HOW TO BUILD AN EARLY LUNG CANCER DETECTION PROGRAM

Vickie J. Beckler, MBA, RN

DISCLOSURE

I am currently an employee of AstraZeneca; however, the presentation and opinions expressed today are solely mine and do not represent my current or any past employer.

The LungAmbition Alliance

AstraZeneca

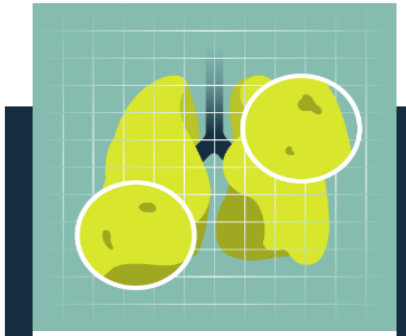
GUARDANT

IASLC

LOBAL LUNG CANCER COALITION

Our ambition

Eliminate lung cancer as a cause of death



Increase screening and early diagnosis

Deliver innovative medicine

Improve quality care

Our Priorities

LEARN FROM MY EXPERIENCE…

Taking short cuts or missing a step has consequences

THE RIGHT STEPS
REALLY DO MATTER!

PROGRAM TRANSFORMATION JOURNEY

Phase 1	Phase 2	Phase 3	Phase 4
Discovery & Needs Assessment	Planning	Execution & Implementation	Optimization

MY 10 STEPS

Step 1	Step 2	Step 3	Step 4	Step 5
Identifying Program Champion	Determine Program Infrastructure	Resource Assignment	Barriers Assessment	Advocacy & State Coalition Engagement

Step 6	Step 7	Step 8	Step 9	Step 10
Program Model	Workflow Protocol & Clinical Pathways	Tools & Outreach Planning	Roll-out Plan	Assess, optimize, scale

PROGRAM TRANSFORMATION JOURNEY

Phase 1 | Discovery & Needs Assessment
Phase 2 | Planning
Phase 3 | Execution & Implementation
Phase 4 | Optimization & Support

Step 1	Step 2	Step 3	Step 4	Step 5
Program Champion	Program Infrastructure	Resource Assignment	Barriers Assessment	Advocacy & State Coalition Engagement

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Program Model	Workflow Protocol & Clinical Pathways	Tools & Outreach Planning	Roll-out Plan	Assess, optimize, scale

FAILING TO PLAN

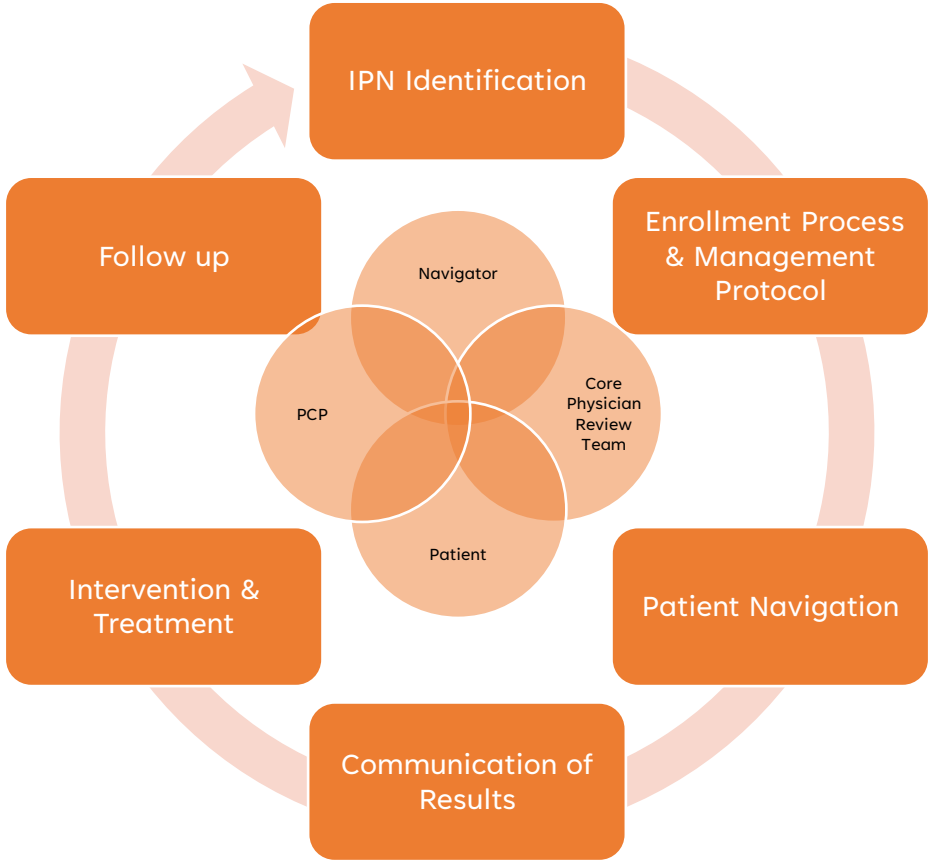
=

PLANNING TO FAIL

LCS VERSES IPN PROGRAM

- Screening is complex with many touchpoints

- Incidental less complex



Where do I start?

