Reducing Unnecessary X-rays for Low Back Pain in the Emergency Department

Joshua Moskovitz
Jacobi Medical Center | Bronx, New York

NYC HEALTH+ HOSPITALS | Jacobi

TAKING ACTION ON OVERUSE

Overuse Issue & Rationale

- Overuse of conventional radiography for patients presenting with low back pain.
- Imaging exposes patients to unnecessary radiation, and may lead to unnecessary procedures that lead to unintended harm.

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Setting

Jacobi Medical Center is a Level 1 Trauma Center Emergency Department in the Bronx, New York.

65,000 ED visits per year.

Patients are predominantly uninsured or publicly insured.

Team: Emergency Medicine Residents

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Early Critical Steps

- **Conduct a medical literature review** to identify a consensus about indicators of appropriate or inappropriate imaging.
- **Determine levels of overuse and possible harm** early through:
  - Identify possible sources of data.
  - Conducting chart reviews.
- **Assess** both internal and external stakeholder buy-in, as well as sources of resistance.

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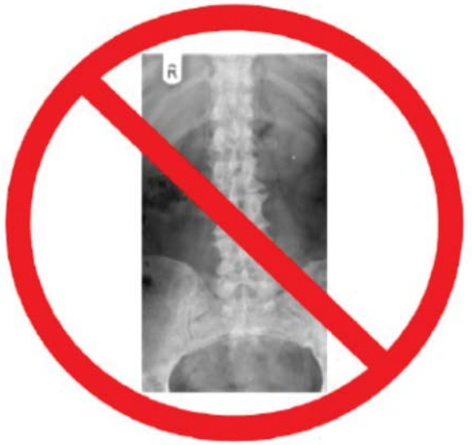
Strategies

- **Clinician education and awareness:** through lectures during usual ED faculty/resident meetings about potential harm from overuse and address concerns.
- **Patient education:** about potential for harm through materials placed in exam rooms.
- **Peer-to-peer feedback:** top 3 over utilizers identified for hallway conversation with the clinical champion.



No Red Flags, No RADS!

In the absence of red flags (trauma, or worsening neurological signs and symptoms) imaging is *rarely* helpful for back pain.

- **Decision-making workflow support:** “Best Practice Advisory” cards placed on computer workstations. (*See above)*
- **Conventional x-ray removed from quicklist order set** in HER.

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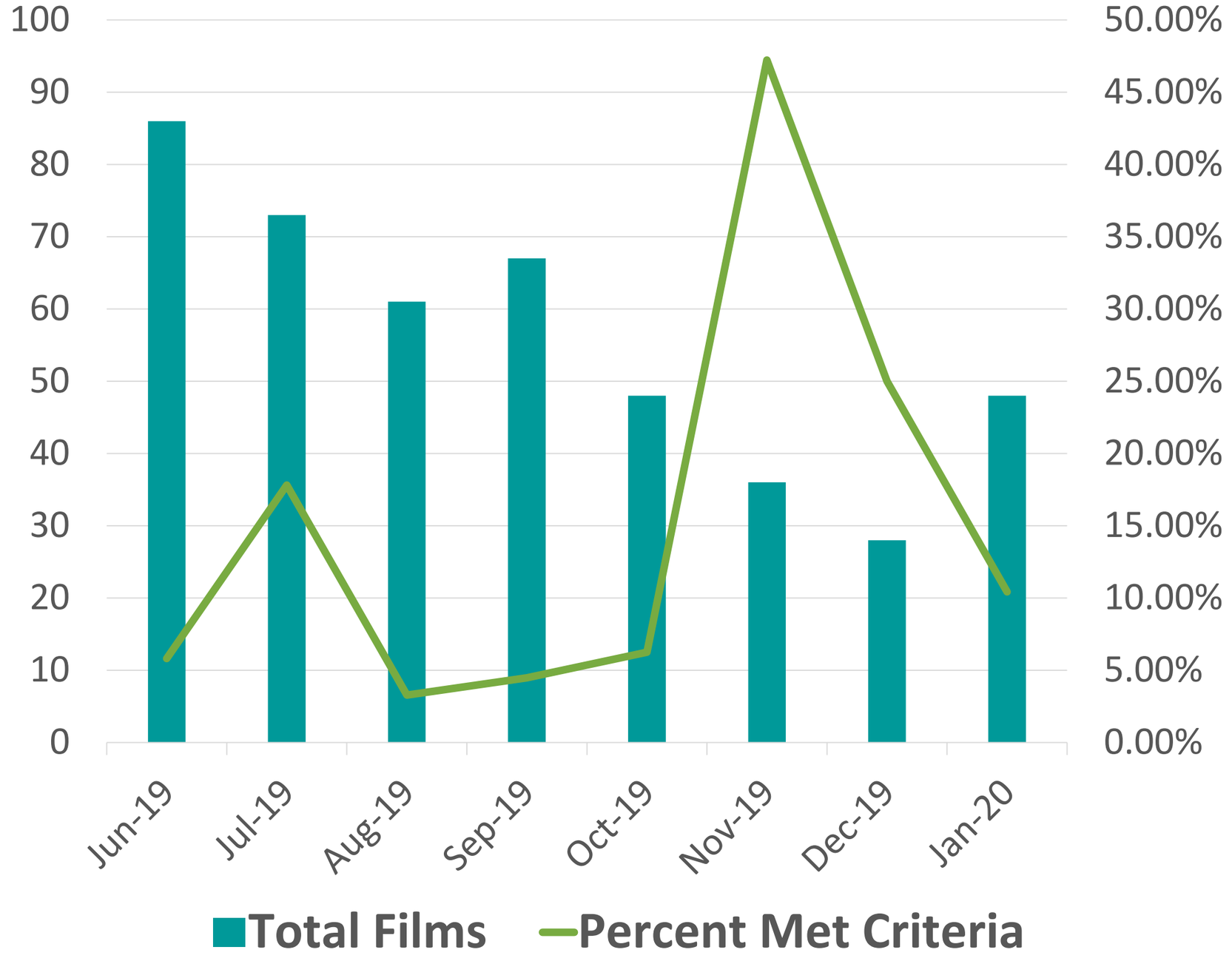
Findings

Trend Chart: Total Radiographs and Percent Appropriate



Key Lessons Learned

- **Engage stakeholders early in conversations about overuse.**
- **Be patient-centric when engaging clinicians: focus on change for patients' benefit.**
- **Start small and simple, even simple tasks (e.g. identifying high utilizers) have many obstacles.**

Next Steps

- Follow up with stakeholders at all levels and celebrate success.
- Use the momentum from this project to address overuse of other radiographic studies in the ED.
- Incorporate learnings from this project into a hospital-wide PI program.
- Present findings at conference and publish in an academic journal.

