Best Practices in Cancer Screening and Early Detection Across Cancer Types and Across Healthcare Systems

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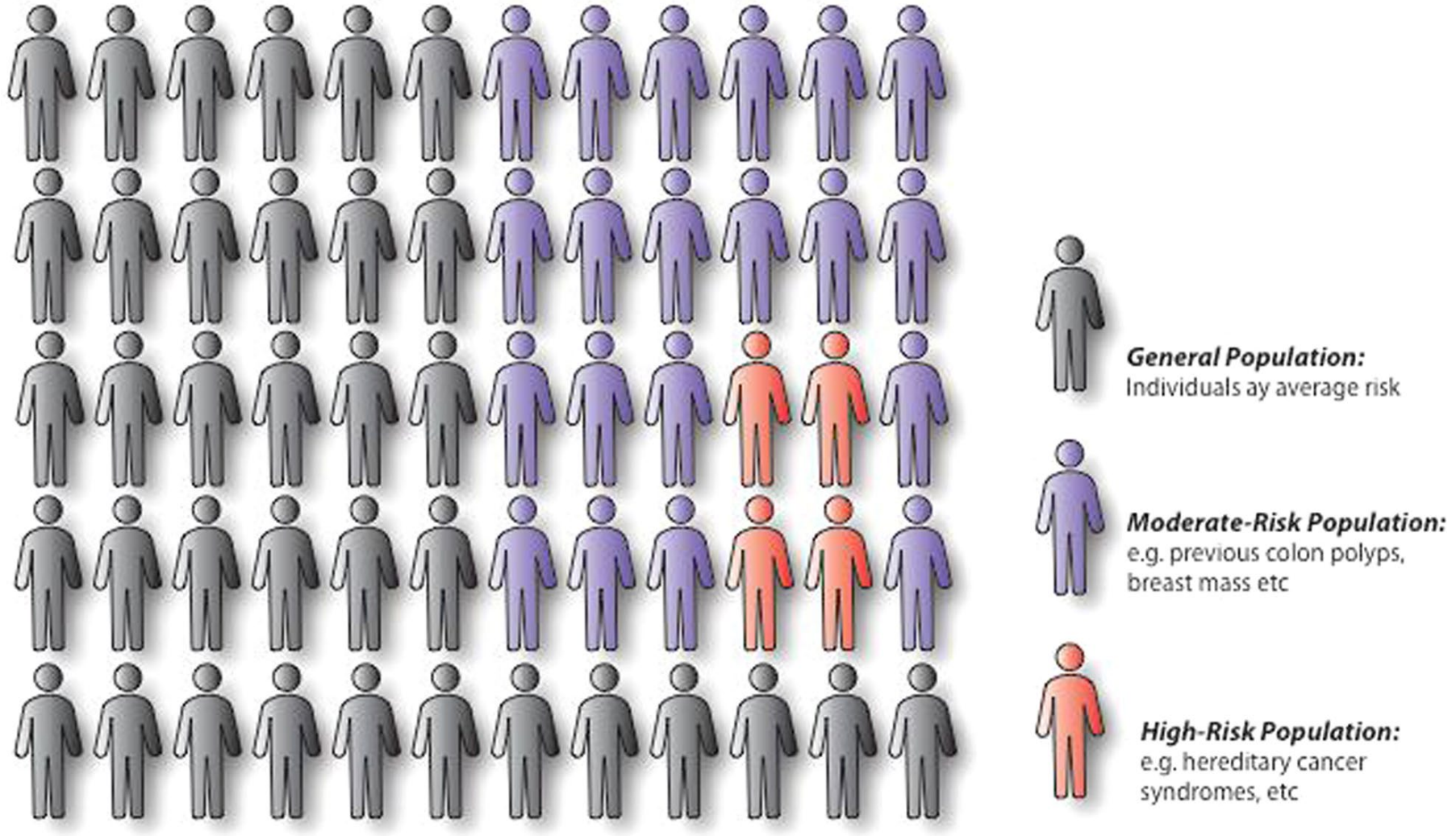
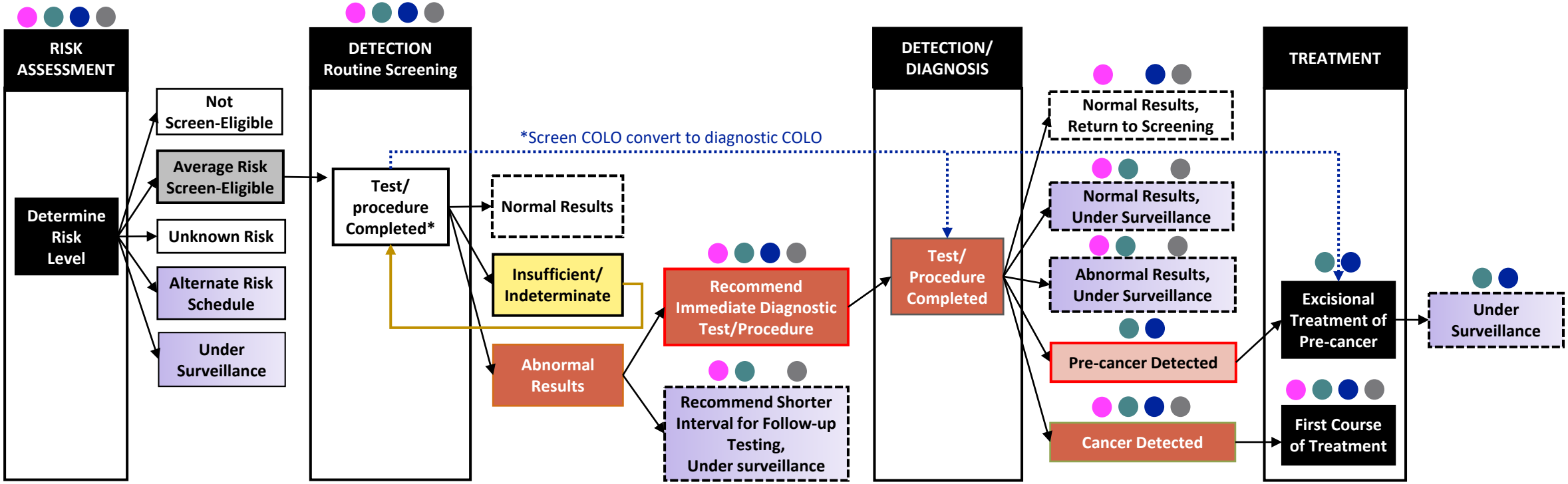
Implications of Precision Cancer Screening on Diagnostic Evaluation