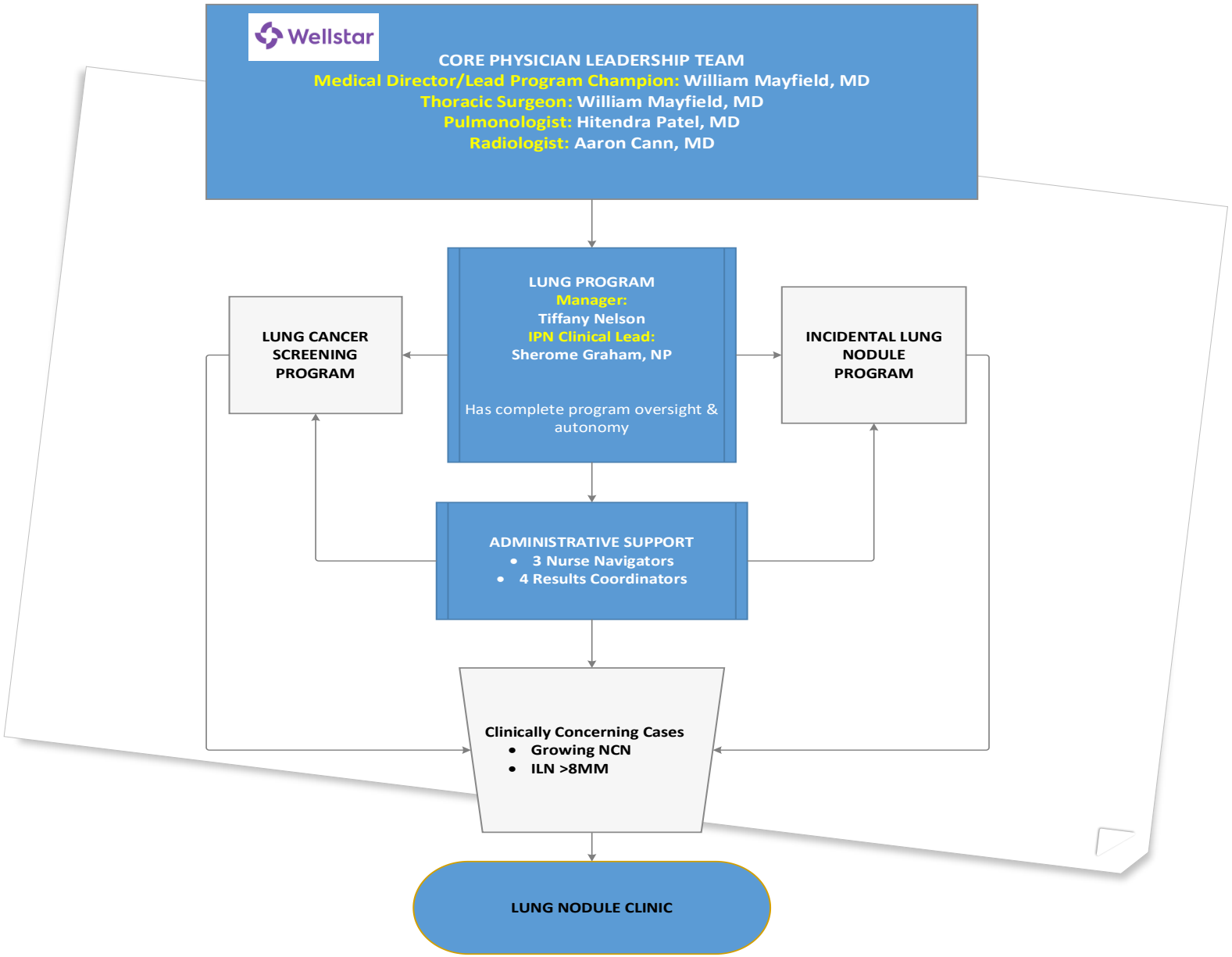
STEP 1

- ❑ Identify physician champion

STEP 2

- ❑ Determine Program Infrastructure

- ✓ Map out organizational chart
- ✓ Develop a formal program charter with roles, responsibilities, program autonomy
- ✓ Consider SWOT or SBAR analysis
- ✓ Write job descriptions
- ✓ Form Implementation workgroup:
  - Clinical stakeholders
    - Lead Physician Champion
    - Program Navigator
    - Radiologist
    - Pulmonologist
    - Thoracic Surgeon
    - Primary Care
  - Administrative leader
  - Compliance & Legal
  - Radiology
  - Marketing
  - Physician Relations
  - Registration
  - Scheduling
  - Revenue Integrity/Billing/Coding



STEP 3

- ❑ Resource Assignment

- ✓ Identify program lead
- ✓ Plan and assign staffing resources

STEP 4

- ❑ Barriers Assessment

- ✓ Identify internal and external barriers
- ✓ Develop mitigation strategy
- ✓ Build your program around your findings

STEP 5

- ❑ Advocacy & State Coalition Engagement

- ✓ Indigent care
- ✓ ROI calculators
- ✓ Start up resources
- ✓ State cancer goals

STEP 6

- ❑ Program Model

- ✓ Determine program model. PCP or Program managed?

Note: If building IPN program, determine filtering criteria

- ❖ Which exams?
- ❖ EMR or software capabilities for search criteria? Can it easily be refined to minimize false positives & undesired cases? (i.e., complex cancer or nodule follow up.)
- ❖ Patient type/departments?
- ❖ Age criteria?
- ❖ Ordering physician?
- ❖ Ordering indication?

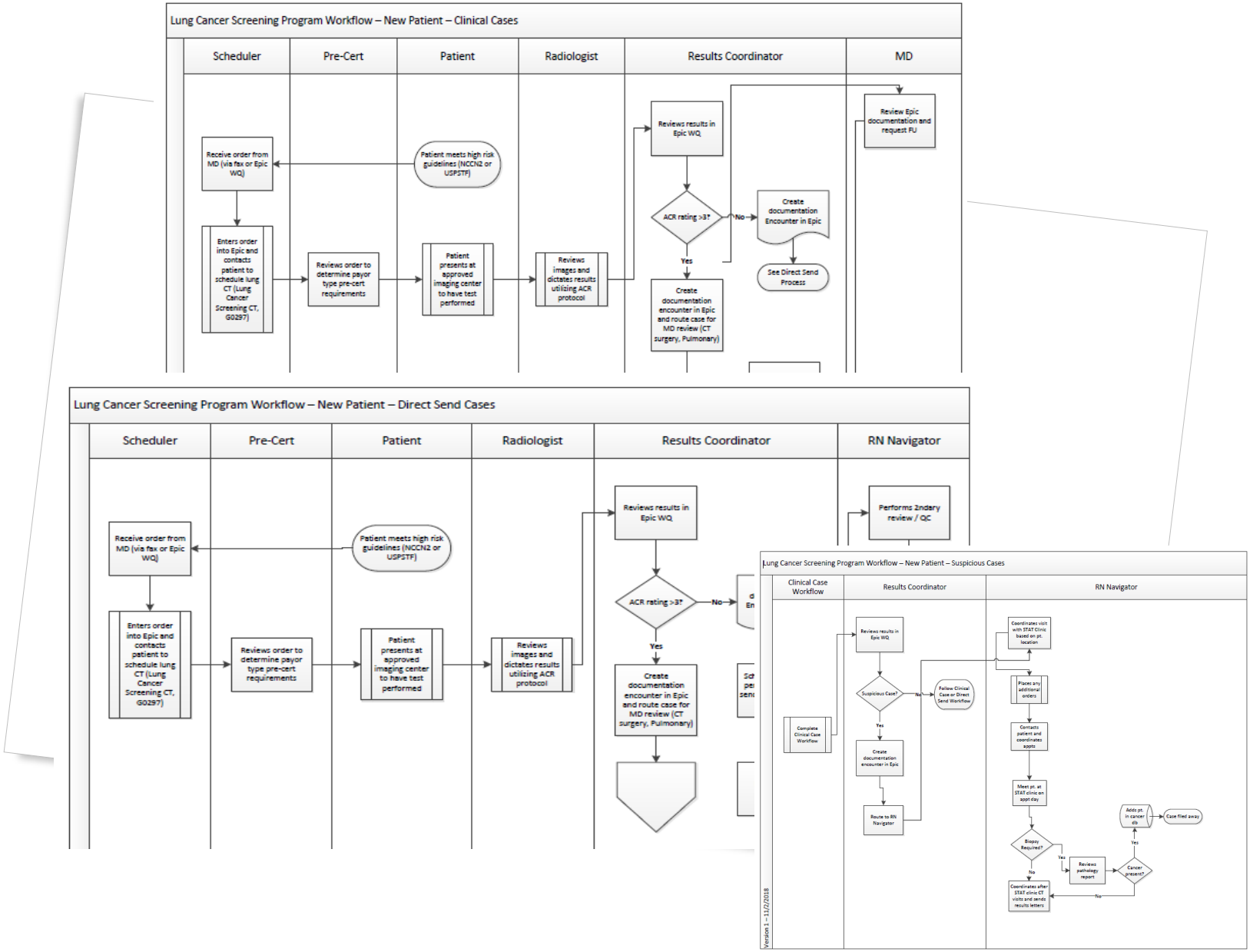
STEP 7

- ❑ Workflow Protocol & Clinical Pathways
- ✓ Develop & map out *Nodule Management & Clinical Workflow Protocol* (Applies to both LCS & IPN)
- ✓ Explore and compare software options for patient management and data tracking

Note: The workflow will differ for IPN program.