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TAKING ACTION ON OVERUSE

Care Redesign for Post-Partum Blood Pressure Evaluation

Meeting patients where they are
by eliminating office visits

Lauren D. Demosthenes, MD
PRISMA Health | University of South Carolina School of Medicine Greenville

PRISMA HEALTH SM

TAKING ACTION ON OVERUSE

Rationale

- Hypertension is a leading cause of maternal morbidity, mortality and readmissions.
- New ACOG guidelines recommend that women with hypertensive disorders of pregnancy have BP monitored for 72 hours post partum and again at 7-10 days after delivery.
- PRISMA hypertensive safety bundle began January 2019 with this new guideline.
- In person visits have high “no-show” rates.
- **Goal:** Replace in-person office visits with telehealth enabled blood pressure checks as suggested by new guidelines.

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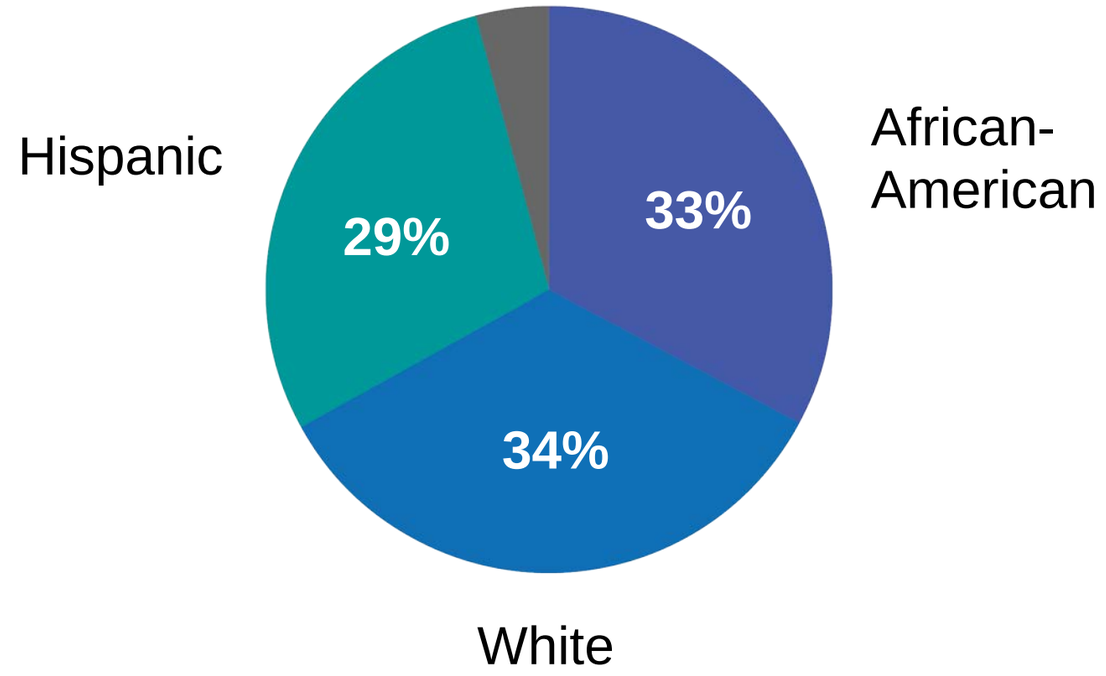
Setting & Population

PRISMA Greenville Memorial Hospital Obstetrical Center patients

2,664
deliveries
in 2019

75%
Medicaid



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Critical Early Steps

- Departmental buy-in by applying for and receiving a SC telehealth grant in collaboration with another health system
- Creation of project as a randomized controlled trial with IRB approval from two sites
- Inclusion of resident and attending team as mandatory resident research ensuring ongoing departmental awareness and support

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Strategies

Qualitative interviews with patients to assess their access to technology and address anticipated resistance from providers. (patients had smart phones and liked the idea of remote monitoring)

Continuous communication with other academic medical centers who are using and finding success with technology

Communication to department re: adherence to guidelines and post partum BP visits since implementation of hypertensive safety bundle – demonstrating opportunity for a better way

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Challenges

- Delays in launching project due to **long process of multi-site IRB**
- **Delays with technology company** that is providing the service: resulted in a third site.
- **Applying for and dividing grant funds** between two institutions.
- **Delays allowed more robust baseline data** from launch of safety bundle and inclusion of third site which will increase size of study population and provide data on readmissions.
- **Acceptance of telehealth suboptimal** due to fee-for-service Medicaid.

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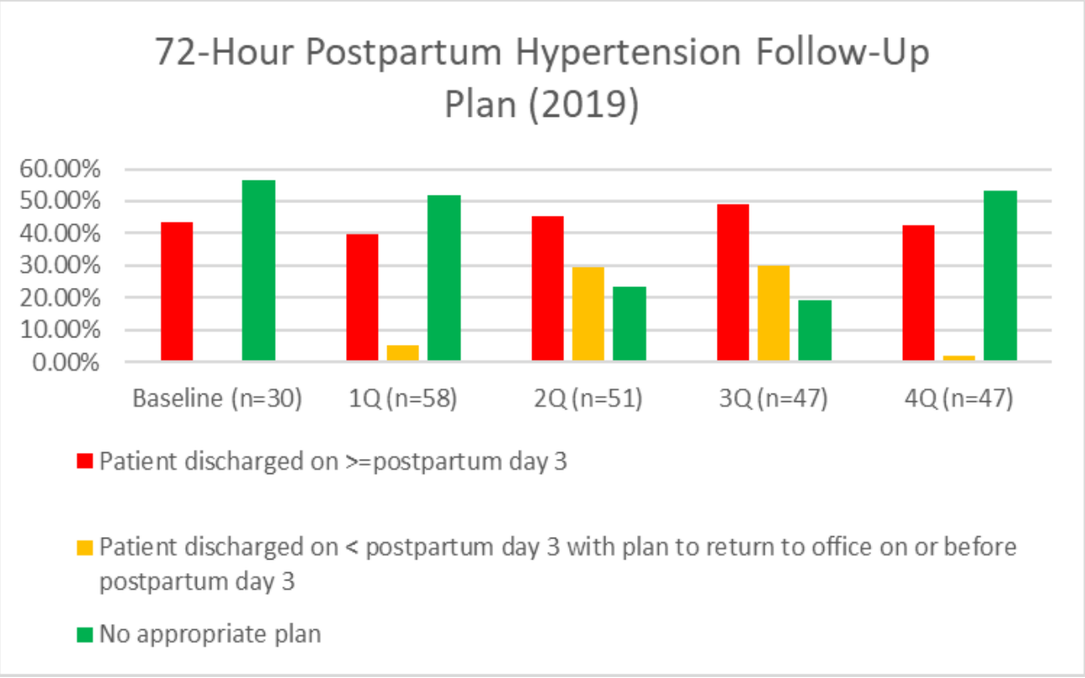
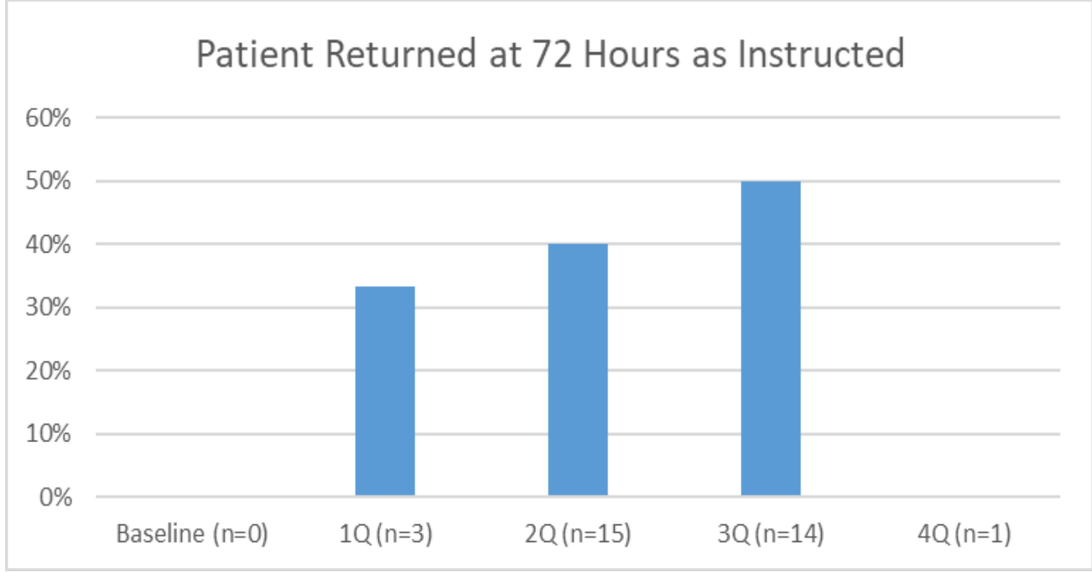
Findings

