The ANGELS Initiative

Angels Lean Consultancy *Pathway* Booklet

angels
100 REGIONS | DECEMBER 2027

1 ENROLLMENT

DISCOVER

2 PATHWAY WALKTHROUGH
3 SHADOWING (WASTE WALK AND SPAGHETTI CHART)
4 INTERVIEWS
5 WASTE ANALYSIS (5 WHYS)
6 BASELINE DATA
7 CURRENT STATE SIMULATION
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IMPROVE

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IMPLEMENT

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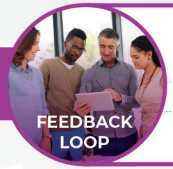


FEEDBACK LOOP

19 WEEKLY QUALITY MEETING
20 30/60/90 DAY REVIEW

This belongs to...

Welcome to the Angels Lean Consultancy Pathway

We are excited to welcome you to the Angels Lean Consultancy Pathway—a structured, impactful approach designed to empower you with the tools, mindset, and methodology to drive sustainable change in hospitals across our network.

This training marks the beginning of a shared mission: to improve efficiency, elevate quality, and ultimately enhance patient outcomes through lean thinking. The pathway is built around three core phases—**Discover, Improve, and Implement**—each designed to guide you and your hospital partners through a meaningful transformation process.

We've also embedded a **Feedback Loop**, to ensure that progress is measured, celebrated, and refined over time.

This is more than a training. It's a movement. And you are at the heart of it.

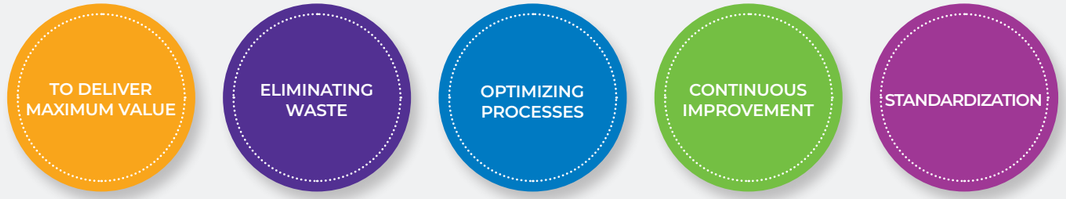
Welcome aboard!

Lean Methodology

Lean is a systematic approach to continuous improvement that aims to deliver maximum value to the customer (in healthcare: the patient and the hospital) by eliminating waste and optimizing processes.

Originating from the Toyota Production System, Lean has evolved into a universal methodology applied across industries, including healthcare, where it helps improve quality, efficiency, and team collaboration.

KEY PRINCIPLES



4 Phases of the Angels Lean consultancy pathway

4 PHASES OF LEAN CONSULTANCY

DISCOVER	IMPROVE	IMPLEMENT	FEEDBACK LOOP
LEARN	INFLUENCE	SUPPORT	REFINE
• Observe and map the current state • Interview team • Identify value and waste	• Focus on the future state • Remove the wastes and create the flow • Test the future state pathway in simulation	• Action plan is created for implementation of new protocol	• Continuing to improve the process aiming at perfection

The Power of *Moments*

CERTAIN BRIEF EXPERIENCES CAN JOLT US AND ELEVATE US AND CHANGE US.

WE CAN LEARN HOW TO CREATE EXTRAORDINARY MOMENTS IN OUR LIFE AND WORK.

Chip Health & Dan Health

Initial Standard Presentation For More *Impactful* and *Persuasive* Messaging

1. CONSISTENCY AND CLARITY
2. EMOTIONAL CONNECTION & STORYTELLING
3. INCORPORATING A DATA-DRIVEN APPROACH
4. PROFESSIONALISM, BRANDING & VISUAL IMPACT
5. EFFICIENCY

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100 REGIONS | DECEMBER 2027

Welcome Pack Folder Overview

ENROLLMENT

1. Welcome letter
2. EMS brochure
3. QR code sticker
4. Registration certificate
5. FAST medic support brochure
6. Angels brochure 2023
7. Consultants' business card
8. "Ready - Steady - Go" poster
9. 100 regions pamphlet

ANGELS CONSULTANCY PROCESS

Ready, Steady, Go!