- ❖ Must address <6mm NCN for those who don't meet Fleischner criteria. You basically have 6 options.
  1. Do nothing
  2. Manage through program
  3. Manage through clinical trial
  4. Manage though blood assay testing
  5. Defer to PCP but send patient notification
  6. Defer until system has a plan – nothing needed sooner than 12 months anyway

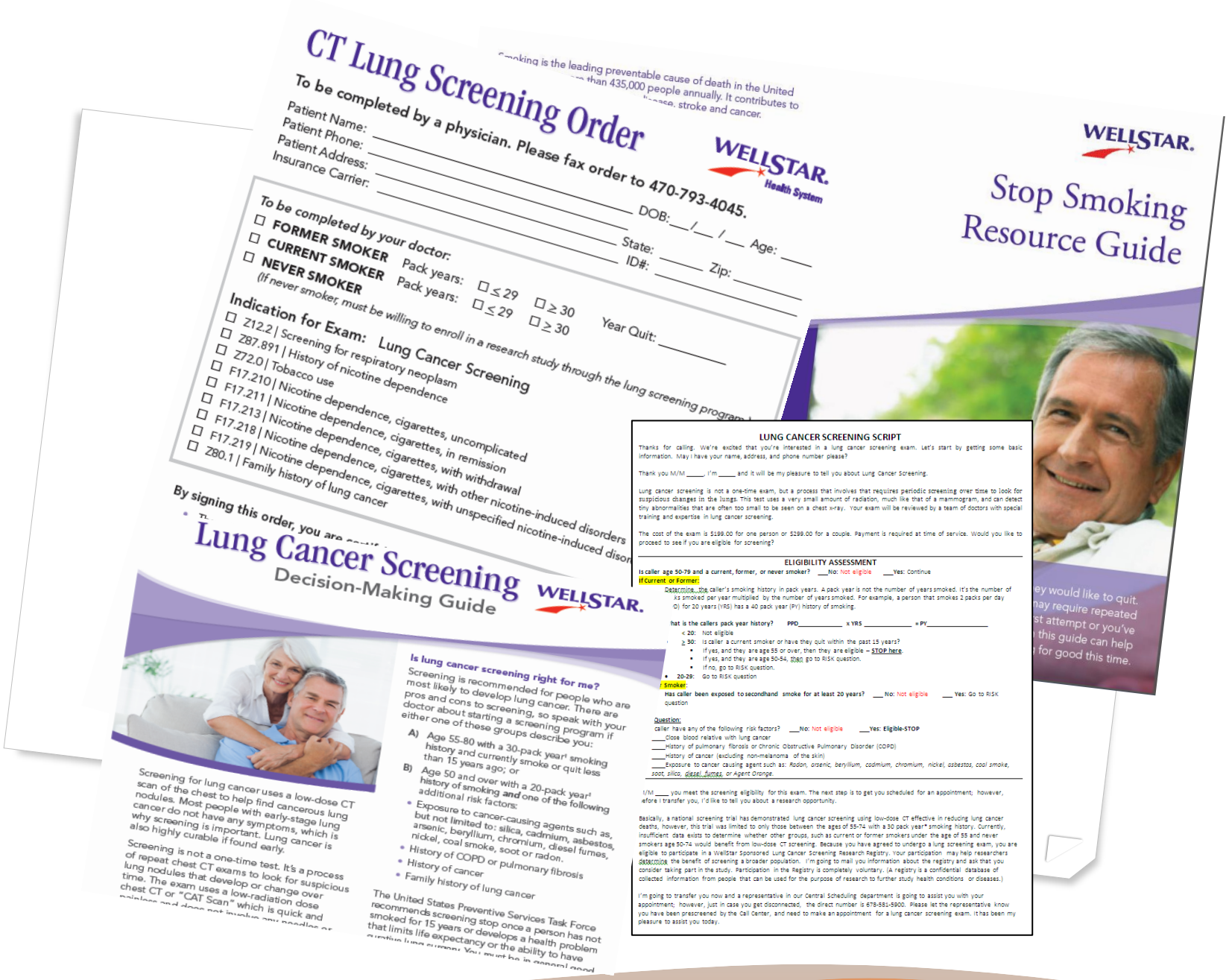
- ❖ Remember these patients are unaware unlike LCS. You will be notifying them retrospectively. Must factor this into the notification process.



STEP 8

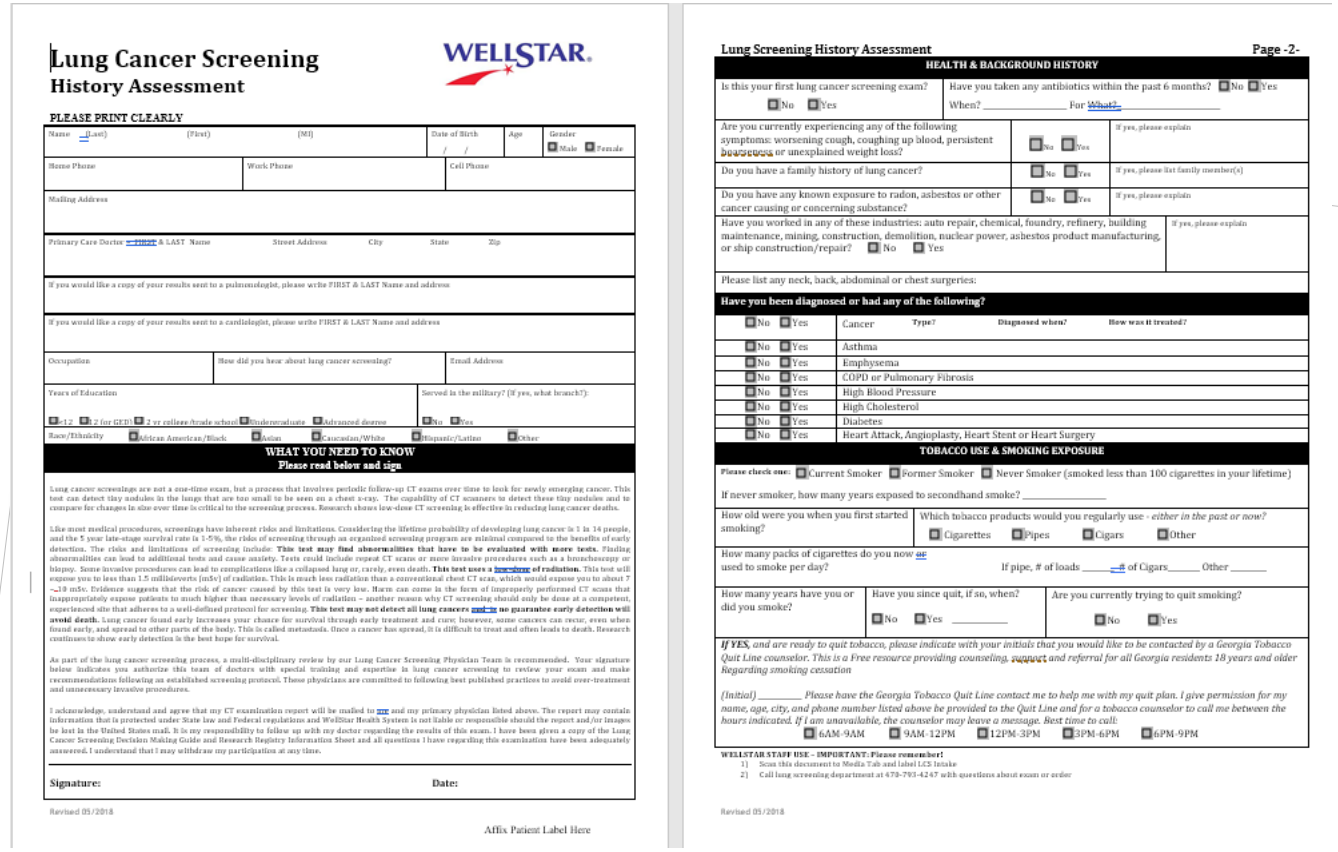
- ❑ Tools & Outreach Planning
- ✓ Develop program support tools, materials, and plans