Pre-implementation findings since the release of the safety bundle (January 2019) demonstrate the need for a different care model addressing patient adherence





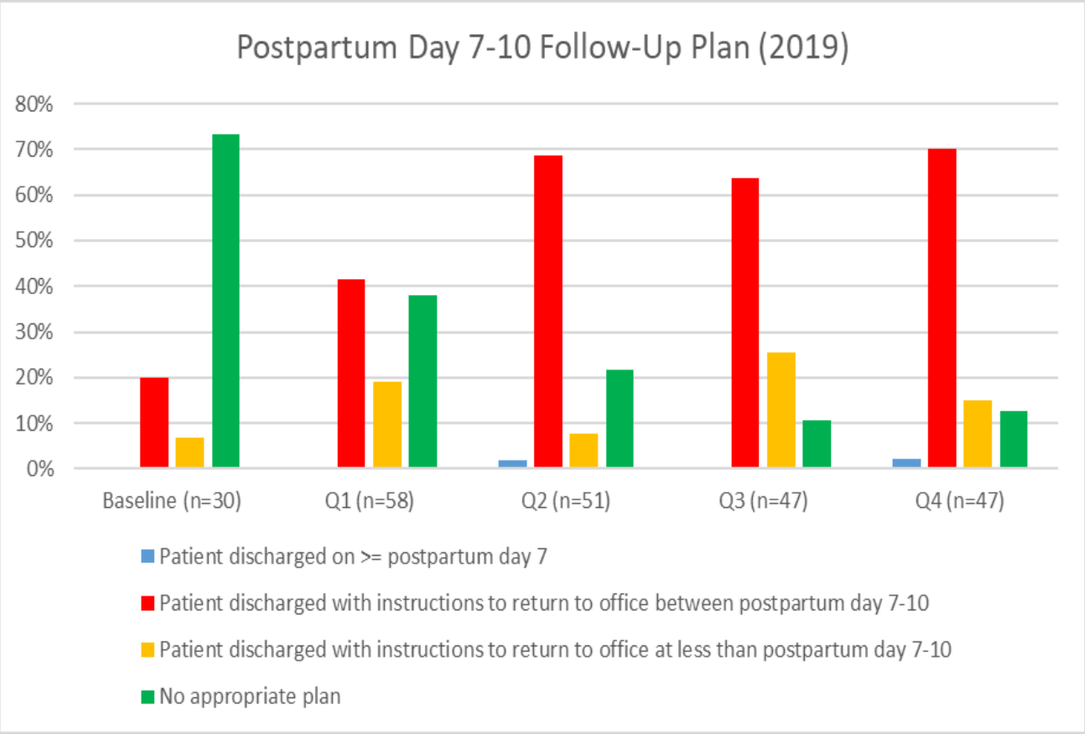
*Notably, MFM eliminated 3-day blood pressure check by Q4 due to patient adherence difficulties

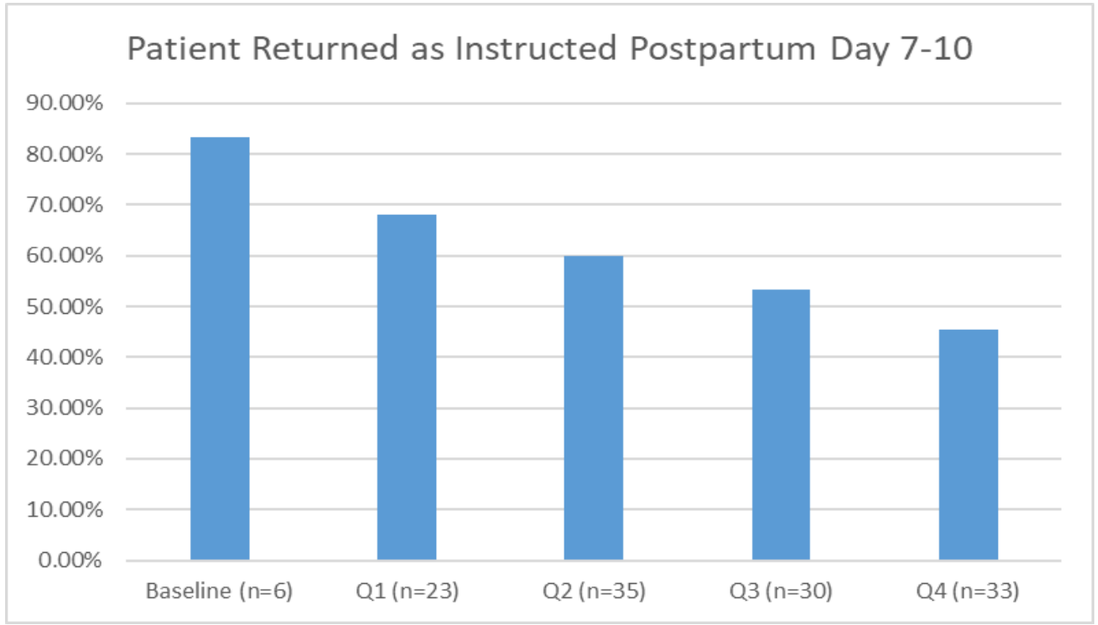
PRISMA HEALTH

TAKING ACTION ON OVERUSE

Findings

Pre-implementation findings since the release of the safety bundle (January 2019) demonstrate the need for a different care model addressing patient adherence





*As more patients were told to return in 7-10 days, % of adherence decreased.