Loomans-Kropp & Umar, npj Precision Oncology, 2019.

PROSPR Consortium's Screening Process Model highlights transition to surveillance...



- Breast (pink)
- Cervical (teal)
- Colorectal (dark blue)
- Lung (pearl)

Normal screen completed

Abnormal screen completed, under surveillance

Abnormal screen + diagnostic completed, under surveillance

Abnormal screen + diagnostic + pre-excisional treatment completed, under surveillance

May also end as incomplete

*** Organ-specific screening modalities—**

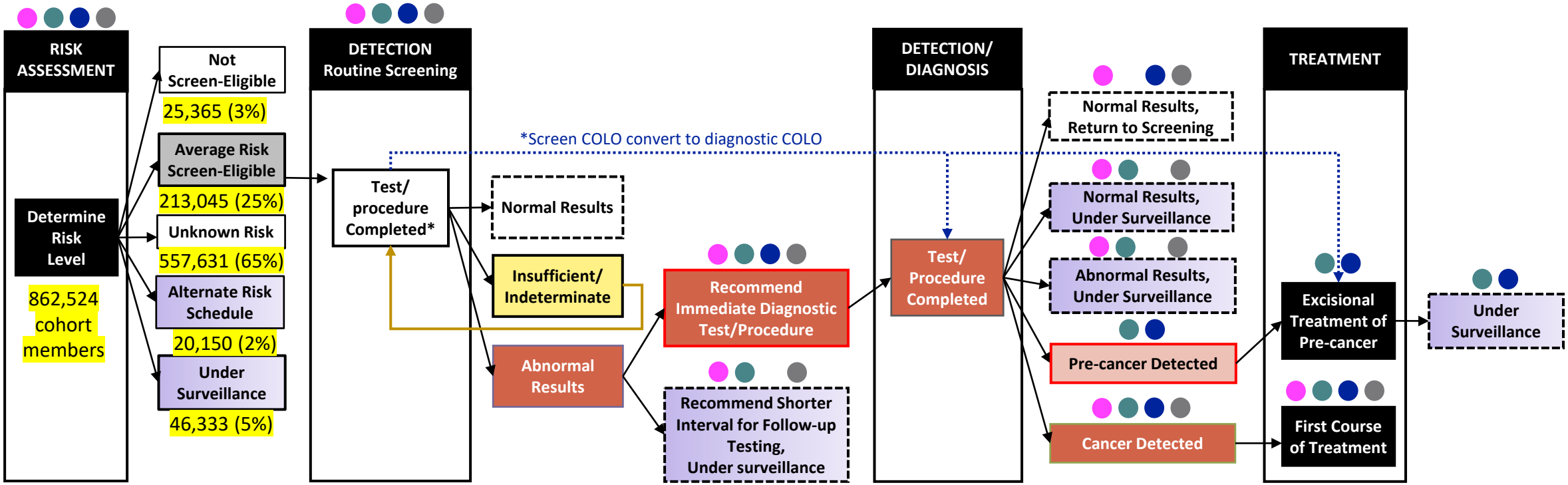
Breast: Mammogram

Cervical: Pap or Pap/HPV (co-test)

Colorectal: gFOBT/FIT/FIT DNA, sigmoidoscopy, colonoscopy

Lung: Low Dose CT

PROSPR Consortium data documents the challenges in assessing risk



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17,693 (4%) shift to surveillance → 64,026 total

May also end as incomplete

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Challenge of Managing Abnormal Cervical Screening Results

Vignette:

37 year old woman who had a colposcopy/biopsy confirmed LSIL in the past 3 years. Current co-test found NILM cytology and HPV 16/18 positive.

Provider recommended an immediate colposcopy. Patient did not show up for her appointment.

6 months later, still no follow-up. **Why?**

Vignette:

28 year old woman with a NILM/HPV positive co-test 3 years ago. Current screen found LSIL, HPV not done.

Provider recommended co-test in 1 year. Co-test was never scheduled.

Why?

Differences in time-to-colposcopy after high-grade abnormal screen by PROSPR site (N=4,311) – Problem tracking referrals

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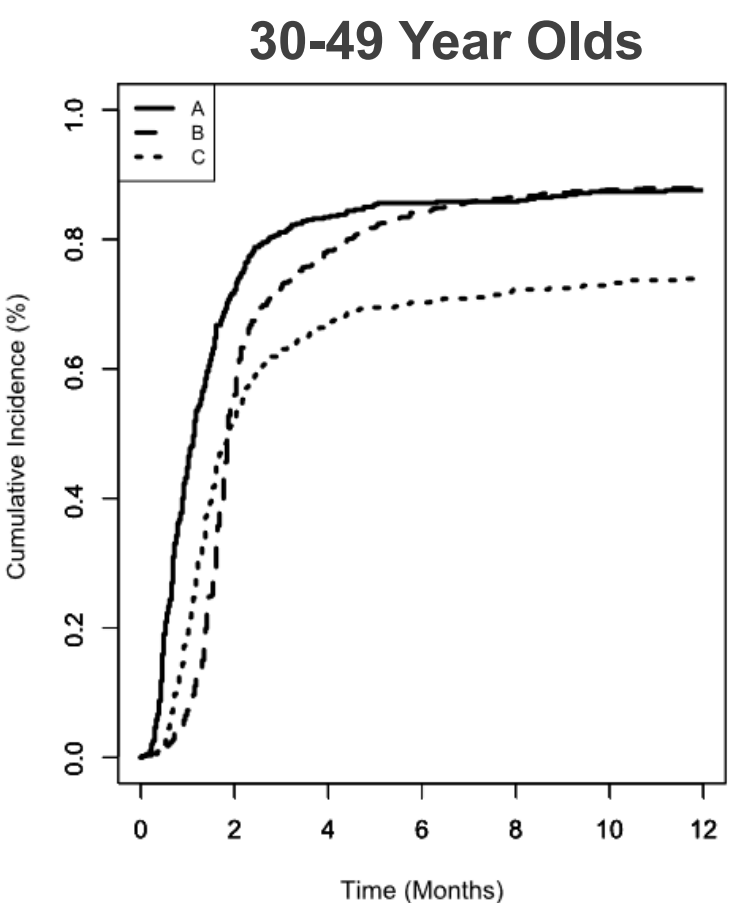

High-Grade Abnormal includes HSIL, AGC, ASC-H, & suspicious for cancer (regardless of HPV test result)

Representative quotes:

Where they fall through is actually once the referral is made… it's the specialist's responsibility to reach out and schedule that appointment. And then if they're unable to do so, then the referral gets returned to the primary care's office after three attempts to close the loop and follow up… sometimes, there's a misunderstanding and they reach out and cancel the referral… they felt the referral actually was incorrect or wasn't needed... And so we may not catch that until a few months later." - UT PCP (Int 11)

"Let's say [patients] make an appointment and then cancel it... the ones who say, "I'm not coming and I don't want to reschedule," we don't have a track for that. They get eliminated from some list, and we don't have a [tracking] system. So we do lose follow-up that way."
- MGB Int Med 12

Interview data: Patients do not understand reason for & importance of referral

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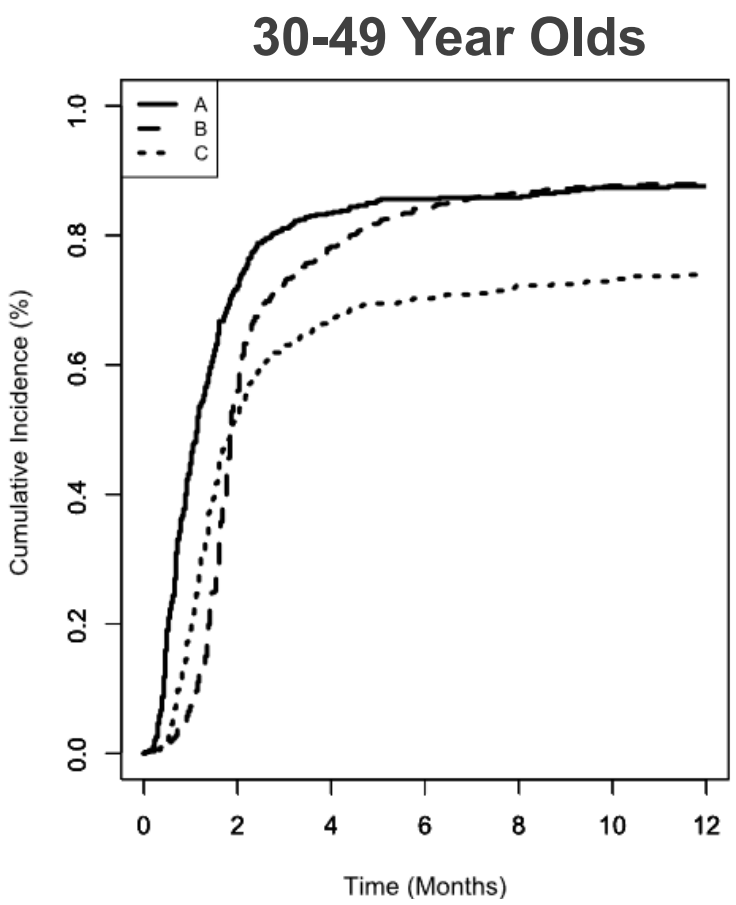

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Representative quotes:

"Most of the time the patient doesn't understand why she's being referred. It is a gap of information from the PCP or the clinic to the patient. Sometimes we have patients calling us very upset, like why they have to have this appointment if they already had a Pap smear. [I tell them:] 'This is not just a [Pap]. This is GYN Oncology. And you're being referred because A, B, and C.' [And they say:] 'Oh, nobody told me that.'… a lot of patients skip appointments because they don't have that clinical information between one clinic to another." - MGB Int 20

"People have chaotic lives, a lot going on, poverty, insurance that changes constantly." - KP Int 17

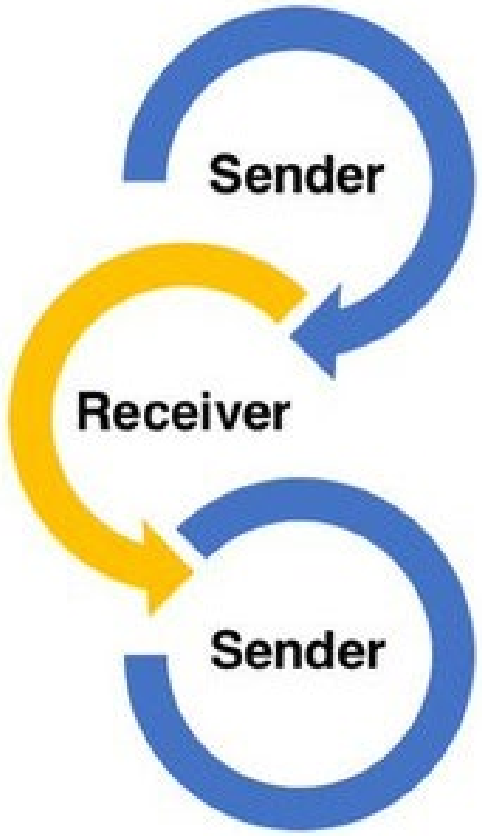
Best Practice: Patient-Centered, Closed Loop Communication

