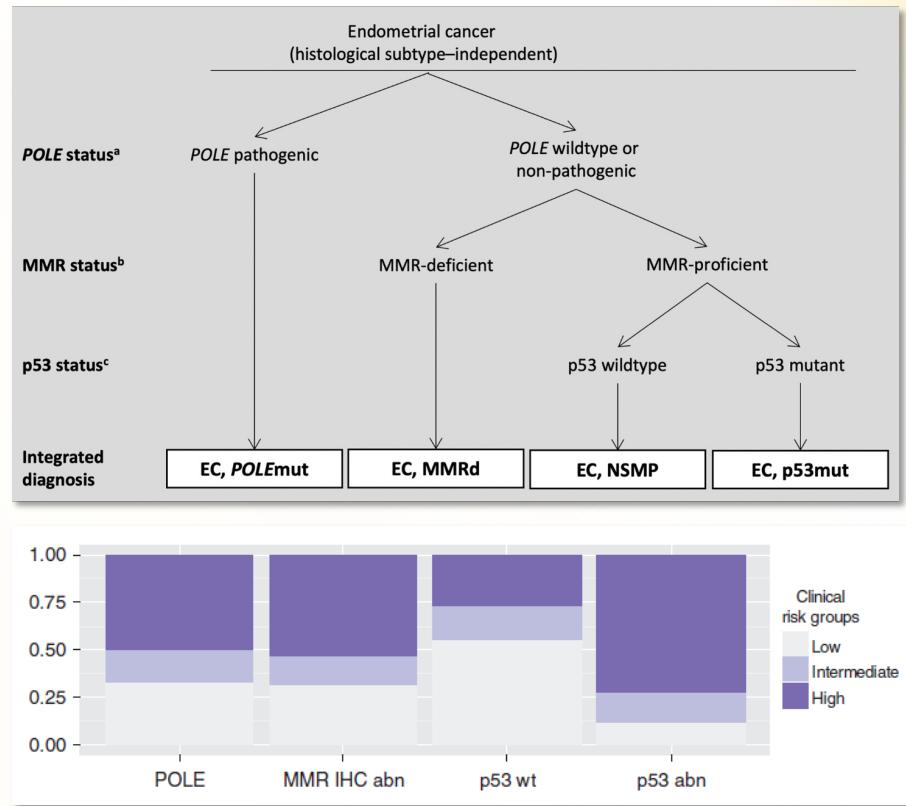
- After intervention we went from a mean incidence of 5.4 SSI infections/100 cases to almost zero.
- Effective implementation of a safety bundle to improve this.
- Safe and easy to do
 - Incorporation of trainees into this model
 - Incorporation of OR nursing staff