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Next Steps & Lessons Learned

- Expect formal launch of study in April: unlikely now due to Covid-19
- Currently in conversation with state Medicaid and our health system about reimbursement for these services.
- Expanding research with the third site
- Article in OBGManagement “Break that Practice Habit”
- Present findings at High Value Practice Academic Alliance
- Launching new IRB approved survey to bring in the patient voice

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TAKING ACTION ON OVERUSE

Overuse of Opioids for Chronic Pain in Primary Care

Roberto Diaz del Carpio MD
Department of Medicine, Jacobs School of Medicine | Buffalo, NY

University at Buffalo The State University of New York
Jacobs School of Medicine and Biomedical Sciences

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Overused Service & Rationale

- When prescribing long-term opioid therapy for chronic pain, the **potential for harm often outweighs the potential for benefit.**
- Erie County has a **high rate of opioid overdose and death**, and many of our clinics do not have a consistent and safe approach to managing long-term opioid therapy in our patient population.

Setting

Hertel Elmwood Primary Care Internal Medicine Center.

5 general internists

1 family physician

1 nurse practitioner

32 internal medicine residents

110 on Long-term opioid therapy

Patients are predominantly uninsured or on Medicaid.

Early Critical Steps

- **Leadership engagement/set up an improvement team/** to gather and review baseline encounter characteristics, engage clinical/clerical staff and redesign the long-term opioid therapy encounter.
- **Baseline Data Assessment** (next slide) helped to prioritize key aspects of the long-term encounter.
- **Re-design a standardized chronic pain encounter** with workflows for front desk staff, nurses, medical assistants and clinicians, and with screening tools incorporated into each workflow.

Long-Term Opioid Therapy patient encounter characteristics in a Primary Care Center. Buffalo, NY. October 2019.

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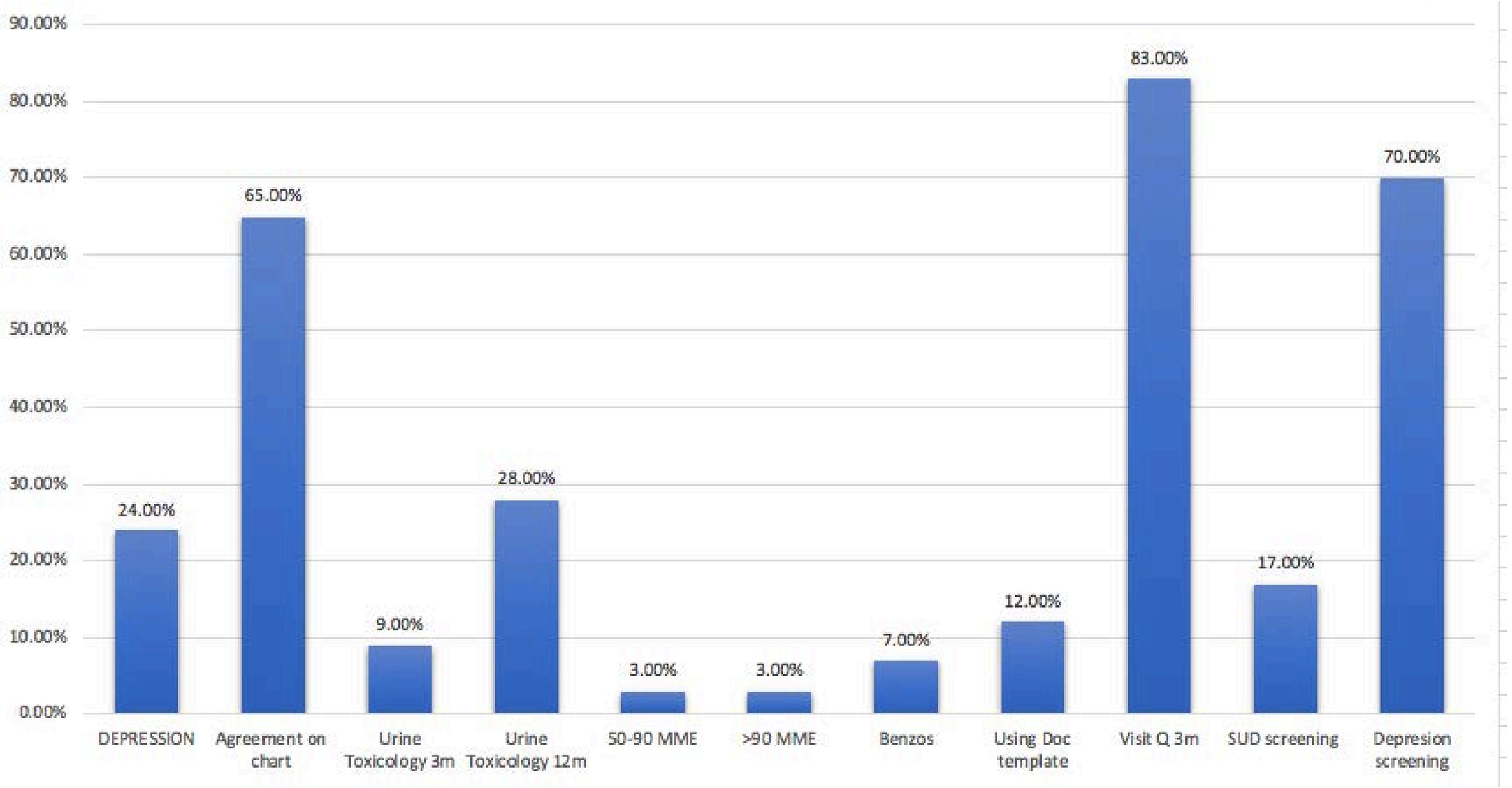


Timeline of Interventions

Engagement/Data dissemination/ Story telling

RX

New CPM encounter

Weekly feedback Workflow, education, templates

Encounter re-design

Baseline data assessment/chart review

Timeline

October 2019

Nov-Dec 2019

Jan 20th

Feb-March

TURN THE TIDE

PRESCRIBING OPIOIDS FOR CHRONIC PAIN

ADAPTED FROM CDC GUIDELINE

Opioids can provide short-term benefits for moderate to severe pain. Scientific evidence is lacking for the benefits to treat chronic pain.

IN GENERAL, DO NOT PRESCRIBE OPIOIDS AS THE FIRST-LINE TREATMENT FOR CHRONIC PAIN (for adults 18+ with chronic pain > 3 months excluding active cancer, palliative, or end-of-life care).

BEFORE PRESCRIBING

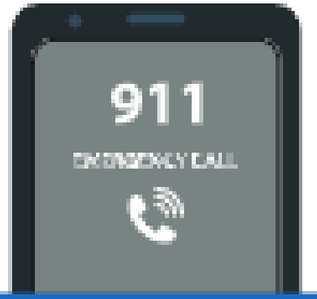
How to use Narcan® Nasal Spray for an opioid overdose

KNOW THE SIGNS OF OVERDOSE

- Person is passed out and you cannot wake them up.
- Breathing very slow, making gurgling sounds, or not breathing at all.
- Lips are blue or grayish color.