Execution of diagnostic care steps:

- Screening result reporting
- Referral & scheduling
- Diagnostic Result reporting

Multiple communication exchanges are needed among 4 groups:

- Patient
- Performing provider/ team
- Specialty provider/ team
- Lab



Sender initiates a message
- Using name if possible

Receiver acknowledges the message
- By paraphrasing (repeating the main part of the message)

Sender verifies the message

Cannot implement automated, health IT solutions when teams do not share clinical information systems and results are not in structured fields

Differences in time-to-colposcopy by age

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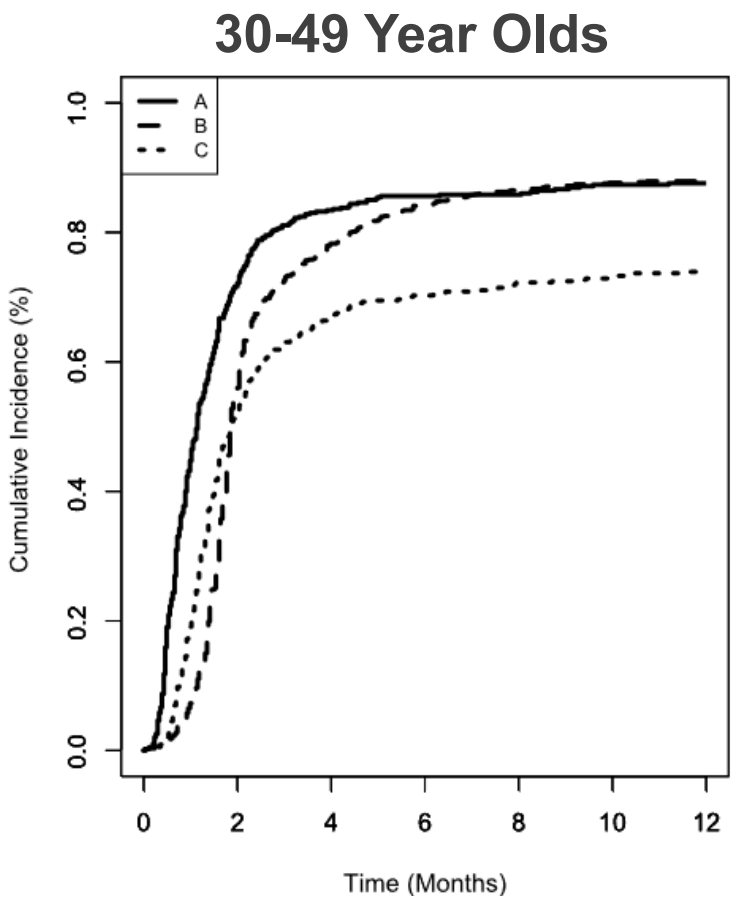

