



สถาบันรับรองคุณภาพสถานพยาบาล (องค์การมหาชน)
The Healthcare Accreditation Institute (Public Organization)

Driver Diagram

แผนภูมิปัจจัยขับเคลื่อน

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สถาบันรับรองคุณภาพสถานพยาบาล (องค์การมหาชน)

High Value Healthcare



SOCIAL OBJECTIVES

Patient Centered: เข้าถึงง่าย บุคลากรสื่อสารดี มีความรู้ และทักษะ ให้เวลาที่จะตอบสนองความต้องการของผู้ป่วย
(**patient centeredness, accessibility, timeliness**)

CLINICAL OBJECTIVES

Clinically Effective: ก่อให้เกิดผลลัพธ์ทางคลินิกที่มีความสำคัญต่อผู้ป่วย ต่อชุมชน และต่อผู้จ่ายเงิน
(**effectiveness, appropriateness, safety**)

ECONOMIC OBJECTIVES

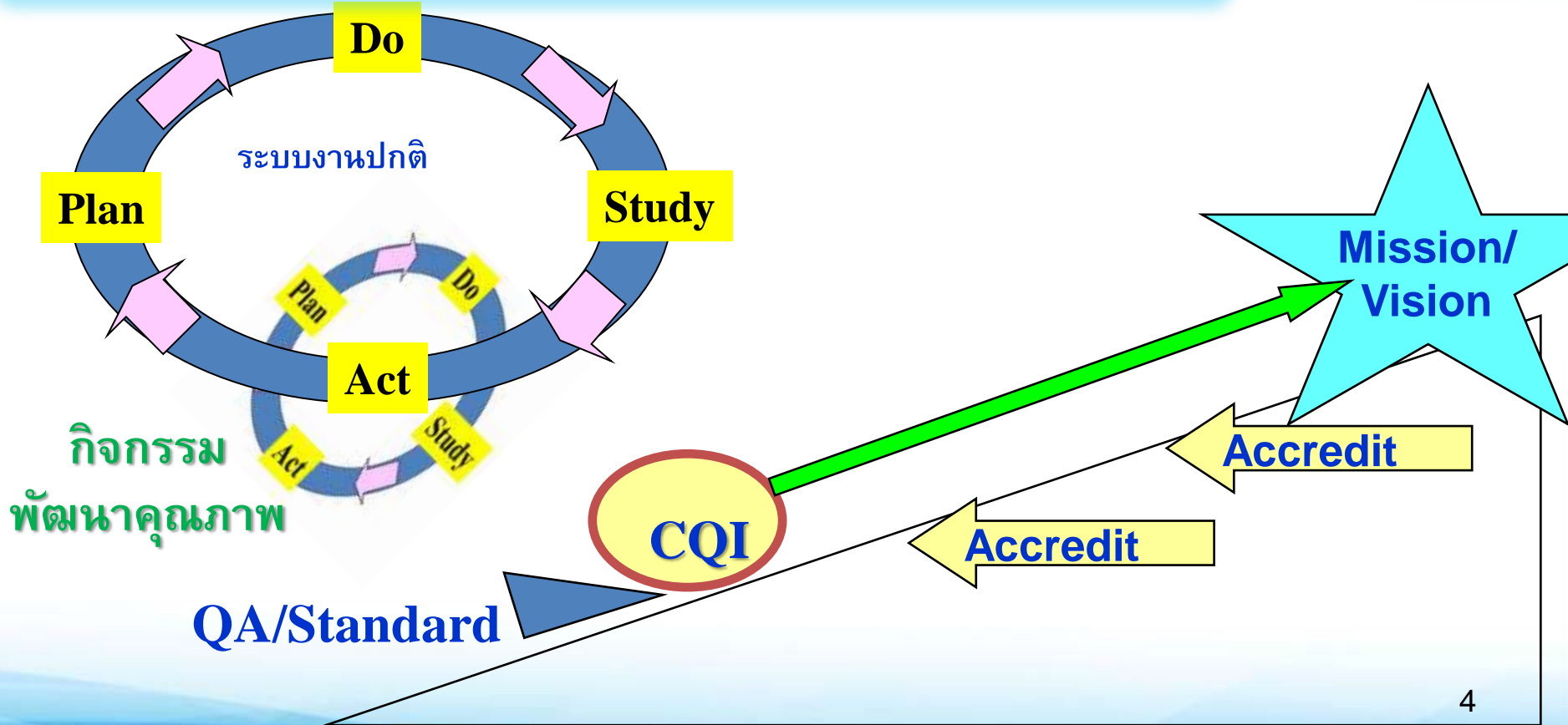
Cost Effective: คุ่มต่ำกว่าเมื่อเทียบกับทางเลือกอื่น เพราะขจัดความสูญเปล่าออกจากกระบวนการทำงาน
(**efficiency**)