CHECK FOR A RESPONSE

- Shake them and shout to wake them up.
- If no response, grind your knuckles into their chest bone for 5-10 seconds.
- If the person still does not respond, call 911.



CALL 911

- Tell the 911 dispatcher, *"I think someone has overdosed!"*
- If you report an overdose, you and the overdosed person have significant protections under the New York State Law from being charged with drug possession, even if you shared drugs.

Chronic Pain Management Visit (60 min.)

Patient Arrival and Check-in (5 min.)

MA/Nurse Task
Pre-Visit Patient Chart Assessment (5 minutes)

Triage (15 min.)

MA/Nurse Task	Provider Task
Triage and Screenings (15 min.)	Pre-Visit Chart Review

Provider Visit (30 min.)

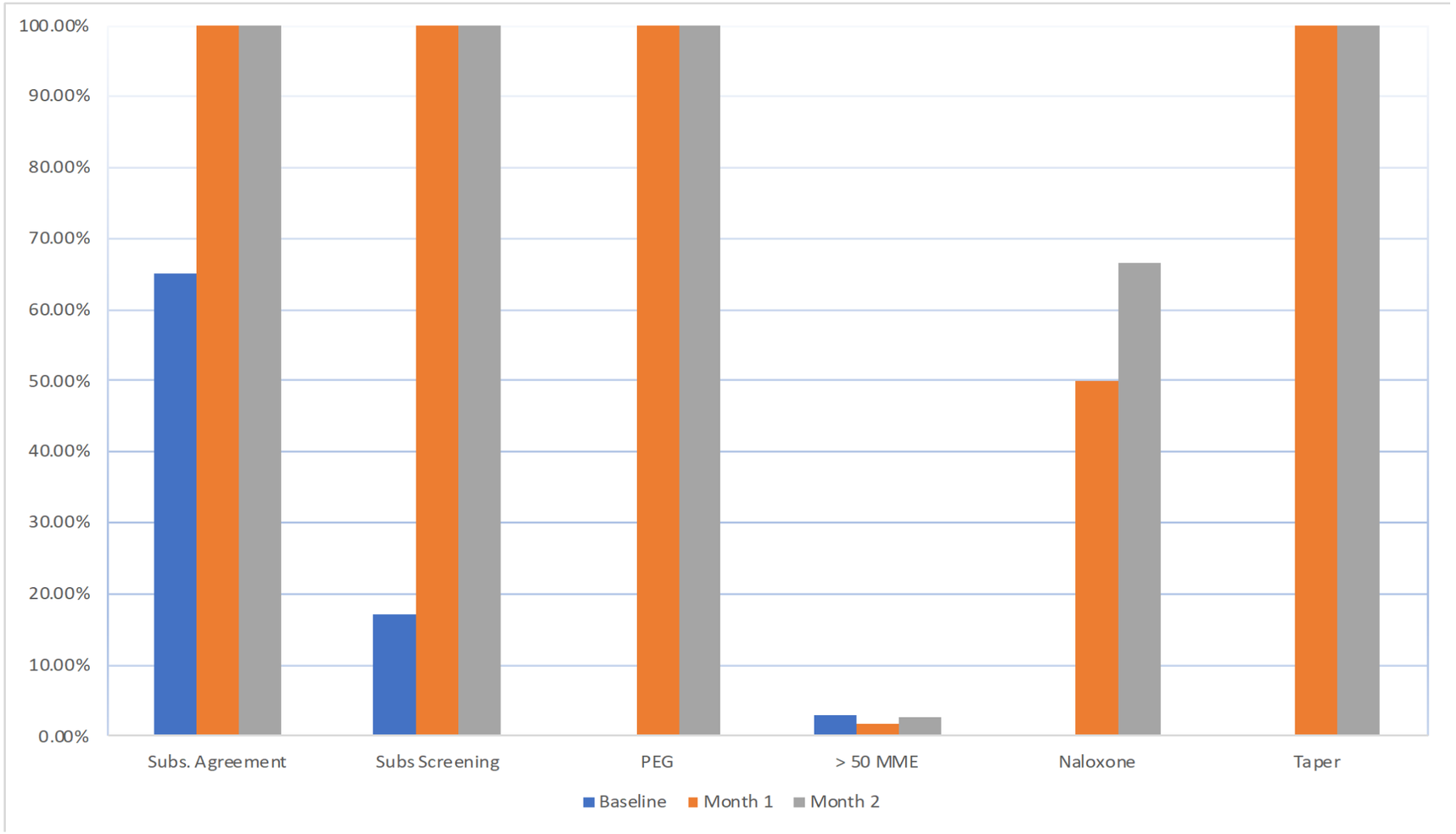
MA/Nurse Task	**Provider Task**
Obtain Patient Education Materials and urine Toxicology Cup	Patient History and Physical Exam (10 min.) Medication Discussion (10 min.) Create a Chronic Pain Care Plan (5 min.) Narcan Discussion (5 min.)

MA/Nurse Visit (15 min)

MA/Nurse Task	Provider Task
Urine Toxicology Screen Narcan Training Patient Education	Write Narcan Prescription

Schedule Follow-up and Discharge

Long-Term Opioid Therapy 8 weeks post intervention in a Primary Care Center. Buffalo, NY. March 2020.



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Key Lessons Learned

- **Listen to patient and clinician stories** about chronic pain experiences.
- **Chart review** to learn the untold story from administrative data
- **Engage your team/practice early.**
- **Use evidence** to guide your intervention strategy.

Next Steps

- Sustainability plan, write study protocol, statistical analysis, register study
- Analyze data from control practices, Implement in other practices

Overuse of Antibiotics for Diabetic Foot Wounds

Leslie Dunlap, PA-C
University of New Mexico Hospital | Albuquerque

UNM HEALTH SCIENCES

TAKING ACTION ON OVERUSE

Overused Service & Rationale

- Overuse of antibiotics for diabetic foot wounds is common.
- Cascading consequences of patient harm include antibiotic resistance, increased admission rates, prolonged length of stay, antibiotic side effects (kidney damage, Clostridium difficile infection, etc.) and increased costs.

UNM HEALTH SCIENCES

TAKING ACTION ON OVERUSE

Setting & Population

University of New Mexico Hospital, the only academic medical center and level-1 trauma center in New Mexico.

- Many patients are referred from rural areas of the state.
- New Mexico is ranked 49th on national poverty level.

38%
Medicaid

27%
Medicare

16%
Uninsured

UNM HEALTH SCIENCES

TAKING ACTION ON OVERUSE

Early Critical Steps

- **Introduced the concept of high-value care** to leadership, providers, and staff through conversations, meetings, etc.
- **Identified and engaged stakeholders through networking.** Identified barriers to change, encountered previously unknown resources and sources of support in the system, and increased buy-in from leadership.
- **Obtained access to data and IRB approval.**

HEALTH SCIENCES

TAKING ACTION ON OVERUSE

Intervention Strategies

Shared Purpose. Partnerships include:

1. A research team working to decrease lower extremity amputations;
2. Nurse-led foot and nail care clinic;
3. A hospital QI initiative to decrease C. difficile testing overuse;
4. Nursing excellence ambassador program within the hospital;
5. Antimicrobial Stewardship team to decrease antibiotic overuse in multiple hospital settings.