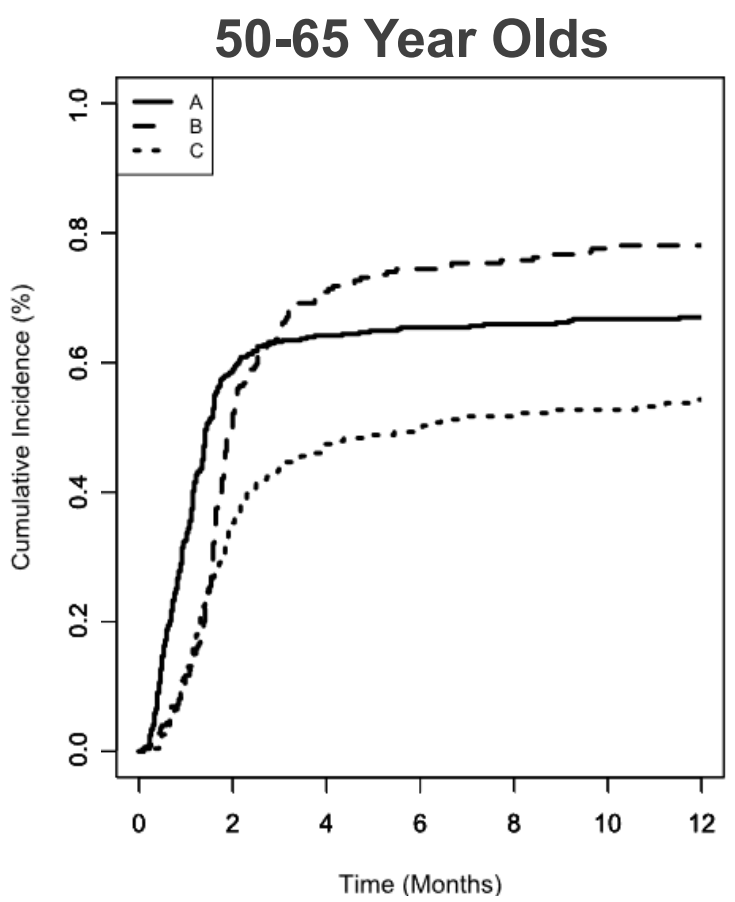

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Best Practice: Calculate Timeliness Quality Metrics for each Cancer Type

Metric	Breast	Cervical	Colorectal	Lung
Proportion of those with a positive screening test/procedure who received follow-up within a defined time period[e] (Timeliness Metric #3)	Proportion of females screened within the measurement year with a BI-RADS 3 finding who receive short interval follow-up mammograms or DBTs within a defined time period Proportion of screened females with a BI-RADS 4A, 4B, or 4C finding who receive a tissue sampling procedure within a defined time period Proportion of screened females with a BI-RADS 5 finding who receive a tissue sampling procedure within a defined time period	Proportion of females screened within the measurement year with an abnormal Pap and/or positive HPV test who receive a co-test, colposcopy, or cervical biopsy within a defined time period per the ASCCP Risk-Based Management Consensus Guidelines	Proportion of individuals screened within the measurement year with an abnormal FIT, gFOBT, stool DNA test, sigmoidoscopy, or CT colonography who receive a diagnostic colonoscopy within a defined time period	Proportion of individuals screened within the measurement year with a Lung-RADS 3 finding who receive an LDCT at 6 months Proportion of individuals screened within the measurement year with a Lung-RADS 4A finding who receive an LDCT at 3 months; PET/CT may be used when there is a ≥8mm solid component Proportion of individuals screened within the measurement year with a Lung-RADS 4B or 4X finding who receive a chest CT with or without contrast, PET/CT, and/or tissue sampling within a defined time period

PROSPR consortium: Beaber et al. Effective, Safe, Timely, Efficient, Equitable, and Patient-centered Cancer Screening Quality Metrics, in progress

Provider survey highlights confusion & lack of confidence

Vignette:

28 year old woman with a NILM/ HPV positive co-test 3 years ago. Current screen found LSIL, HPV not done.

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Why?

646 primary care & OBGYN clinicians chose:

69% Colpo immediately
18% Co-test in 1 year
12% Pap in 1 year

Only 42% reported being very confident in selecting the management plan

Representative quote:

”A lot of times they're just getting another Pap. So the doctor comes, the doctor does not know the management guidelines, so the patient has an abnormal Pap, and rather than sending her for a colpo, for whatever reason [the doctor] just repeats the Pap. So the patients get something, but it's the wrong something.” - MGB Int 12

Poor follow-up over multiple rounds

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Why?

We monitored 7,493 women with NILM /HPV positive results over 2 rounds of potential follow-up. During subsequent rounds:

5% progressed to ASC-US or worse cytology
19% NILM/ HPV negative
9% continued NILM/ other HPV positive
56% failed to have a surveillance co-test after 18 months

Only 213 women had 2 consecutive NILM/HPV negative results after 3 years and could be returned to an average risk schedule.