1) Forms & Documents
   - Notification letters
   - Intake forms
   - Orders/referrals
   - Workflow process/algorithm
   - Dictation template
   - Schedule call script
   - Program Charter
2) Smoking Cessation Integration Plan
3) Marketing & Community Outreach
   - Collateral Materials
   - Marketing & Outreach Plan
   - Physician & community Education
4) ACR Registry & COE Screening Designation Application
5) Finalize plan for software or patient management and data tracking tools



SCREENING INTAKE FORMS

Addresses Research Registry, smoking cessation, and serves as consent to multi-disciplinary review process



Lung Cancer Screening
History Assessment

WELLSTAR

PLEASE PRINT CLEARLY

Name (Last) (First) (MI) | Date of Birth | Age | Gender ☐ Male ☐ Female

Home Phone | Work Phone | Cell Phone

Mailing Address

Primary Care Doctor — FIRST & LAST Name | Street Address | City | State | Zip

If you would like a copy of your results sent to a pulmonologist, please write FIRST & LAST Name and address

If you would like a copy of your results sent to a cardiologist, please write FIRST & LAST Name and address

Occupation | How did you hear about lung cancer screening? | Email Address

Years of Education | Served in the military? (If yes, what branch?):

☐ <12 ☐ 12 or GED ☐ 2 yr college/trade school ☐ Undergraduate ☐ Advanced degree | ☐ No ☐ Yes

Race/Ethnicity ☐ African American/Black ☐ Asian ☐ Caucasian/White ☐ Hispanic/Latino ☐ Other

WHAT YOU NEED TO KNOW
Please read below and sign

Lung cancer screenings are not a one-time exam, but a process that involves periodic follow-up CT exams over time to look for newly emerging cancer. This test can detect tiny nodules in the lungs that are too small to be seen on a chest x-ray. The capability of CT scanners to detect these tiny nodules and to compare for changes in size over time is critical to the screening process. Research shows low-dose CT screening is effective in reducing lung cancer deaths.

Like most medical procedures, screenings have inherent risks and limitations. Considering the lifetime probability of developing lung cancer is 1 in 14 people, and the 5 year late-stage survival rate is 1-5%, the risks of screening through an organized screening program are minimal compared to the benefits of early detection. The risks and limitations of screening include: **This test may find abnormalities that have to be evaluated with more tests.** Finding abnormalities can lead to additional tests and cause anxiety. Tests could include repeat CT scans or more invasive procedures such as a bronchoscopy or biopsy. Some invasive procedures can lead to complications like a collapsed lung or, rarely, even death. **This test uses a low dose of radiation.** This test will expose you to less than 1.5 millisieverts (mSv) of radiation. This is much less radiation than a conventional chest CT scan, which would expose you to about 7 –10 mSv. Evidence suggests that the risk of cancer caused by this test is very low. Harm can come in the form of improperly performed CT scans that inappropriately expose patients to much higher than necessary levels of radiation – another reason why CT screening should only be done at a competent, experienced site that adheres to a well-defined protocol for screening. **This test may not detect all lung cancers and is no guarantee early detection will avoid death.** Lung cancer found early increases your chance for survival through early treatment and cure; however, some cancers can recur, even when found early, and spread to other parts of the body. This is called metastasis. Once a cancer has spread, it is difficult to treat and often leads to death. Research continues to show early detection is the best hope for survival.

As part of the lung cancer screening process, a multi-disciplinary review by our Lung Cancer Screening Physician Team is recommended. Your signature below indicates you authorize this team of doctors with special training and expertise in lung cancer screening to review your exam and make recommendations following an established screening protocol. These physicians are committed to following best published practices to avoid over-treatment and unnecessary invasive procedures.

I acknowledge, understand and agree that my CT examination report will be mailed to me and my primary physician listed above. The report may contain information that is protected under State law and Federal regulations and WellStar Health System is not liable or responsible should the report and/or images be lost in the United States mail. It is my responsibility to follow up with my doctor regarding the results of this exam. I have been given a copy of the Lung Cancer Screening Decision Making Guide and Research Registry Information Sheet and all questions I have regarding this examination have been adequately answered. I understand that I may withdraw my participation at any time.

Signature: **Date:**

Revised 05/2018

Affix Patient Label Here

Lung Screening History Assessment Page -2-

HEALTH & BACKGROUND HISTORY

Is this your first lung cancer screening exam? ☐ No ☐ Yes | Have you taken any antibiotics within the past 6 months? ☐ No ☐ Yes When? _____ For What? _____

Are you currently experiencing any of the following symptoms: worsening cough, coughing up blood, persistent hoarseness or unexplained weight loss? ☐ No ☐ Yes | If yes, please explain

Do you have a family history of lung cancer? ☐ No ☐ Yes | If yes, please list family member(s)

Do you have any known exposure to radon, asbestos or other cancer causing or concerning substance? ☐ No ☐ Yes | If yes, please explain

Have you worked in any of these industries: auto repair, chemical, foundry, refinery, building maintenance, mining, construction, demolition, nuclear power, asbestos product manufacturing, or ship construction/repair? ☐ No ☐ Yes | If yes, please explain

Please list any neck, back, abdominal or chest surgeries:

Have you been diagnosed or had any of the following?