Prioritize the Work. Requested and obtained protected project time and seeking grant funding.

A culture of trust, innovation and improvement.

- Engaged 8 other inter-disciplinary team members as clinical champions.
- Collaborated with:
  - 7 of 10 primary care clinics;
  - 14 of 26 hospital departments impacted by interventions.

UNM HEALTH SCIENCES

TAKING ACTION ON OVERUSE

Key Lessons Learned

- **Access to high-value care experts and mentors** increased understanding and examples about creating new culture.
- **The Taking Action Framework was useful** as a guide to become a more effective change agent.
- **Cultivating new relationships** in local setting expanded potential impact as a clinical champion.

Next Steps

- Use access to data to **develop antibiogram for lower extremity diabetic foot wounds**.
- **Develop and implement evidence-based treatment guidelines** including computerized decision-support, a quick guide badge card for providers, and booklets posted in each unit.
- **Provide additional education and training opportunities** for all providers and staff, both online and classroom-based.
- **Seek grant funding** to establish RN-led foot care clinics.
- **Work with medical school** to expand high-value care concepts into the curriculum.

UNM HEALTH SCIENCES

TAKING ACTION ON OVERUSE

PICCing Wisely: Optimizing Vascular Access

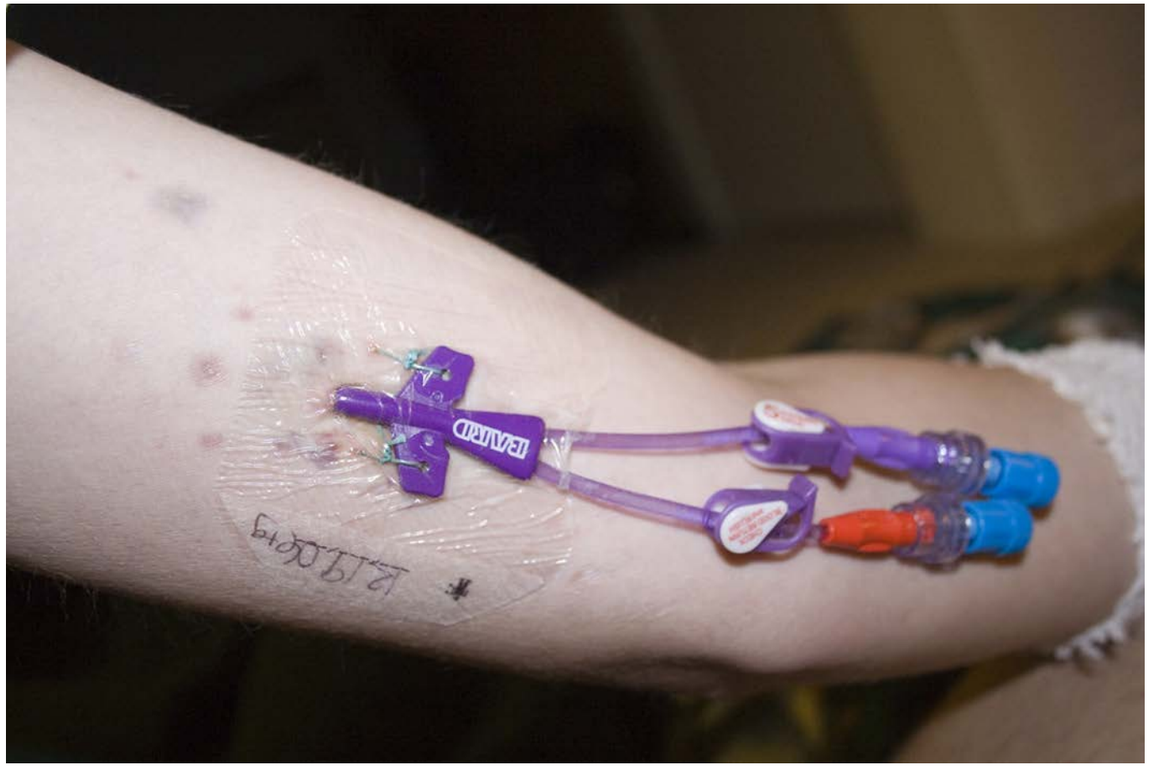
George Hoke
University of Virginia Medical Center | Charlottesville, VA

UNIVERSITY of VIRGINIA HEALTH SYSTEM

TAKING ACTION ON OVERUSE

Overused Service & Rationale

- Peripherally inserted central catheters (PICCs) are **commonly used for long-term administration of antibiotics, chemotherapy and parenteral nutrition.**
- PICC use can result in harm by **increasing the risk of deep venous thrombosis (DVT) and blood stream infections.**
- We aimed to reduce the overall use of PICCs and to insert the smallest catheter with the fewest lumens needed by the patient.



UNIVERSITY of VIRGINIA HEALTH SYSTEM

TAKING ACTION ON OVERUSE

Setting

University of Virginia Health (UVA Health) consists of a 600-bed acute care hospital, a 40-bed LTACH, and outpatient clinics across central Virginia.

Geographic service area is very large and predominantly rural.

26% of visits involve uninsured or Medicaid-covered patients

University of Virginia Health System

TAKING ACTION ON OVERUSE

Early Critical Steps

- **Obtain Institutional Support** by aligning project closely with health system's established improvement priorities.

- **Conduct a detailed stakeholder analysis.** Qualitative interviews with individuals across the continuum of care revealed:
  - Lack of training and expertise in selection of venous access devices.
  - The important role of nurses, who often requested PICC for ease and patient comfort, to avoid frequent blood collection for labs.

- **Survey of intended target audience** to assess knowledge and attitudes about venous access selection.