System perspective:

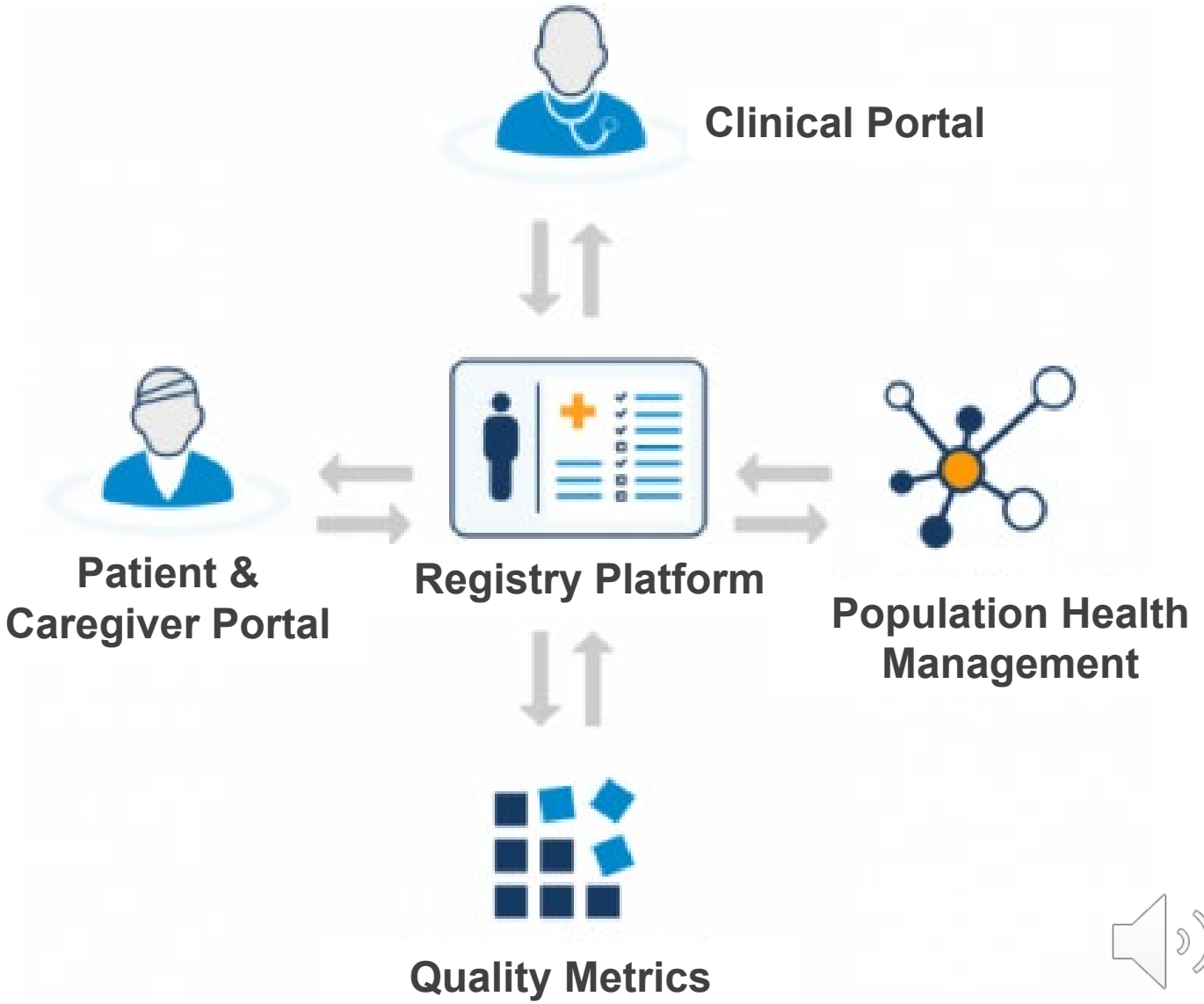
If schedules are not open 1 year in advance, staff have to re-contact and schedule these patients.

Best Practice: Surveillance Registries & Population Health Management Teams

- Provide decision support for clinicians given complex guidelines and ease their workload
- Enable outreach to patients for scheduling and dissemination of clear, understandable information about results and recommendations
- Generate metrics to monitor quality

NEED

Stakeholder buy-in and resources



Resources limited in safety-net health care settings: inconsistent availability public payor program by cancer type, Texas

Public Program	Organ site			
	Breast	Cervical	Colorectal	Lung
Medicaid	TX did **not** expand***			
Family Planning block grants (Title V, X, XX)	X	Screening only	X	X
National Breast & Cervical Early Detection Program	Covers screening & diagnostic services		X	X
Cancer Prevention & Research Institute of TX	Screening & diagnostic services available for subset of TX counties with CPRIT grant recipient			
County tax-supported medical assistance	Only for Dallas (Parkland), Tarrant (JPS)			

***Presumptive Medicaid coverage for breast & cervical cancer treatment if initial screen by NBCCEDP.

Questions?