Capture *your* thoughts

Capture *your* thoughts

Pathway Walkthrough

FIRST STEPS TO UNDERSTANDING THE STROKE PATHWAY

1. START UNDERSTANDING THE STROKE PATHWAY
2. GET TO KNOW THE HOSPITAL STROKE TEAM AND GAIN THEIR TRUST
3. UNDERSTAND THE GENERAL INFRASTRUCTURE OF THE HOSPITAL AND THE MOTION OF THE PATIENTS
4. EVALUATE FLOW – WASTE – PRIORITY ACTIONS
5. DOCUMENTING PROCESSES

REMEMBER

You're still at the beginning of the observation phase so resist jumping into "problem solving mode" and giving recommendations.


HOSPITAL PERSONNEL AND GENERAL INFRASTRUCTURE

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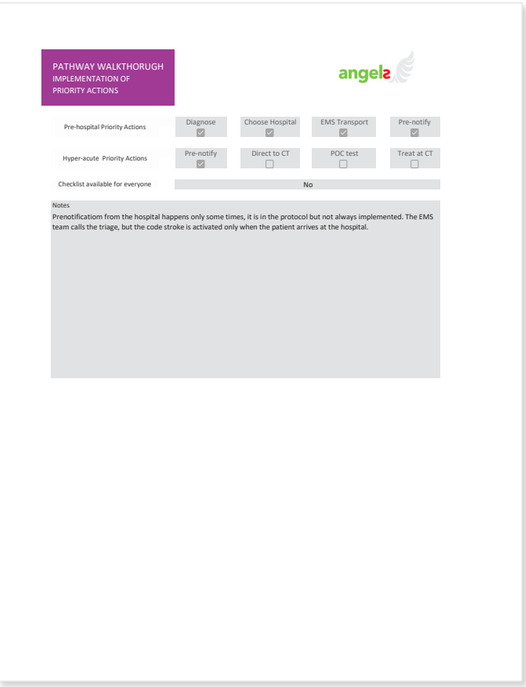
Hospital Layout	Please describe or map the stroke pathway: triage, ED area, radiology, Stroke Unit/ICU or add a link (distances, floors, presence of lifts)


PATHWAY WALKTHORUGH IMPLEMENTATION OF PRIORITY ACTIONS

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Pre-hospital Priority Actions	Diagnose ☑	Choose Hospital ☑	EMS Transport ☑	Pre-notify ☑
Hyper-acute Priority Actions	Pre-notify ☑	Direct to CT ☐	POC test ☐	Treat at CT ☐
Checklist available for everyone	No			

Notes

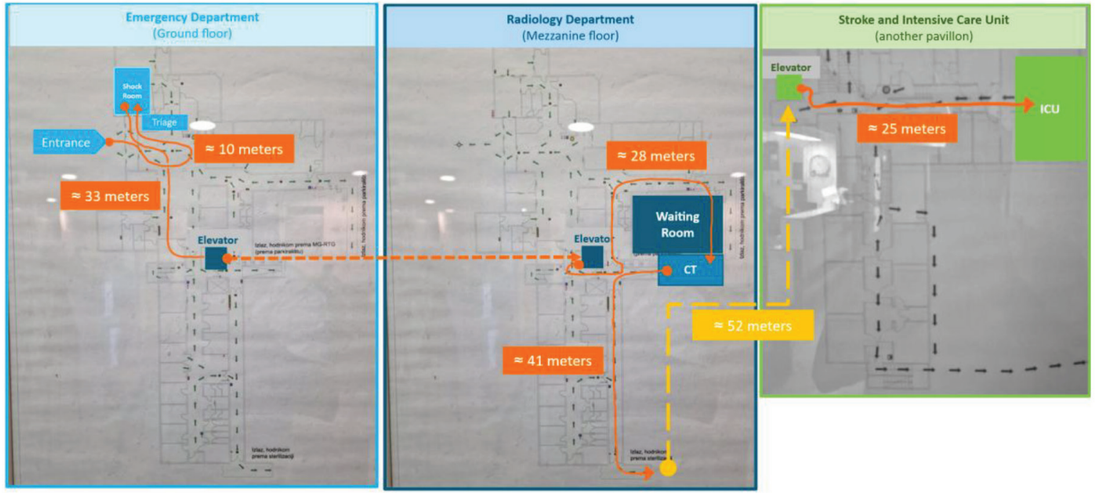
Prenotificatiom from the hospital happens only some times, it is in the protocol but not always implemented. The EMS team calls the triage, but the code stroke is activated only when the patient arrives at the hospital.