University of Virginia Health System

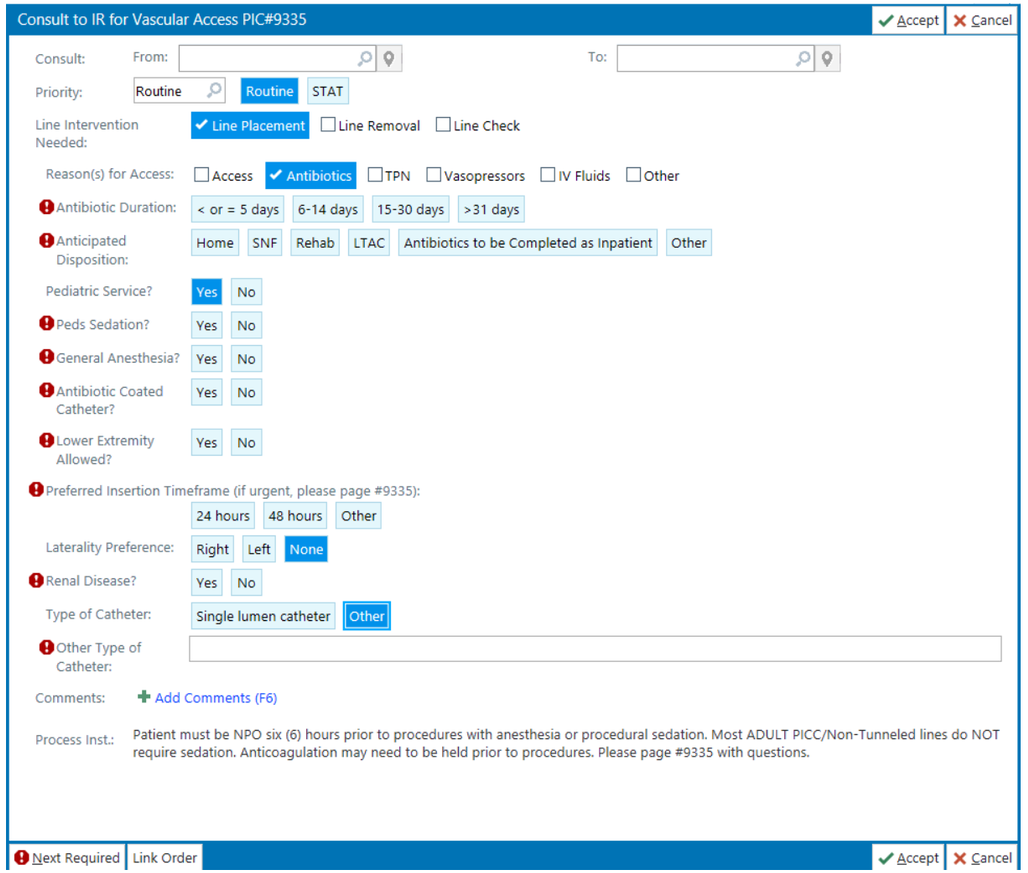
TAKING ACTION ON OVERUSE

Intervention Strategies

Brief, in-person educational sessions with all house staff and hospitalists.

Replaced EMR pathway for requesting a venous access device with an order for a consultation.

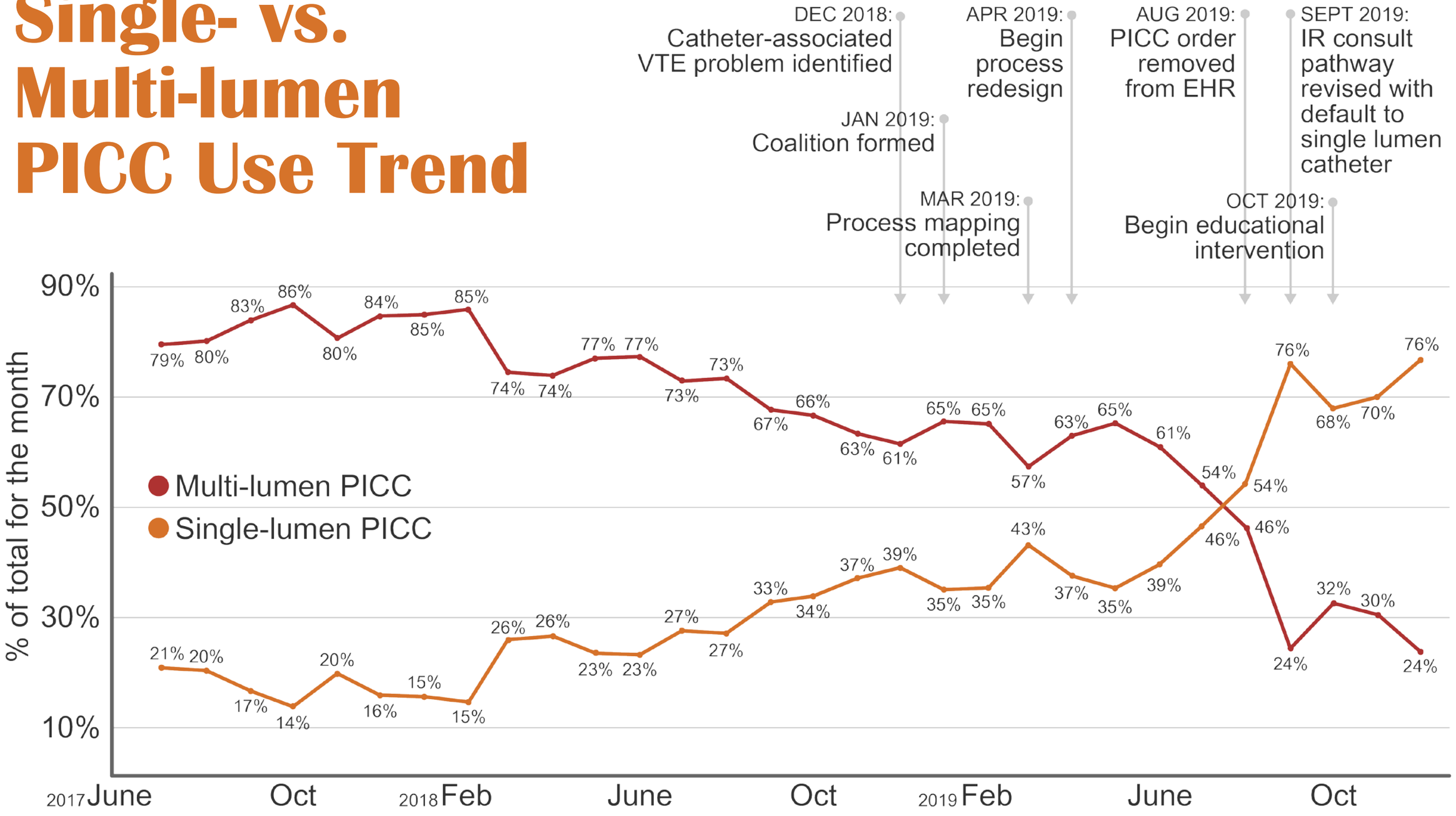
Made ‘single lumen catheter’ the default line type when PICC requested in the order set as it has lower rate of DVT than multi-lumen catheters.



UNIVERSITY of VIRGINIA HEALTH SYSTEM

TAKING ACTION ON OVERUSE

Single- vs. Multi-lumen PICC Use Trend



Findings

- Increase in use of single lumen catheters

39% ➡ **73%**

- Average monthly number of PICC lines inserted went from 126 to 93, a 26% reduction.
- Nonsignificant decrease in number of venous thrombo-embolic events thus far.

University of Virginia Health System

TAKING ACTION ON OVERUSE

Key Lessons Learned

- **Stakeholder analysis and a project charter** pay dividends during implementation phase.
- **Avoid rework and mistakes** by keeping a journal and documenting process mapping exercises.
- **Ensure stakeholder buy-in** before implementing any changes to their workflow.
- **Don’t let perfect be the enemy of better** as simple interventions may achieve much of the desired change with less work and disruption.