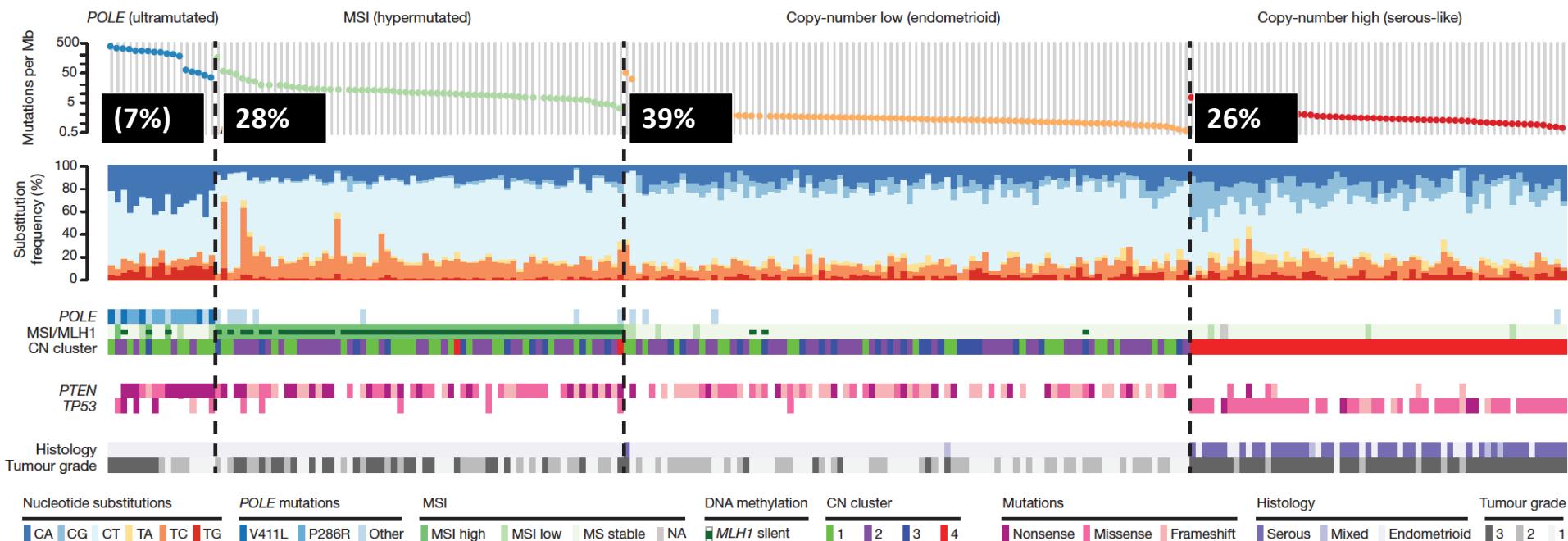




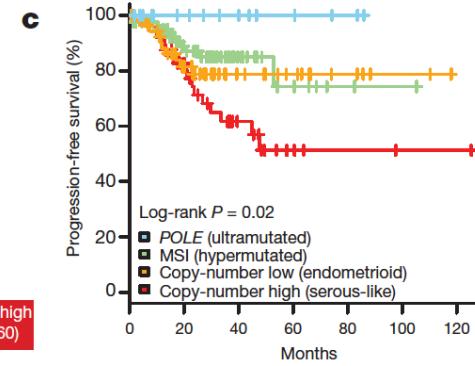
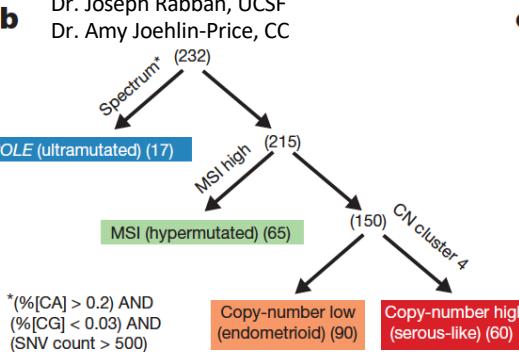
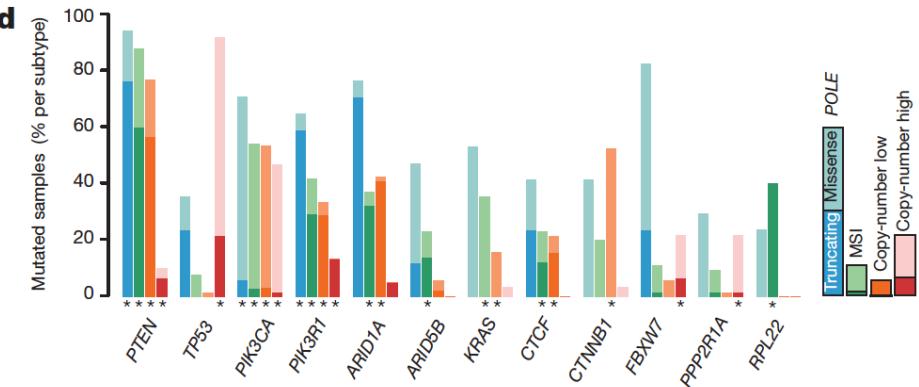
Improving outcomes in Endometrial Cancer patients

- A molecular revolution has taken place in gynecologic cancer
- Endometrial cancer has been completely rethought at the molecular level
 - NO longer just about stage/grade
 - What does the molecular signature of this tumor show



a**b**

Guidance
 Dr. Joseph Rabban, UCSF
 Dr. Amy Joehlin-Price, CC

**d**



Improving outcomes in Endometrial Cancer patients

- How do we stay ahead in cancer therapy and how do we offer the most cutting edge care for our patients
- Endometrial cancer is one of the few cancers whose incidence is increasing in the US with now >60,000 cases/year
- What can we offer our patients that is different and may be actionable to maximize survival