Shadowing
Waste Walk

	TRANSPORTATION	INVENTORY	MOTION	WAITING
	Unnecessary movements of products, patients & materials	Excess supplies or medications not immediately needed	Excessive movement by staff due to poor layout or workflow	Wasted time when patients or staff are waiting for the next step
STROKE EXAMPLE	Moving the patient multiple times (e.g., from ER to imaging, back to ER, then to stroke unit) instead of streamlining flow by going direct-to-CT protocols. Waiting for transport staff to move patient.	Overstock or understowck of critical supplies (e.g., tPA, thrombolysis kits) leading to thrombolytics that expire, unused or cluttered storage areas or delay. Maintaining too many unused devices that require upkeep.	Staff walking long distances to retrieve imaging results or equipment. Nurses or doctors searching for protocols or consent forms.	Delays in CT scan availability or waiting for neurology consult. Waiting for lab results (creatinine for contrast, INR for thrombolysis). Waiting for neurologist or radiologist review.
IMPACT	Time loss and increased risk during transfers.	Financial waste and potential for errors.	Fatigue, inefficiency, and slower response times.	Increased door-to-needle time, worse outcomes.
	OVER PRODUCTION	**OVER PROCESSING**	**DEFECTS**	**SKILLS**
	Doing more than what is needed or before it's needed	Redundant or unnecessary steps in care delivery	Errors in diagnosis, documentation, or treatment	Underutilizing people's talents, skills, knowledge
STROKE EXAMPLE	Doing duplicate documentation or unnecessary additional scans "just in case." Running tests that don't change immediate management.	Complex checklists or paperwork that delay door-to-needle time. Multiple sign-offs for tPA or thrombectomy decisions.	Mislabeling imaging or blood results or incorrect triage leading to delayed thrombolysis. Incorrect interpretation of imaging requiring re-evaluation.	Not involving nurses or paramedics in early recognition protocols. Not utilizing stroke-trained nurses to initiate care promptly.
IMPACT	Wasted resources and delayed critical interventions.	Frustration, time loss, and reduced patient satisfaction.	Patient harm, rework, and longer hospital stays.	Missed opportunities for innovation and faster care.

Spaghetti Chart

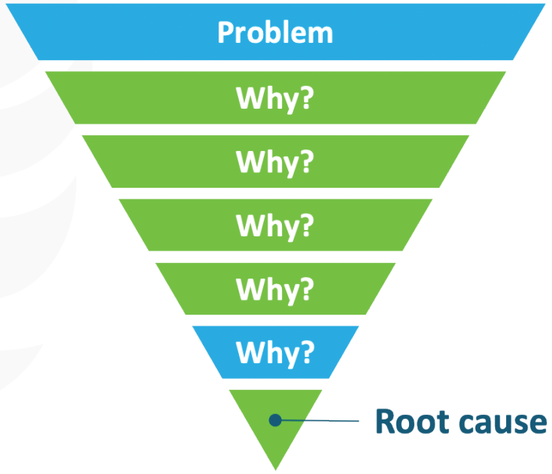
The Spaghetti Chart helps visualize movement and identify inefficiencies—revealing where time and energy are lost in daily workflows.



The 5 Whys

Remember being a curious kid and asking "why?" about everything?

The 5 Whys method is pretty much the same. Start with the problem at hand and ask “why did this happen?” Once you have an answer, ask “why?” again, digging deeper. Keep asking “why?” until you’ve asked it five times or until you reach a point where the root cause becomes clear.



ROOT CAUSE ANALYSIS - 5 Whys

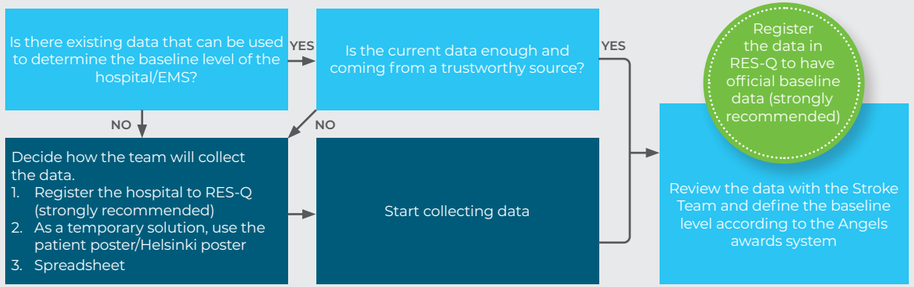
PROBLEM — *Patient transported to ED first and then to CT*