	Cancer	Type?	Diagnosed when?	How was it treated?
☐ No ☐ Yes				
☐ No ☐ Yes	Asthma			
☐ No ☐ Yes	Emphysema			
☐ No ☐ Yes	COPD or Pulmonary Fibrosis			
☐ No ☐ Yes	High Blood Pressure			
☐ No ☐ Yes	High Cholesterol			
☐ No ☐ Yes	Diabetes			
☐ No ☐ Yes	Heart Attack, Angioplasty, Heart Stent or Heart Surgery			

TOBACCO USE & SMOKING EXPOSURE

Please check one: ☐ Current Smoker ☐ Former Smoker ☐ Never Smoker (smoked less than 100 cigarettes in your lifetime)

If never smoker, how many years exposed to secondhand smoke? _____

How old were you when you first started smoking? | Which tobacco products would you regularly use - *either in the past or now?* ☐ Cigarettes ☐ Pipes ☐ Cigars ☐ Other

How many packs of cigarettes do you now or used to smoke per day? | If pipe, # of loads _____ # of Cigars _____ Other _____

How many years have you or did you smoke? | Have you since quit, if so, when? ☐ No ☐ Yes _____ | Are you currently trying to quit smoking? ☐ No ☐ Yes

If YES, and are ready to quit tobacco, please indicate with your initials that you would like to be contacted by a Georgia Tobacco Quit Line counselor. This is a Free resource providing counseling, support and referral for all Georgia residents 18 years and older Regarding smoking cessation

(Initial) _____ Please have the Georgia Tobacco Quit Line contact me to help me with my quit plan. I give permission for my name, age, city, and phone number listed above be provided to the Quit Line and for a tobacco counselor to call me between the hours indicated. If I am unavailable, the counselor may leave a message. Best time to call:

☐ 6AM-9AM ☐ 9AM-12PM ☐ 12PM-3PM ☐ 3PM-6PM ☐ 6PM-9PM

WELLSTAR STAFF USE - IMPORTANT: Please remember!
1) Scan this document to Media Tab and label LCS Intake
2) Call lung screening department at 678-793-4247 with questions about exam or order

Revised 05/2018

How many years have you or did you smoke? | Have you since quit, if so, when? ☐ No ☐ Yes _____ | Are you currently trying to quit smoking? ☐ No ☐ Yes

If Yes, and are ready to quit tobacco, please indicate with your initials that you would like to be contacted by a Georgia Tobacco Quit Line counselor. This is a free resource providing counseling, support, and referral for all Georgia residents 18 years and older regarding smoking cessation.
(Initial) _____ Please have the Georgia Tobacco Quit Line contact me to help with my quit plan. I give permission for my name, age, city, and phone number listed above to be provided to the Quit Line and for a tobacco counselor to call me between the hours indicated. If I am unavailable, the counselor may leave a message. Best time to call:

☐ 6 AM - 9 AM ☐ 9 AM - 12 PM ☐ 12 PM - 3 PM ☐ 3 PM - 6 PM ☐ 6 PM - 9 PM

First healthcare organization in Georgia!

LUNG CANCER SCREENING RESEARCH REGISTRY & PROTOCOL

To advance research and help broaden screening criteria

Research Registry Information Sheet

Aug 29, 2013
WIRB®

Sponsor: WellStar Health System

Protocol Title: Lung Screening Research Registry

Principal Investigator: Robert Hermann, M.D., F.A.C.P.

Co-Investigators: Vickie J. Beckler, R.N., Aaron Cann, M.D.,Ph.D., William R. Mayfield, M.D., Alan R. Muster, M.D.

Introduction and Purpose

You are being asked to be in a research registry that will collect and securely store data in a confidential cancer screening database because more research is needed to help define and identify risk factors. The information collected will be used to stud

- Cancer trends and outcomes in various at-risk po
- Morphology and progression of lung and heart di
- Benefits of screening various at-risk populations

The National Lung Screening Trial (NLST) was limited or
55-74 with a 30 pack year smoking history or had quit w
of people continue to die each year from lung cancer tha
the population remain at risk and are curr
early detection. Since more
benefit fr

LUNG SCREENING RESEARCH REGISTRY PROTOCOL

Sponsor:
WellStar Health System
c/o Lung Screening Program
522 North Ave
Marietta, Georgia 30060
678-594-4302

Principal Investigator:
Robert Hermann, M.D., F.A.C.S.

Co-Investigators:
Vickie J. Beckler, R.N.
Aaron Cann, M.D., Ph.D.
William R. Mayfield, M.D.
Alan R. Muster, M.D.

Community-Based Multidisciplinary Computed Tomography Screening Program Improves Lung Cancer Survival

Daniel L. Miller, MD, William R. Mayfield, MD, Theresa D. Luu, MD, Gerald A. Helms, MD, Alan R. Muster, MD, Vickie J. Beckler, BSN, and Aaron Cann, MD, PhD

Multidisciplinary Thoracic Oncology Program, WellStar Health System/Mayo Clinic Care Network, Marietta, Georgia

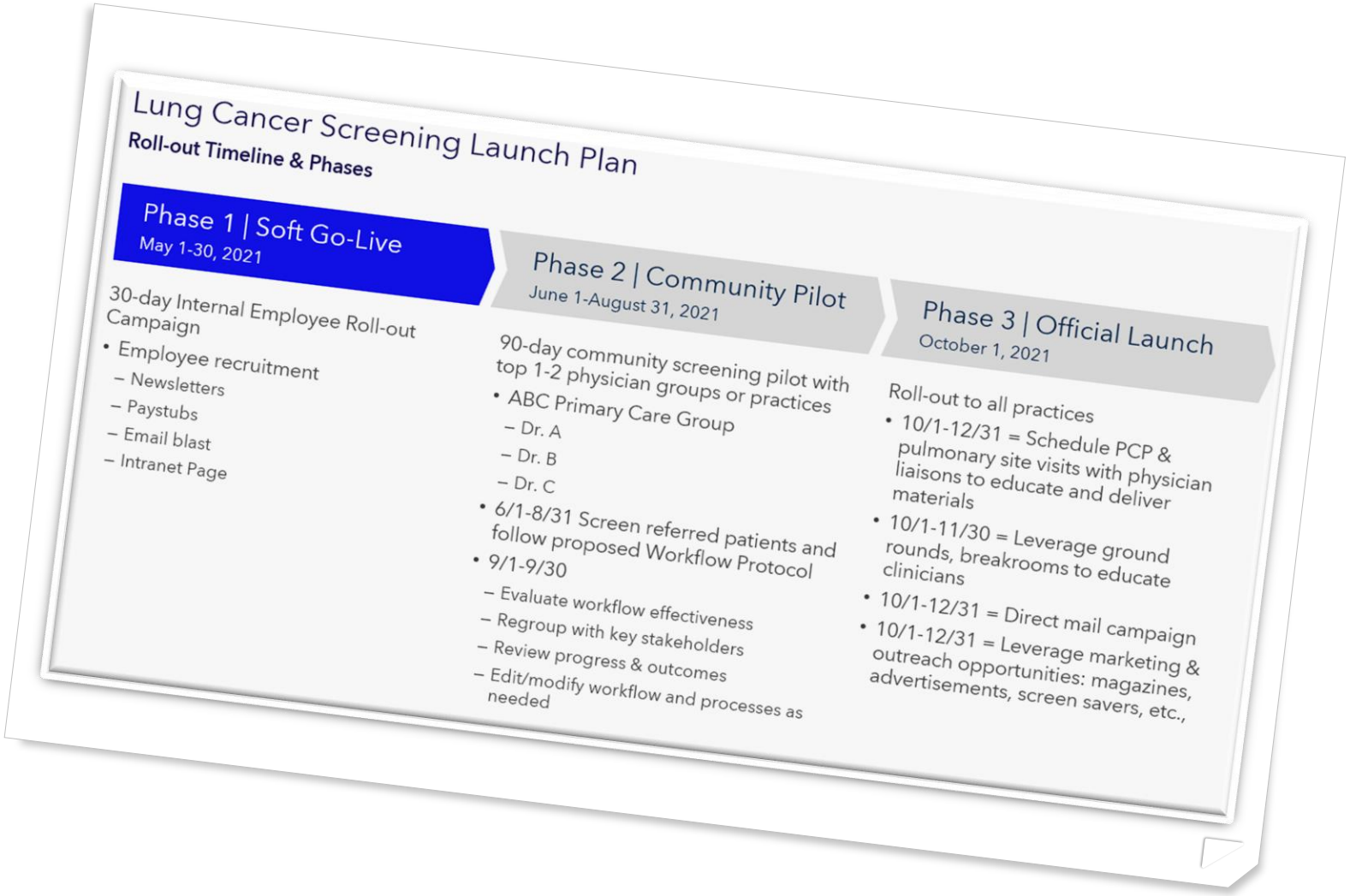
Background. Lung cancer is the most common cause of cancer deaths in the United States. Overall survival is less than 20%, with the majority of patients presenting with advanced disease. The National Lung Screening Trial, performed mainly in academic medical