Cancer: Volume 123, Issue 5

Pages: 711-893
March 1, 2017

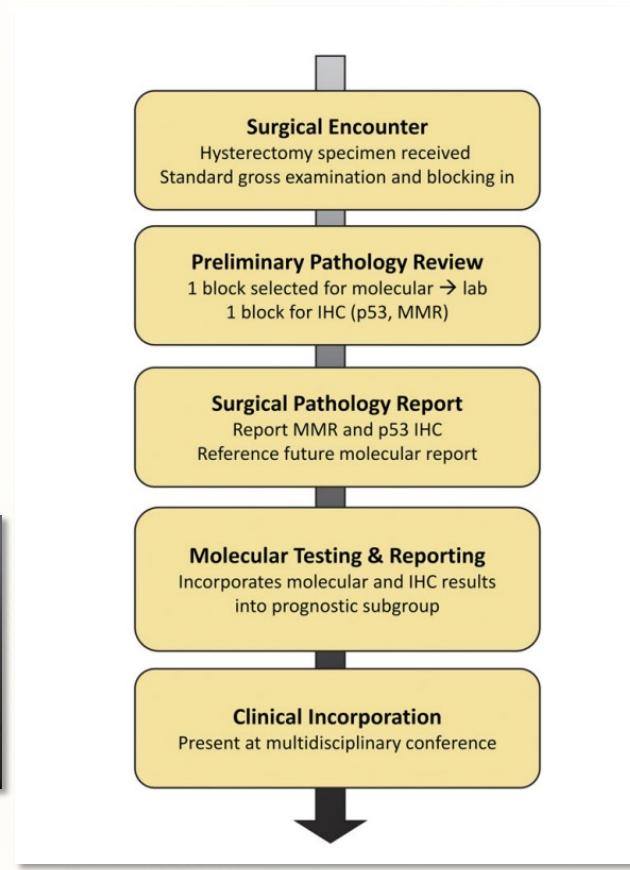
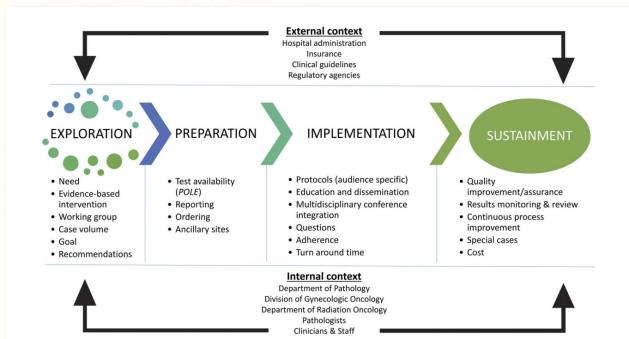
Original Article

Confirmation of ProMisE: A Simple, Genomics-Based Clinical Classifier for Endometrial Cancer

Aline Talhouk, PhD¹; Melissa K. McConechy, PhD²; Samuel Leung, MSc³; Winnie Yang, BSc¹; Amy Lum, BSc¹; Janine Senz, BSc¹; Niki Boyd, PhD¹; Judith Pike, MD⁴; Michael Anglesio, PhD¹; Janice S. Kwon, MD, MSc⁴; Anthony N. Karnezis, MD, PhD¹; David G. Huntsman, MD¹; C. Blake Gilks, MD⁵; and Jessica N. McAlpine, MD⁴



Improving outcomes in Endometrial Cancer patients

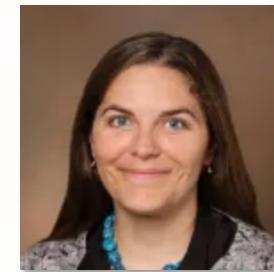


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Original Article

Prospective Clinical Prognostication of Endometrial Carcinomas Based on Next-generation Sequencing and Immunohistochemistry—Real-world Implementation and Results at a Tertiary Care Center

Kurtis D. Davies, Ph.D., Lynelle P. Smith, M.D., Amy Guimaraes-Young, M.D., Ph.D., Bradley R. Corr, M.D., Christine M. Fisher, M.D., M.P.H., Saketh R. Guntupalli, M.D., Amber A. Berning, M.D., Miriam D. Post, M.D., Devon Pino, M.D., Dara L. Aisner, M.D., Ph.D., and Rebecca J. Wolsky, M.D.