PRIMARY CAUSE	Why is it happening?	Why is it happening?	Why is it happening?	Why is it happening?	ROOT CAUSE	IMPROVEMENT ACTIONS TO TAKE
ED is responsible for initial triage and registration.	There is no protocol in place that allows bypassing the ED for suspected stroke patients.	Internal rule of the hospital enforces registration before any diagnostic step			Why is it happening?	Improvement actions: 1. If prenotification: EMS pre register the patient 2. If no prenotification: triage register the patient while doctor is already evaluating him
	System requires registration before imaging	Internal rule of the hospital enforces registration before any diagnostic step				
No prenotification from EMS to hospital	The hospital has not implemented a dedicated acute stroke pathway with EMS coordination	There is no updated protocol, the old protocol is from 2018			Why is it happening?	Improvement actions: Update hospital stroke pathway and policies
	EMS are not trained to recognize stroke	No one provided training			Why is it happening?	Improvement actions: Provide regular stroke recognition training
	No stroke phone	No budget allocated for stroke-specific communication tools			Why is it happening?	Improvement actions: Allocate budget for dedicated stroke hotline
Lorem ipsum					Why is it happening?	Improvement actions
					Why is it happening?	Improvement actions

Capture *your* thoughts

Capture *your* thoughts

Baseline Data

WHY	Based on real patients understanding the current situation Understand the reason why of this data Determine the baseline level according to the Angels awards system
WHAT	Baseline data in hospital resource form Angels awards KPIs
HOW	
WHEN	During the Discover phase (mainly in SHADOWING and INTERVIEWS)

Baseline Data

Baseline Data Please clarify the data source: _____	**Per Year (related to the previous year)**
Number of stroke patients admitted	
Number of ischemic strokes	
Number of hemorragic strokes	
Number of TIA	
Number of IVT* (mandatory)	
Number of EVT Mothership	
Number of EVT Drip and ship	
Median age of stroke patients	
% of female	
Median NIHSS on admission	
Median NIHSS at discharge	
% mRS 0-2 at 3 months	
% of inhospital mortality	

	Ambulance	**Walk In**	**Other (specify)**
How do patients typically arrive at the hospital?	%	%	%

Capture *your* thoughts

Capture *your* thoughts

Current State *Simulation*

WHAT	WHO	HOW	TOOLS
A. Map the process **B. Identify value added and non value added activities towards the treatment decision making**	· Actros · Heads of departments	1. Arrive with a completed pathway (**Pathway A**) based on the recording from the current state simulation. 2. Workshop to identify VAA and NVAA: review each individual step and mark each step as value-adding (VA), non-value adding (NVA) or necessary non-value adding (NNVA) **towards the treatment decision making**, with yellow-green-red round stickers. 3. Looking only at the VA and the NNVA activities (i.e. green and yellow actions) recreate another pathway (**Pathway B**). This will be shorter due to the new focus. 4. Analyze the pathway to understand: 1. The process time for each individual activity 2. The total time to complete Pathway B. 5. In case during the discussion, the team has some proposals of potential improvement areas, please report them in the map as **opportunity clouds**. 6. Close out the meeting, leaving the team with Pathway B, stating that we're still in the observation phase and will meet the whole team to complete the workshop and agree on the future state.	· Stickers exercise · Pathway B of the process mapping workshop · Yellow-green-red round stickers · Big white paper · Marker · Post it

Capture *your* thoughts

VA and NVA Activities in *Stroke Hyperacute Pathway*

MAXIMIZE

VALUE ADDED (VA) ACTIVITIES

Any activity that contributes in a meaningful way to the decision making.

MINIMIZE TIME REQUIRED

NECESSARY NON VALUE ADDED (NNVA) ACTIVITIES

Any activity that does not directly contribute to the decision making but is still necessary for the process to function.

ELIMINATE

NON VALUE ADDED (NVA) ACTIVITIES

Any task that does not add any value to the decision making and is not required for the process to function.