pulmonary nodules were found in 518 patients (41%). Thirty-six patients (2.8%) underwent a diagnostic procedure for positive findings on their CT scan; 30 proved to have cancer, 28 (2.2%) primary lung cancer and 2 metastatic cancer, and 6 had benign disease. Fourteen

STEP 9

- ❑ Roll-out Plan

- ✓ Develop roll out strategy using a phased approach.
- ✓ With all prior steps complete, launch program using small group as an initial pilot



Go, grow, and win BIG!

STEP 10

- ❑ Assess, Optimize, Scale

- ✓ Upon completion of initial pilot, assess effectiveness, modify or adjust Nodule Management & Clinical Workflow Protocol as needed

COMPONENTS TO SUCCESS

- Growth & sustainability
- The Patient Journey

GROWTH & SUSTAINABILITY

• Obstacles

- Lack of leadership support or engagement of critical stakeholders
- Lack of system funding
- No dedicated navigator or one with no autonomy to lead
- No defined or standardized clinical workflow
- Inefficient and ineffective workflow
- Poor patient management practices
- Poor patient screening adherence
- System deployed siloed screening programs
- Overcomplicate shared decision making (SDM)

• Drivers

- Engagement & Support
  - Support from senior leadership and PCP engagement
  - Dedicated physician review team and champion with program oversight
  - Program navigator with autonomy to lead
  - Screening Triad: Nurse Navigation, MDC Team, COE Designated
- Education
  - Invest time up front building physician & patient relationships
    - Navigator & Champion should be the “Face of Screening”
    - Improves confidence, referrals, and adherence
  - Patients who understand the survival benefit are more inclined to adhere to continued screening
- Effective & efficient service delivery processes
  - Make it **easy** for ordering clinician and patient
  - One Stop approach to screening
    - *One-call, one-time scheduling*
    - *Communicate results & recommendations promptly and directly to both patient and ordering clinician*
    - *Manage nodules through program– helps to minimize overtreatment through protocol adherence*
    - *Program navigate the patient*
    - *Program schedules the follow-up*
    - *Effective patient management platform or software*
    - *Own the process – all touchpoints in-house!*
    - *Implement effective, efficient, AND scalable workflow processes*

THE PATIENT JOURNEY

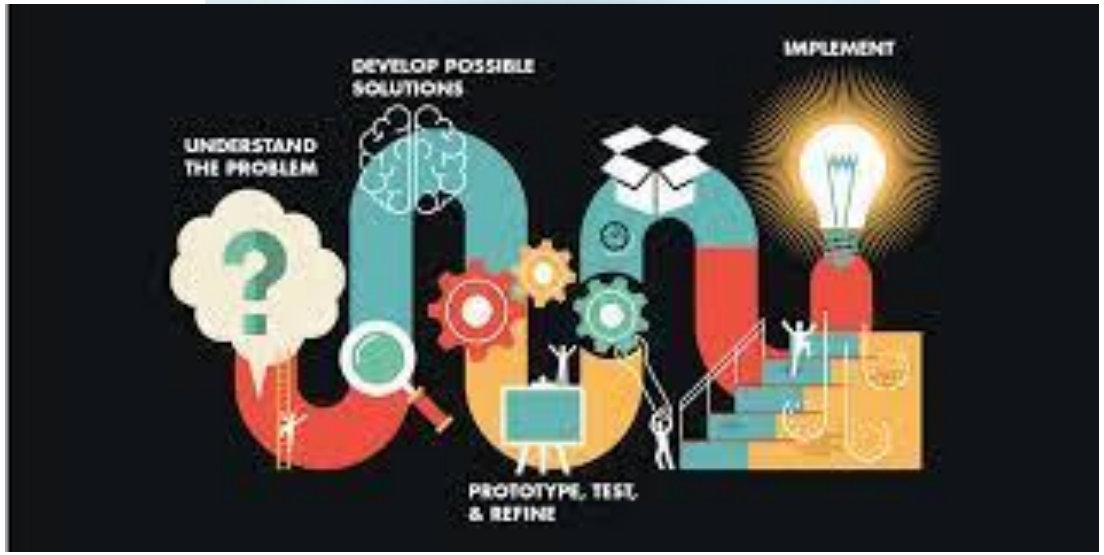
Incorporate Design Thinking (*Human Center Design*) Methodology Into Build

- Process used to understand product end-users, challenge assumptions, redefine problems and create innovative solutions to prototype and test. Incredibly useful to tackle problems that are ill-defined or unknown.

<u>Five phases</u>

- Empathize – Put yourself in end-user's shoes. Study to understand how the issue, situation looking to solve makes them feel or the overall impact.
- Define
- Ideate
- Prototype
- Test

- <u>Examples</u>
  - PillPack
  - Airbnb
  - Uber Eats
  - Doug Dietz – Transforming MRI Scanners for kids
    - Industrial Engineer – GE Health System
    - Great TED talk "Brick wall with a hole in it."
    - His challenge – How to create a scanner EXPERIENCE that children would love?