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- Results showed that our patients largely mirror findings in other cohorts including the original PRoMIsE cohort
- Our patients are mainly copy number low/low tumor mutational burden (endometrioid phenotype)
 - A sizable percentage were “endometrioid” with *mutP53* suggesting a need for more aggressive treatment
 - A small number were “high intermediate risk” but *POLE* hypermutated suggesting possible de-escalation

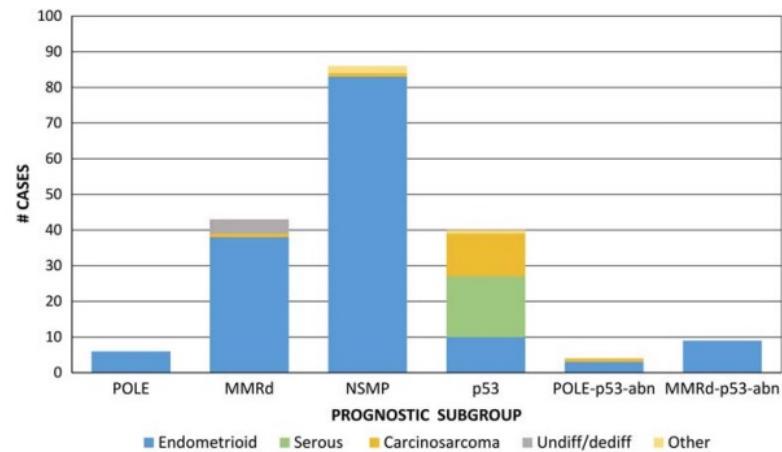
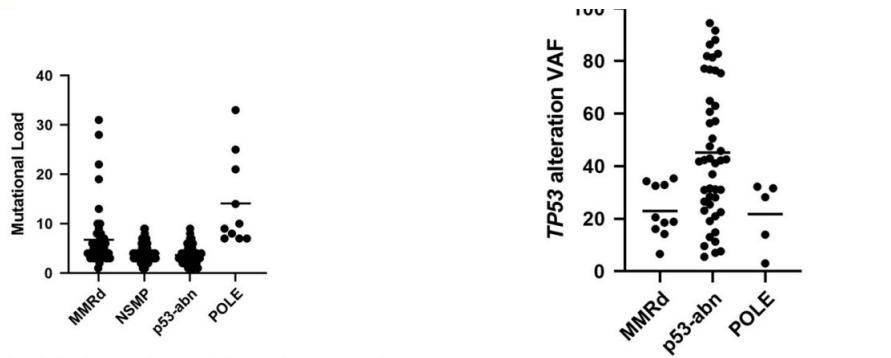


FIG. 3. Prognostic subgroup composition by histotype. MMRd indicates mismatch repair deficient; NSMP, no specific molecular profile; Undiff/dediff, undifferentiated/dedifferentiated carcinoma.





Where are we going in Ob/Gyn?

3 major areas where we will need to focus

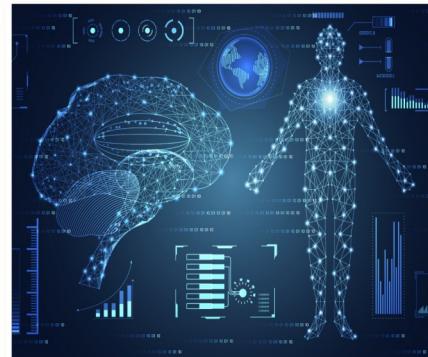
- Artificial Intelligence in Women's Health
- Harnessing the immune system to improve outcomes in women's health, particularly in cancer
- Health Care Advocacy



Artificial Intelligence in Women's Health

- There are innumerable applications for AI in women's health
- There are some incredible potential in the space of obstetrics particularly in optimizing labor outcomes
 - Fetal heart monitoring
 - Preeclampsia/HELLP model predictions
 - C section timing

How AI is helping advance women's health around the world



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nature SCIENTIFIC REPORTS

- AI has been used to optimize labor outcomes by analyzing millions of variables a second and pooling FHT tracings across an entire EMR system
- By doing this in this model, AI was able to predict fetal compromise and offer actionable models for practitioners
- There were limitations in some situations
- Is this the future of using AI to optimize fetal AND maternal outcomes and obviate bias?