Process Mapping Workshop

STARTING FROM THE CS SIMULATION AND FINDINGS OF THE OTHER ACTIVITIES OF THE DISCOVERY PHASE:

STEP 1 Arrive with a completed pathway **(Pathway A)** based on the recording from the Current state simulation.

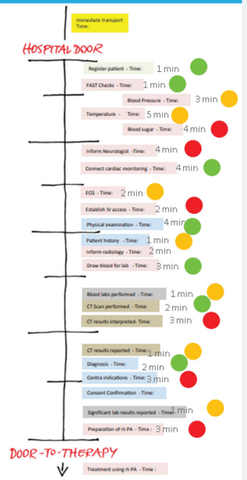
STEP 2 Workshop to identify VAA and NVAA: review each individual step and mark each step as value-adding (VA), non-value adding (NVA) or necessary non-value adding (NNVA) **towards the treatment decision making,** with yellow-green-red round stickers.

VALUE ADDED (VA) ACTIVITIES

NECESSARY NON VALUE ADDED (NNVA) ACTIVITIES

NON VALUE ADDED (NVA) ACTIVITIES

PATHWAY A



Process Mapping **Workshop**

STARTING FROM THE CS SIMULATION AND FINDINGS OF THE OTHER ACTIVITIES OF THE DISCOVERY PHASE:

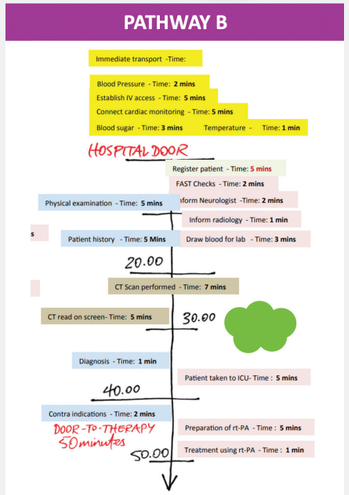
STEP 3 Looking only at the VA and the NNVA activities (i.e. green and yellow actions) recreate another pathway **(Pathway B)**. This will be shorter due to the new focus.

STEP 4 Analyze the pathway to understand:

1. The process time for each individual activity
2. The total time to complete Pathway B.

STEP 5 In case during the discussion, the team has some proposals of potential improvement areas, please report them in the map as **opportunity clouds**

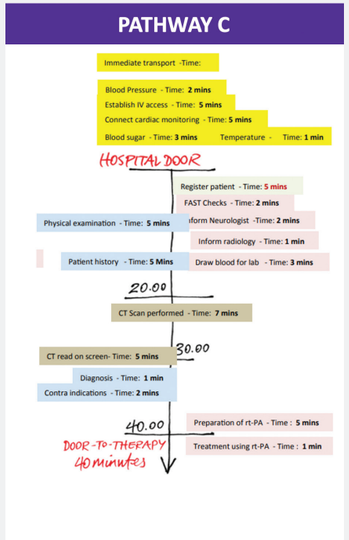
STEP 6 Close out the meeting, leaving the team with **Pathway B**, stating that we're still in the observation phase and will meet the whole team to complete the workshop and agree on the future state.



Back Office

CREATE PATHWAY C

1. USE INFORMATION FROM DISCOVER PHASE
2. INCORPORATE OPPORTUNITY CLOUDS SUGGESTIONS
3. FIND OPPORTUNITIES TO INTRODUCE PRIORITY ACTIONS



Hospital *Resource* Form

At the end of the Discover phase, you will have a completed Hospital Resource form which will lay the foundation for the next phase in the lean consultancy process.

This data will support tailored consultancy and help identify opportunities for lean improvement.

Capture *your* thoughts

Stroke Champions Meeting

WHAT	WHO	HOW	TOOLS
A. Share key insights from the Discovery phase to build a common understanding of the current state and improvement opportunities. **B. Engage champions** to co-create the influence strategy and secure their commitment to lead change within the stroke team.	· Stroke Champions	**Presentation of findings:** champions are presented with a comprehensive overview of the current state, including: • **Region overview** • **Hospital overview** • **Summary of identified gaps** • **Spaghetti chart** (visualizing movement inefficiencies) • **Waste walk findings** (highlighting non-value-adding activities) • **Current state value stream map (Pathway A & B)** • **Target state for the hospital** (Gold, Platinum or Diamond) **Discussion & creation of Pathway C:** champions are invited to validate the findings, share additional insights, and reflect on the implications for their teams. Consultant shares insights from interviews that could make Pathway C possible. The Action Plan template can work here as a back-up to showcase what the implementation can look like based on identified gaps. **Planning for influence:** · Perform the optimization project identification & prioritization matrix · Identifying key stakeholders and potential resistances · Mapping out communication and engagement strategies · Defining roles and responsibilities in the upcoming phases **CommZitment building:** champions express their support and commitment to the pathway, becoming advocates for change within their departments.	STROKE TEAM PROJECT PLAN - Stroke Champions Edition