THE PROBLEM WITH BOX THINKING

Inside = Basic, usual, and ordinary

Thought process... *“How are others doing this?”*

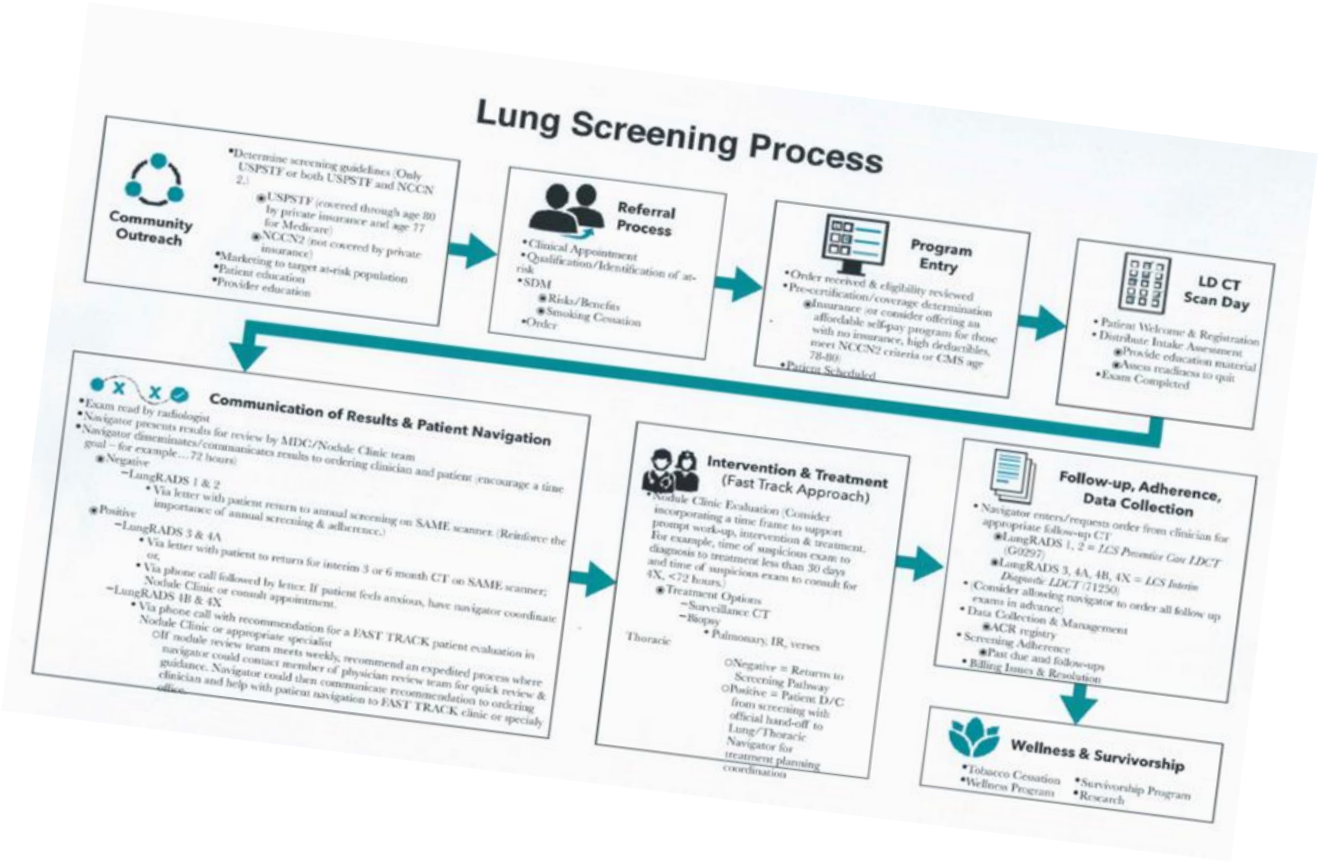
Outside = Proactive, creative & innovative

Thought Process... *“How can we do this better?”*

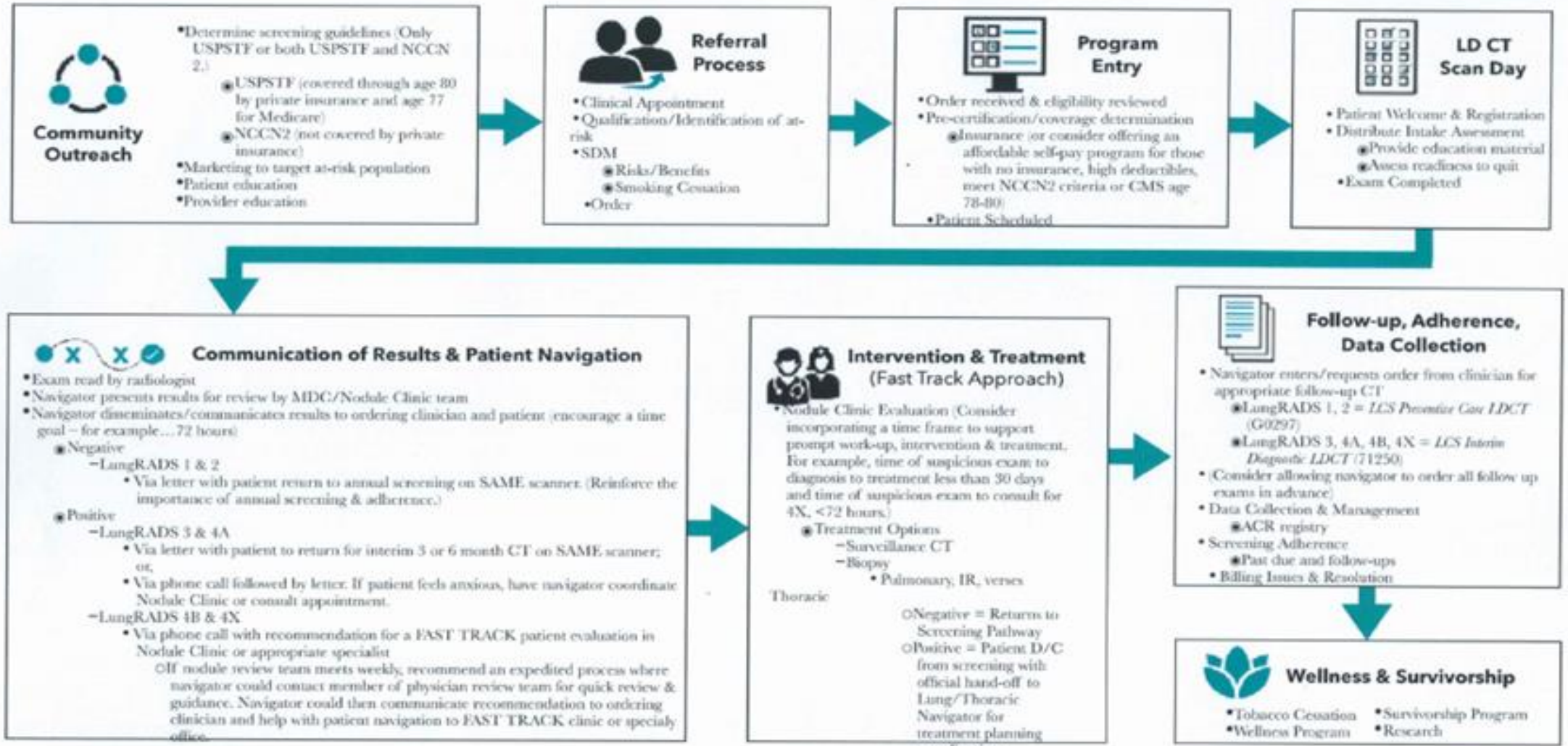
USING PATIENT CENTERED DESIGN IN PROGRAM BUILDING