Rapid detection of fetal compromise using input length invariant deep learning on fetal heart rate signals

Lochana Mendis¹✉, Marimuthu Palaniswami¹, Emerson Keenan^{1,2,3} & Fiona Brownfoot^{2,3}

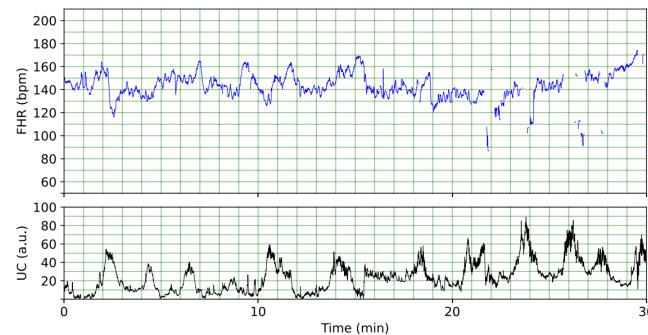


Figure 1. A 30 mins snippet of a cardiotocography recording showing the fetal heart rate (FHR) in blue (—) and the uterine contractions (UC) in black (—). The FHR is shown in beats per minute (bpm) and UC is shown in arbitrary units (a.u.).

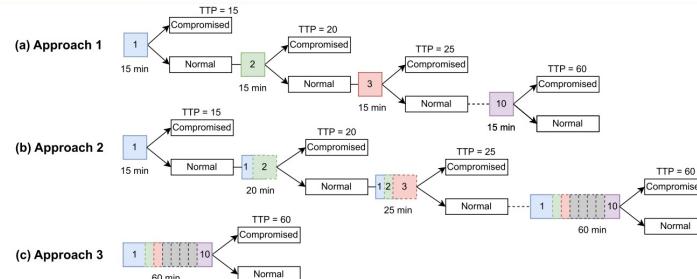
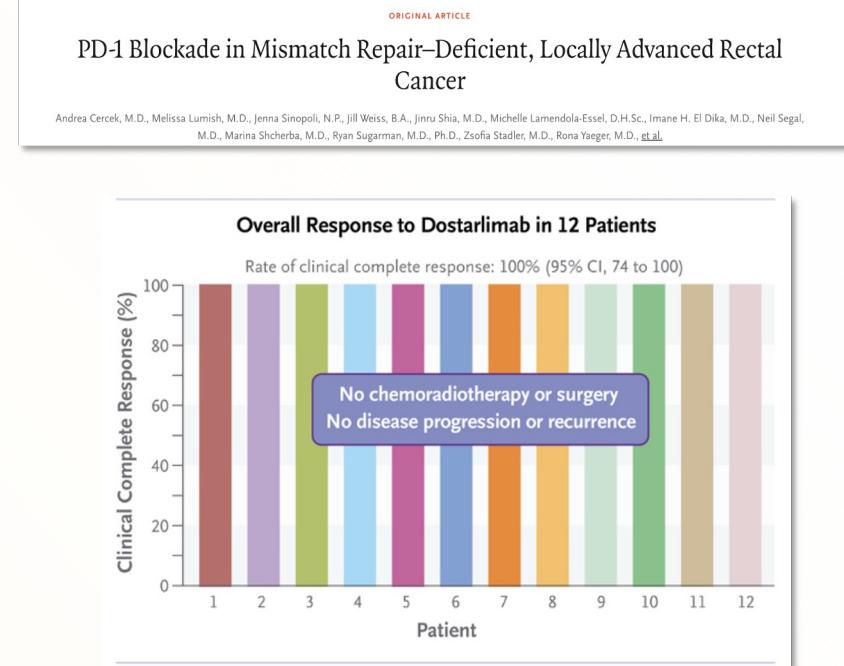


Figure 7. An overview of the TTP approaches in evaluating a 60 mins FHR recording. (a) Approach 1: Evaluating 15 mins sliding windows with a stride of 5 mins. (b) Approach 2: Evaluating cumulative windows starting from 15 mins and growing by 5 mins. (c) Approach 3: Evaluating the entire 60 mins signal.