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Future state Multidisciplinary Meeting & Simulation

WHAT	WHO	HOW	TOOLS
Agreement of the future way of working	• Decision makers • The whole stroke team	**Step 1: review current state analysis** Start the workshop by sharing: • Findings of shadowing & waste walk • CS simulation findings (showing the video and the graphs of delays) • Get buy-in for the target award state and deadline for achieving the target **Step 2:** • Present together with the champions the outcome of the process mapping value-added analysis (Pathway A, B & C) • Allow for some discussion in the multidisciplinary team on the potential challenges with implementing **Pathway C**, which will be our future state pathwa **Step 3: agreement on new pathway and protocol** • Get agreement on the future pathway and treatment protocols for the hospital • Agree that some stroke team members will be involved by the consultant in smaller projects to achieve the targets **Step 4: future state simulation** • Consolidate the future state flow through a simulation • Debriefing (emotion, plus delta, agreement of the FS)	• STROKE TEAM PROJECT PLAN - Stroke Champions Edition • Pathway A and B • Stickers exercise • Big white paper • Marker

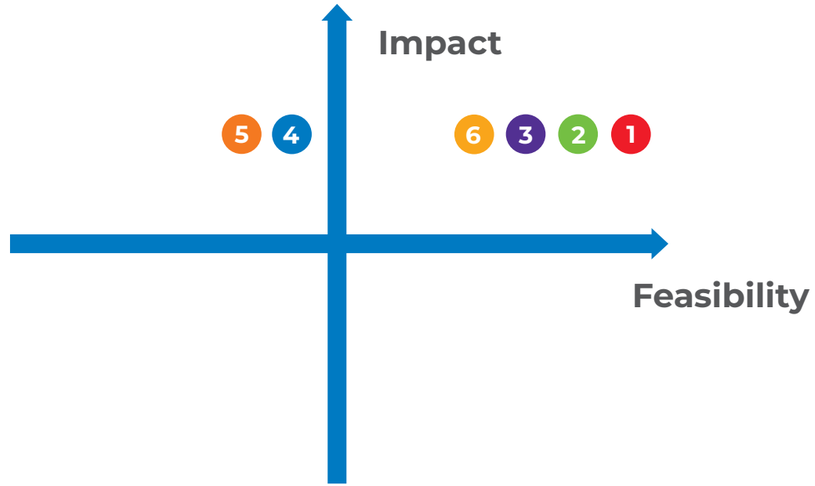
Capture *your* thoughts

Optimization Projects
Identification

	Project	Goal
1	EMS prenotification	Enable early hospital preparation for incoming stroke patients
2	Implement direct-to-CT	Reduce time to imaging and diagnosis
3	Treat at CT	Accelerate treatment initiation at point of imaging
4	Post-acute phase	Ensure continuity of care after acute treatment
5	Secondary transport	Facilitate timely transfer to thrombectomy-capable centers
6	Quality monitoring	Drive continuous improvement of the stroke pathway

Optimization Projects
Prioritization

These steps should be first aligned on during the stroke champions meeting, with final agreement in the future state MDM to get buy in from all involved parties.