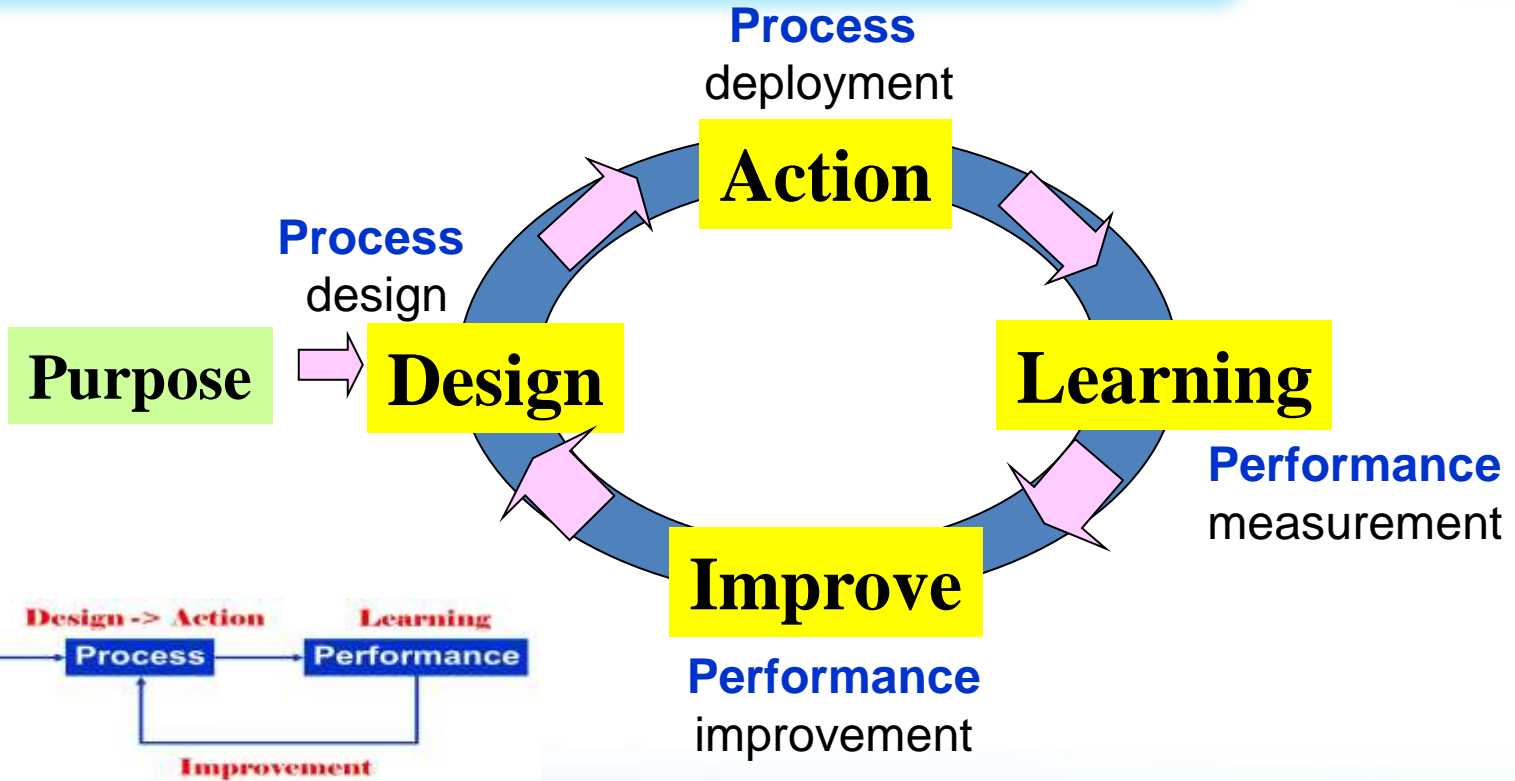
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Continuous Quality Improvement (CQI)