Harnessing the immune system to improve women's cancer care

- In a landmark trial of immunotherapy in colo-rectal cancer
- 12 patients received dostarlimab an anti-PD 1 inhibitor
 - Must have a specific DNA signature called mismatch repair deficiency
- Patients received the drug every three weeks for 6 months
- If they had a complete response could forgo chemo and surgery
- Results
 - 100% of the patients had a COMPLETE response
 - No disease progression at 12 months
 - Most common side effects were rash, fatigue and nausea





The New York Times

A Cancer Trial's Unexpected Result: Remission in Every Patient

The study was small, and experts say it needs to be replicated. But for 18 people with rectal cancer, the outcome led to “happy tears.”

Dr. Kimmie Ng, a colorectal cancer expert at Harvard Medical School, said that while the results were “remarkable” and “unprecedented,” they would need to be replicated.



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Spring 2022 / The Future of Cellular Cancer Immunotherapy at Winship

PIONEERING PERSPECTIVE

The Future of Cellular Cancer Immunotherapy at Winship



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The case of WW.....

- 64yo in normal state of health began having abdominal pain..
- Found to have large 20x10cm ovarian mass an fluid in abdomen
- Underwent removal in Wyoming² found to have Stage 3 cancer--> referred to CU Cancer center² reoperation +chemo
- Did well for 1 year then recurred, treated with chemo
- Did well for 6 months but complaining of shortness of breath
- Sent of NGS genetic testing and tested for PDL-1

Results with Therapy Associations					
BIOMARKER	METHOD	ANALYTE	RESULT	THERAPY ASSOCIATION	BIOMARKER LEVEL*
BRAF	Seq	DNA-Tumor	Pathogenic Variant Exon 15 p.V600E	BENEFIT dabrafenib, trametinib, vemurafenib	Level 3A
ER	IMC	Protein	Positive 2+, 90%	BENEFIT endocrine therapy	Level 3A
PD-L1 (22c3)	IMC	Protein	Positive, CPS: 2	BENEFIT pembrolizumab	Level 3A

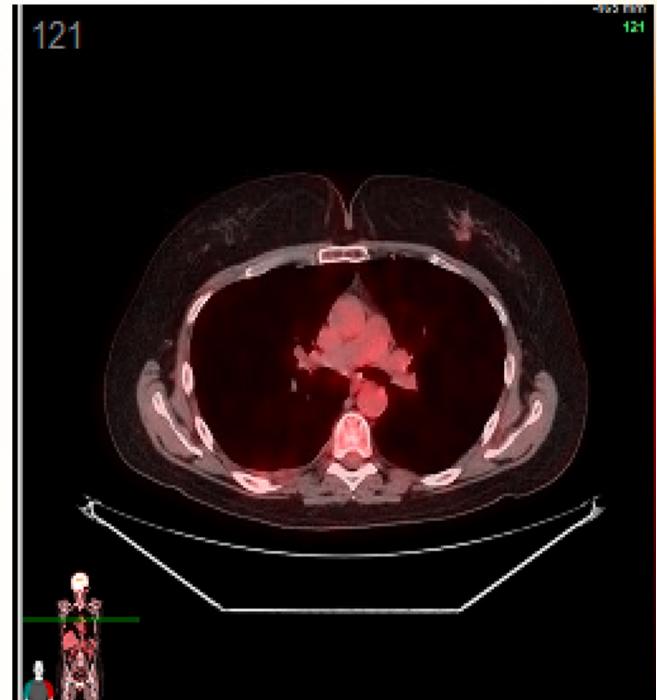
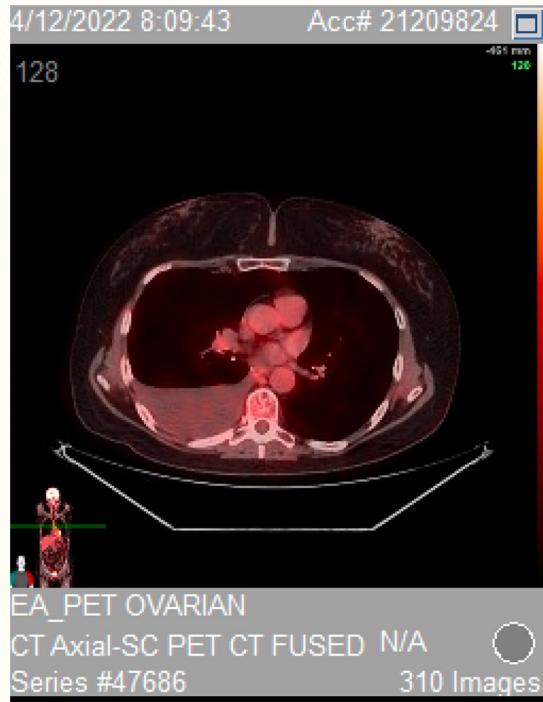
* Biomarker reporting classification: Level 1 - highest level of clinical evidence and/or biomarker association included on the drug label; Level 2 - strong evidence of clinical significance and is endorsed by standard clinical guidelines; Level 3 - potential clinical significance (3A - evidence exists in patient's tumor type, 3B - evidence exists in another tumor type).