Capture *your* thoughts

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Stroke Team *Project Plan*

1. REGION OVERVIEW
2. HOSPITAL OVERVIEW – ORGANIZATION DASHBOARD
3. SHADOWING – WASTE WALK
4. SHADOWING – SPAGHETTI CHART
5. SUMMARY OF THE GAPS
6. CURRENT STATE VALUE STREAM MAP
7. TARGET FOR THE HOSPITAL
8. COMPARISON CURRENT AND FUTURE STATE VALUE STREAM MAP
9. OPTIMIZATION PROJECTS IDENTIFICATION
10. OPTIMIZATION PROJECTS PRIORITIZATION

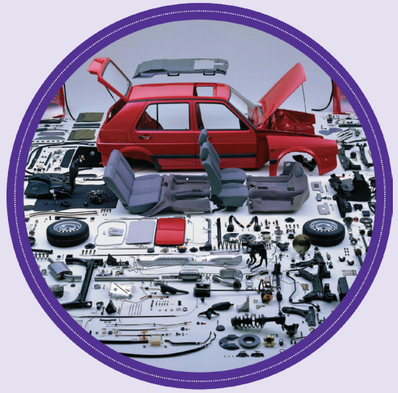
Stroke Project Plan

HOSPITAL:

Implementation

YOU NOW HAVE THE FULL PICTURE – THE FUTURE STATE VALUE STREAM MAP.

Your role is to **guide the team through implementation**, ensuring no one is left alone to reassemble the system.

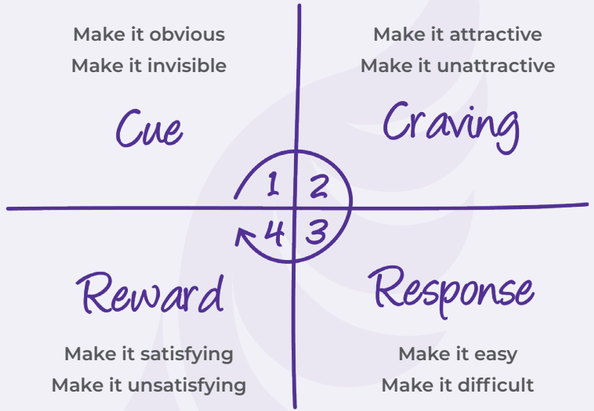


Action plan

This plan should start being built during the Improve phase based on the identified gaps. Nevertheless, its main purpose is during the Implement phase when this document is used to track progress and follow up on tasks and responsibilities.

TARGET FOR THE HOSPITAL IS	NEW TREATING						
PROJECT	EMS Prenotification			NEXT FOLLOWUP DATE			
CATEGORY	TASK	OWNER	DATE TO BEGIN	DUE DATE	STATUS	TIPS	MATERIALS
Consultancy	EMS and Hospital meeting	Dr Brown	09/01/2025	30/01/2025	Complete	Facilitate the team meeting, build relationships, educate on guidelines, best practices and priority actions, share the benefit of prenotification (use simulation videos to emphasis the added value), use project plan as a guide for meeting topics, come to an agreement for cooperation (e.g. memorandum of understanding)	Memorandum of understanding: https://www.angels-initiative.com/sites/default/files/2023-05/EMS-Hospital%20Project%20MOU_Eng%20%281%29.docx Pre-Hospital PPT: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.angels-initiative.com%2Fsites%2Fdefault%2Ffiles%2F2025-06%2FPre-Hospital_Legacy_Logo_190118_EN_v03.pptx&wdOrigin=BROWSELINK Project Plan: https://www.angels-initiative.com/sites/default/files/2023-05/21_952%20-%20Pre-Hospital%20Project%20Plan%20-%20v03.pdf Simulation videos with key actions implemented: https://www.angels-initiative.com/watch/15847/return/URL=%2Fwatch%3Fall%3Dvideos%26lang%3D1519%26category%3Dhyperacute Simulation video without key actions implemented: https://www.angels-initiative.com/watch/15837/return/URL=%2Fwatch%3Fall%3Dvideos%26lang%3D1519%26category%3Dhyperacute
Standardization	Implement EMS checklists	Dr James	10/01/2025	11/02/2025	In Progress		EMS checklists: https://www.angels-initiative.com/learning-resources/emergency-services-resources-0
Standardization	Identify direct ED/Stroke Unit numbers (bypass general reception)	Nurse Anna	11/01/2025	12/02/2025	On Hold	Insert direct numbers onto checklists or implement ambulance cards	Ambulance cards: https://www.angels-initiative.com/learning-resources/emergency-services-resources-0
Standardization	Create a stroke whatsapp group	Dr Bingley	20/01/2025	13/02/2025	Delayed	nclude all departments involved in the stroke pathway eg. EMS, ED, Radiology, Labs, Neurologists,Speech Therapy, Physiotherapy etc.	
Education	Define the training plan		20/01/2025	13/02/2025	Complete	Mark trainings and expected completion dates on the calender and notice board. Support with e-learning suggestions and consider to include in any regional Angels Days	Suggestions for e-learning courses: For EMSALS-ANGELS: https://www.angels-initiative.com/lms/group/44 PSE-HOSPITAL STROKE CARE (BASICS): https://www.angels-initiative.com/lms/group/43 For Hospital & EMS CREATING A STROKE TEAM: https://www.angels-initiative.com/lms/group/61 HYPER ACUTE PHASE: https://www.angels-initiative.com/lms/group/20
Education	Practice simulation sessions with involvement of EMS team		20/01/2025	13/02/2025	Complete		Simulation documents: https://www.angels-initiative.com/consultant-resources/consultancy-standardisation#simulation-documents Komarno video for best practice : https://www.angels-initiative.com/learning-resources/emergency-services-resources-0 (Scroll down, you find the video under workshop guidance material)
Quality Monitoring	Agree on the way to measure prenotification		20/01/2025	13/02/2025	In Progress	Enrol to an official registry: SITS, RES-Q, Helsinki poster Useful material such as - RES-Q data collection forms	Quality Monitoring Materials: https://www.angels-initiative.com/page/quality-monitoring Angels Awards: https://www.angels-initiative.com/angels-awards
Quality Monitoring	Agree on date to implement the use of the chosen QM tool		20/01/2025	13/02/2025	Delayed	Mark it on the calender as Data Quality day/week	
Community	Schedule a meeting to provide feedback about checklist usage and handover with hospitals during stroke meeting		20/01/2025	13/02/2025	Delayed	Include EMS representative on a frequent basis in weekly stroke quality meetings	Stroke Team Meeting Agenda: https://www.angels-initiative.com/sites/default/files/2024-10/Stroke%20Team%20Meeting%20Agenda_Print.pdf
Community	Set up a 30-60-90 day follow up meeting		20/01/2025	13/02/2025	To Start		
Community	Share their experience with others		20/01/2025	13/02/2025	In Progress	Shine the spotlight on the Angels website stories, local newsletters, Angels regional workshops	Link to community page: https://www.angels-initiative.com/page/community-stories Link to Angels journey page: https://www.angels-initiative.com/angels-community/angels-journey E-mail Annelize: annelizevisser@gmail.com