Next Steps

- Share provider-specific ordering data with peer comparison.
- Offer placement of mid-line catheters as a replacement strategy.
- Revise patient education materials regarding risks associated with PICC line.
- Ensure a plan for PICC removal after hospital discharge.
- Engage with specialty groups such as oncology and cystic fibrosis teams.
- Collaborate with antibiotic stewardship team on shortening duration of IV antibiotic treatment to decrease the demand/need for PICC lines.

Unnecessary Use of Over-the-Counter Medicine for Coughs & Colds in Children

Elizabeth Vossenkemper
Tri-Cities Community Health | Pasco, WA

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE

Overused Service & Rationale

- Prescribing over-the-counter medications for upper respiratory infections in children 0 – 13 years of age has more potential for harm than benefit.
- **Goal:** Be a positive catalyst to:
  1. Ensure high-value, evidence-based care; and
  2. Create an opportunity for providers, staff and patients to work as a cohesive team to prevent potential harm to our pediatric population.

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE

Setting

Tri-Cities Community Health (TCCH) a Federally Qualified Health Center in Eastern Washington.

Patients are predominantly Hispanic. Most are migrant farmworkers with low health literacy and limited socioeconomic resources.

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE

Early Critical Steps

- **Establish the extent of the problem** by collecting data through EHR, identifying inappropriate prescribing for viral URI.
- **Identify and engage key stakeholders** by sharing data on overuse, and developing an action plan with input from prescribers, pharmacy, nurses, frontline staff, parents and leadership.
- **Create resources.** Gather input from multiple departments and create a "URI Symptom Kit" for use instead of OTC medications.

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE

Strategies

- **Assessment of parent and guardian beliefs:**

  Early focus groups were useful to understand the interests and motivations of parents and guardians. Their feedback was useful in clinician engagement to address parent and guardian concerns and resistance.

- **URI Symptom Kit:**

  Offered at no cost to patients. The kit included patient education materials. Nursing staff and medical assistants were educated to provide parent teaching on how to use the kit, as well as how to support prescribers in implementation.

- **Provider education and support:**

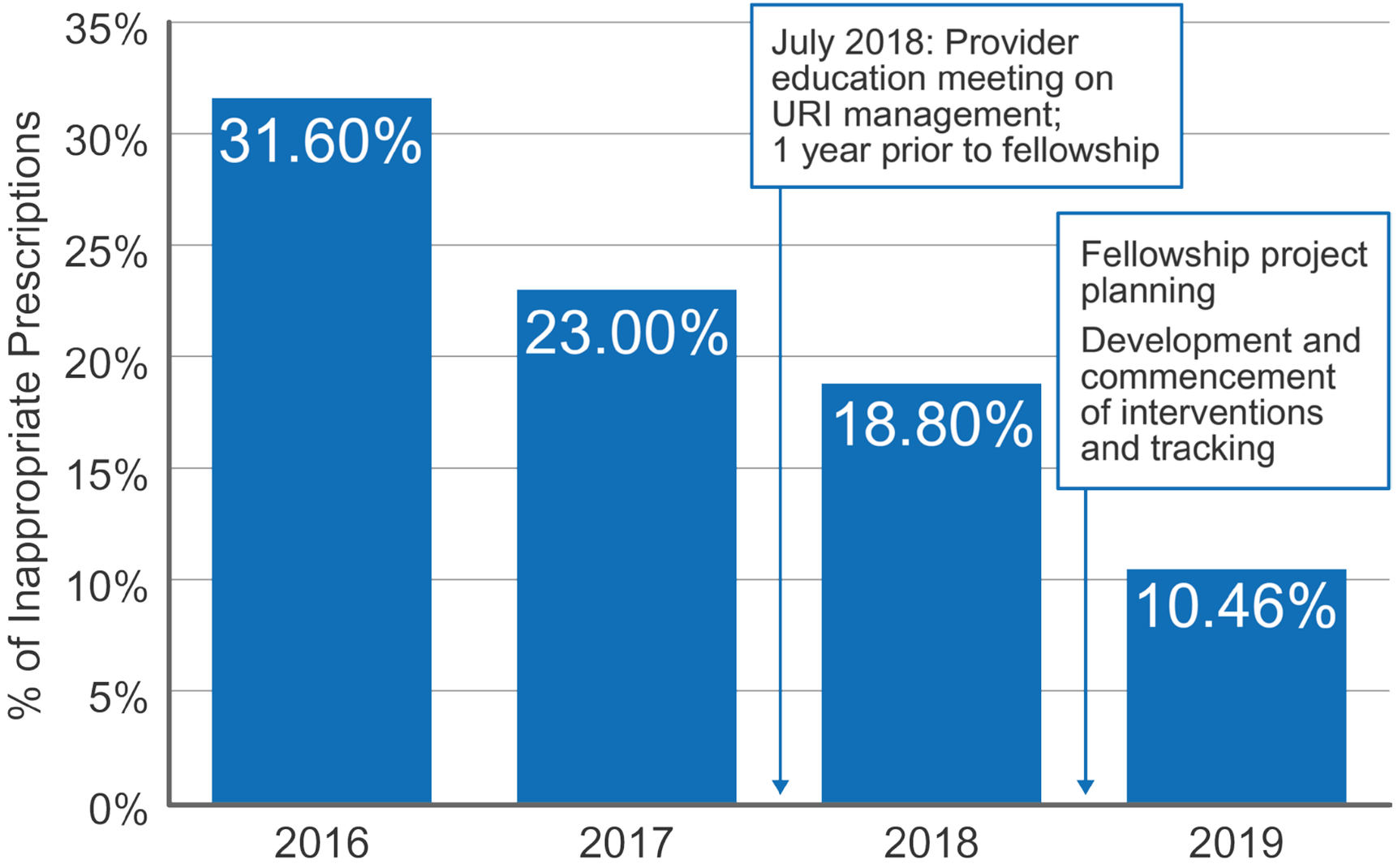
  Formal educational meetings to share data on current and past prescribing practices. Provided scripts for providers on how to talk to parents. Created a space for providers to discuss frustrations, concerns, and observations.

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE

Findings

Inappropriate Prescriptions for URI Visits, Birth-13 years, All Specialties



Key Lessons Learned

- **Identify clinician motivators to de-implement.** Being a clinical champion involves an immense amount of psychology.
- **Focus education and training on front-line staff** who are often tasked with patient education.
- **Collecting qualitative data is as important as quantitative data** because it speaks to the clinician and patient experience, as well as drivers of overuse.

Next Steps

- **Maintain the Gains:**
  - URI Symptom Kit handed off to pharmacy/purchasing department.
  - QI team at TCCH will pull OTC prescribing data quarterly to identify if a resurgence of inappropriate prescribing occurs.
- **QI Publication** of the project.
- Plans are in place for **discussions about future high-value care projects** within different departments.
- **Empower other providers** in these departments to take responsibility for ongoing implementation.

TRI-CITIES COMMUNITY HEALTH

TAKING ACTION ON OVERUSE