Important Note





The case of WW....



Component	Ref Range & Units	9/29/22 0950	8/18/22 0915	7/7/22 0805	5/26/22 0831	4/14/22 0743	3/24/22 0720
Cancer Antigen 125 DXI	0 - 35 U/mL	21	24	12	38▲	738▲	973▲
Resulting Agency		AMC Lab	AMC Lab	AMC Lab	AMC Lab	AMC Lab	AMC Lab



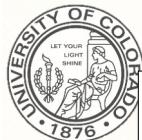
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The case of WW.....

- WW was diagnosed with, in essence, **an incurable cancer...**
- She has received 8 infusions of immunotherapy and is cancer free
- Tumor markers and her scans have normalized
 - **DISEASE FREE FOR 2 YEARS**
- Why did this work so well?
 - She underwent advanced immunologic testing
 - Do we really know?



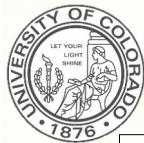


Over 100 meetings held during #SGOFlyIn Day



Advocate at the local and national level

- Physicians have significant authoritative power
- People and politicians listen when we speak
- We must develop the ability to sit across from others who disagree with us and advocate our point
 - Common sense solutions for common ground problems!
 - Advocacy starts by being a good listener
 - Holding firm to core beliefs in reproductive justice
- Where do we find common ground on health care advocacy
 - No one wants to see women die from pregnancy
 - State level referendums seem to work
 - Kansas
 - Ohio
 - Georgia?

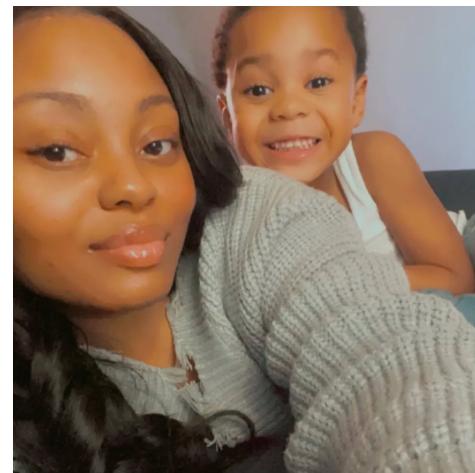


Healthcare Advocacy

- Women's health continues to be underfunded and underrepresented in the national healthcare landscape.
- Unique to Ob/Gyn is that a VITAL portion of our practice is being regulated by national political debates
- Relitigating of rights that we thought were enshrined
 - The End of Roe vs Wade
 - Regulations surrounding contraception
- Advocating for improved access to maternal health in early pregnancy

CBS MORNINGS

Family of Georgia mother who died after delayed abortion care says Amber Thurman should still be alive: "It was preventable"





Our Abysmal Maternal Health Statistics And How To Improve Them

Bill Frist Contributor ©

I cover global and domestic health care and conservation.

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Oct 12, 2016, 03:26pm EDT

Updated Oct 12, 2016, 04:28pm EDT

ⓘ This article is more than 8 years old.

ⓘ This piece is coauthored by Saketh R. Guntupalli, MD, FACOG, FACS. Dr. Guntupalli is assistant professor of gynecologic oncology at University of Colorado School of Medicine, Denver." in



FORBES > BUSINESS > POLICY

Cancer 'Moonshot' For Our Generation

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I cover global and domestic health care and conservation.

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Feb 3, 2016, 04:39pm EST

Low Hanging Fruit: Cervical Cancer And How The US Is Falling Behind

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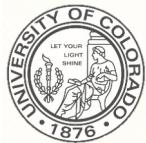
POST WRITTEN BY
Bill Frist, MD and Saketh Guntupalli, MD



Aug 15, 2015, 11:32am EDT



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Thank you!