Implementation-
Habit Plan

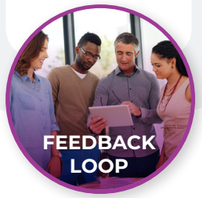


THE
FOUR LAWS
OF BEHAVIOR
CHANGE

Capture *your* thoughts

Feedback Loop

1. WHAT DID THE TEAM SET OUT TO DO?
2. WHAT ACTUALLY HAPPENED?
3. WHY DID IT HAPPEN?
4. WHAT ARE WE GOING TO DO ABOUT IT?

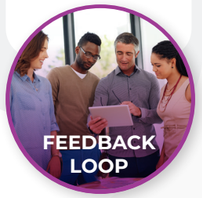


THE CONSULTANT PLAYS A CENTRAL ROLE IN GUIDING THE HOSPITAL TEAM THROUGH THE FEEDBACK LOOP.
ACTS AS A FACILITATOR, NOT A SUPERVISOR - ENCOURAGING OWNERSHIP AND TEAM-LED IMPROVEMENT.

CHARACTERISTICS OF A GOOD AAR FACILIATOR

- Helps the team to **identify** successes, challenges, and next steps
- Stays focused on the **agenda**
- **Encourages** others to be candid, but professional
- Ensures the expected outcome/s or objectives are **clear**
- Gradually transitions from active guidance to **empowering autonomy**
- **Summarizes** key points

Capture *your* thoughts



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Now It's *Your Turn* to Make an Impact

Dear Consultants,

You've now been equipped with the tools, insights, and methodology of the **Angels Lean Consultancy Pathway.** The next step is yours: **go out into the field and implement.**

We trust in your ability to lead change, inspire teams, and drive measurable improvements in stroke care. Your role is pivotal—not just in applying lean principles, but in **making a real difference** for patients, professionals, and hospitals.

Let's turn knowledge into action.
Let's make lean real.

Together, we transform stroke care.

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> "Lean is not a project—**it's a mindset.** Go out, lead change, and let impact be your legacy."

GIVING *life* A CHANCE.

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