Journey Map & Connect Fundamental Components

- Community Outreach
- Referral Process
- Program Entry
- LDCT Scan Day
- Communication of Results & Patient Navigation
- Intervention & Treatment
- Follow-up, Adherence, Data Collection
- Wellness & Survivorship



Lung Screening Process



MY LUNG SCREENING JOURNEY & EXPERIENCE

- How to Start an Early Intervention Lung Program: Components to Success

Wellstar Health System

- 11 hospitals
- 26 imaging centers (screened at 19)
- 9 urgent care centers
- 5 thoracic lung clinics with dedicated MDC team
- 665 lung cancer cases treated in 2022
  - 34,035 total screening exams completed
  - 11,940 unique participants
  - 409 lung cancers (1:29)
    - 84 detected via screening in 2022 (13% of total)
  - 53 ancillary cancers
  - ~600 calls a month
  - ~660 screenings a month (Lowest 542, highest 818)
  - ~10% no show rate
  - 3% biopsy rate
  - ~70% adherence rate

2023 Screenings Scheduled

- 1,8,17 = January-March (209 baselines)
- 6,567 Total patients scheduled for 2023

- On target to complete 9,500 screenings for 2023

June 2008-March 2023 data as reported by Wellstar Health System on January 19, 2023

THE WELLSTAR PROCESS (PATIENT CENTERED DESIGN)

If you make it EASY, clinicians will refer & patients will return!

LUNG CANCER SCREENING

- Orders routed to program
- Streamlined scheduling & precertification
- Dedicated phone line for intake
- All exams routed to result coordinators for review & disposition
- Results & follow-up recommendation communicated to patient and ordering clinician via program
- All LungRADS 1,2,3 = direct send. All others go through prompt clinical review process
- Concerning cases are fast tracked to MDC clinic by screening navigator
- Screening & outcome data tracked since program inception
- Dedicated physician review team. Having a Bat line is an essential! *(Basically, navigator has cell number with understanding she/he can reach out anytime to any physician for questions or guidance regarding a case.)*
- **Most significant contributor to program success...** Program **OWNS** the nodule management process. **ALL** follow-up exams are ordered and scheduled through program

INCIDENTAL LUNG NODULES

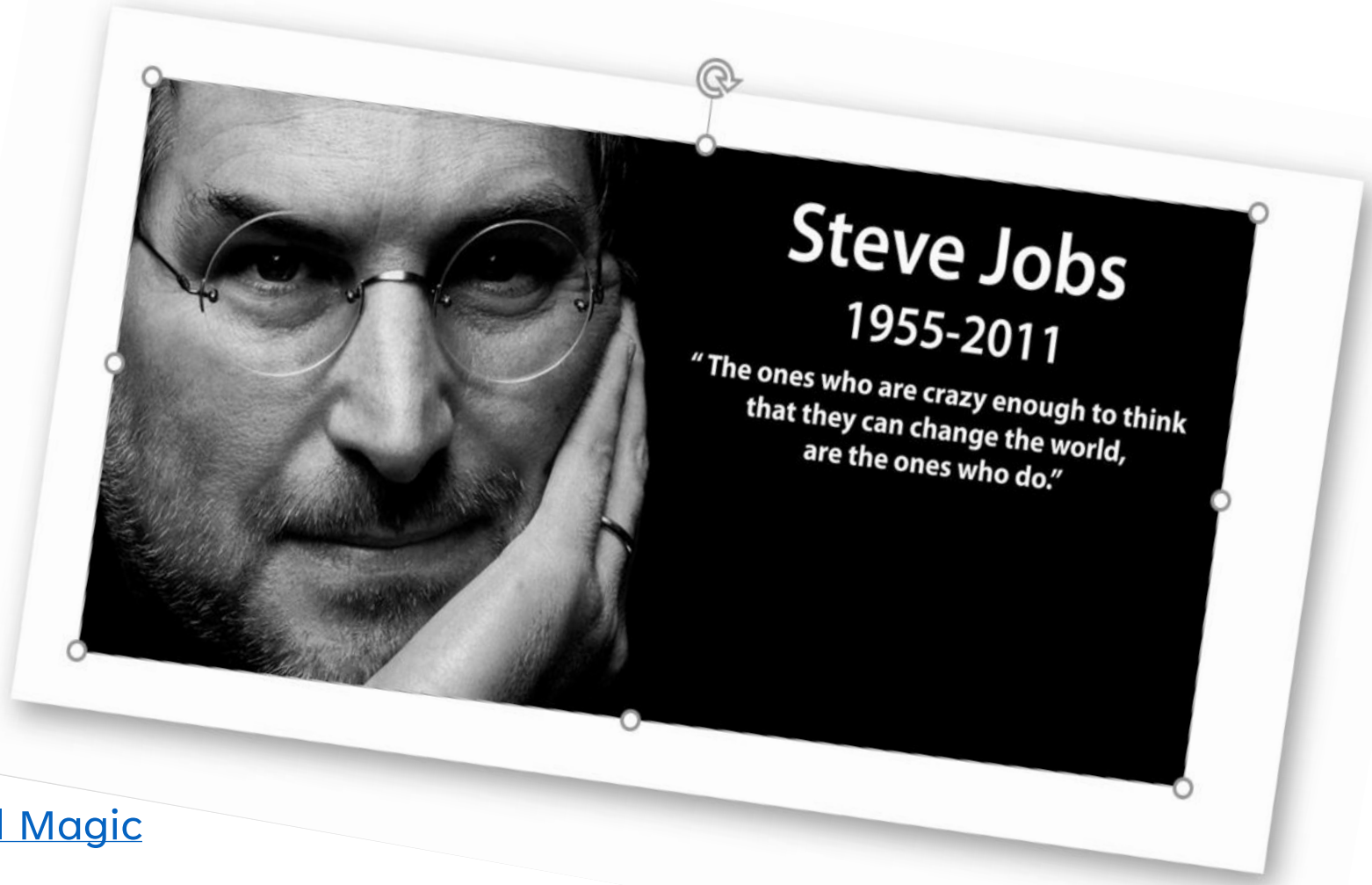
- All notification letters direct patient with a call to action to nodule program for ordering & scheduling
- Nodule program built with autonomy to order and scheduling follow up exam

I know what you are thinking!

No way we could do that here.
We don't…

We will not move the needle screening only a few hundred cases a month

We must do better. Think outside the box. Think innovatively.



Homework assignment: See General Magic

Lessons Learned from General Magic AND
my experience…

- *Having an idea is not good enough – must plan and execute*
- *Understand your customer and their needs*
- *The boring stuff is important*
- *Set expectations for every step along the way*
- *Release early, iterate often (Basically, stop waiting and improve as you go)*
- *Know what's going on around you*
- *Don't give up, believe in your vision*
- *Dream big without limitations*

Go build your legacy!

THANK YOU

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