คุณภาพเริ่มจากพื้นฐาน PDSA



สรุปย่อให้ง่ายขึ้นเป็น 3P



3C- PDSA/DALI



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ไหว้ฟ้า รู้ดิน ตั้งเป้า กางแผนที่ ออกเดินทาง

ไหว้ฟ้า

Concepts

รู้หลัก

Context

รู้โจทย์

Criteria

รู้เกณฑ์

กางแผนที่

ตั้งเป้า

Purpose

Design

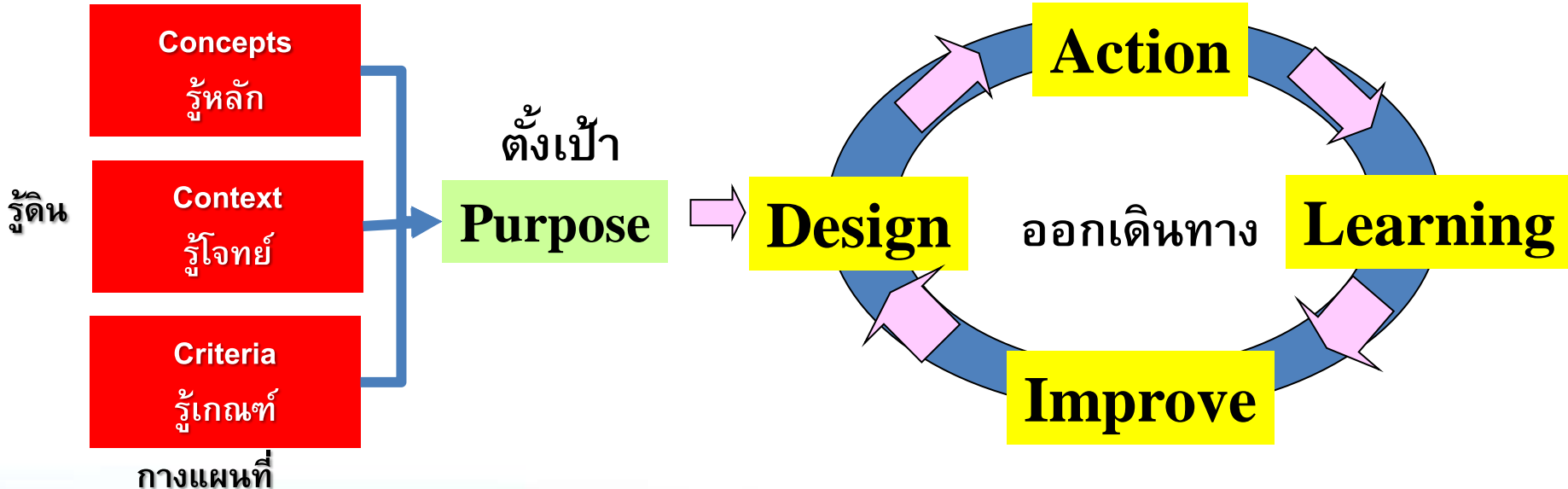
Action

Improve

Learning

ออกเดินทาง

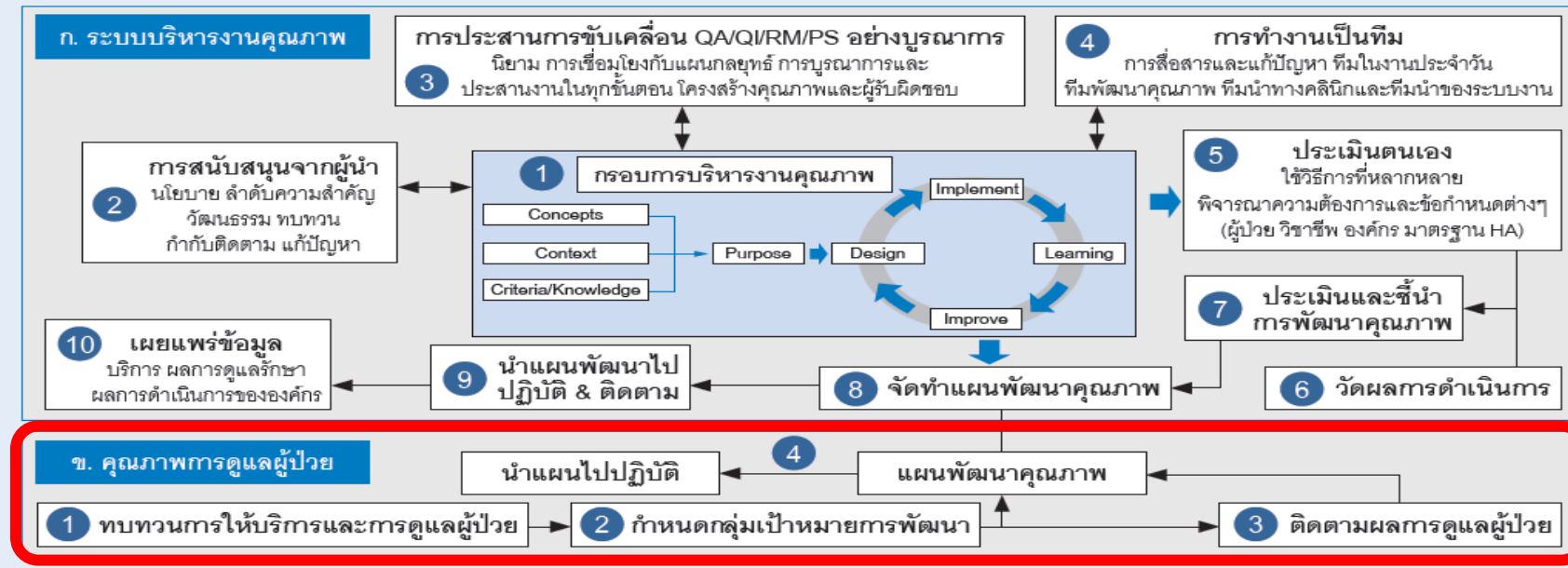
รู้ดิน



II-1 การบริหารความเสี่ยง ความปลอดภัย และคุณภาพ (RSQ)

II-1.1 การบริหารงานคุณภาพ (Quality Management)

มีการบริหารงานคุณภาพ ที่ประสานสอดคล้องกันในทุกระดับ.



Clinical Tracer / Clinical Quality Summary

ใช้ 3P เพื่อขับเคลื่อนและรายงานคุณภาพ

- **Purpose** แสดงเป้าหมายการดูแลผู้ป่วยที่ชัดเจนพร้อมปัจจัยขับเคลื่อน(Driver)
- **Process** แสดงคุณภาพในทุกขั้นตอนการดูแลผู้ป่วยตั้งแต่เริ่มต้นจนถึงสิ้นสุด
 - Map key patient care processes
 - Identify process requirement เสริมด้วยการทบทวน NEWS
 - Patient's **N**eed, **E**vidence, **W**aste, **S**afety
 - Process design
- **Performance** แสดงระดับและแนวโน้มของผลลัพธ์ที่สำคัญ (ตามเป้าหมาย)
 - Measurement
 - Run chart or Control chart with annotation
 - Benchmarking (if possible)
 - Improvement

Propose & Drivers ตั้งเป้าและวิเคราะห์ปัจจัยขับเคลื่อน

วิเคราะห์ปัจจัยขับเคลื่อนและ intervention

AIM

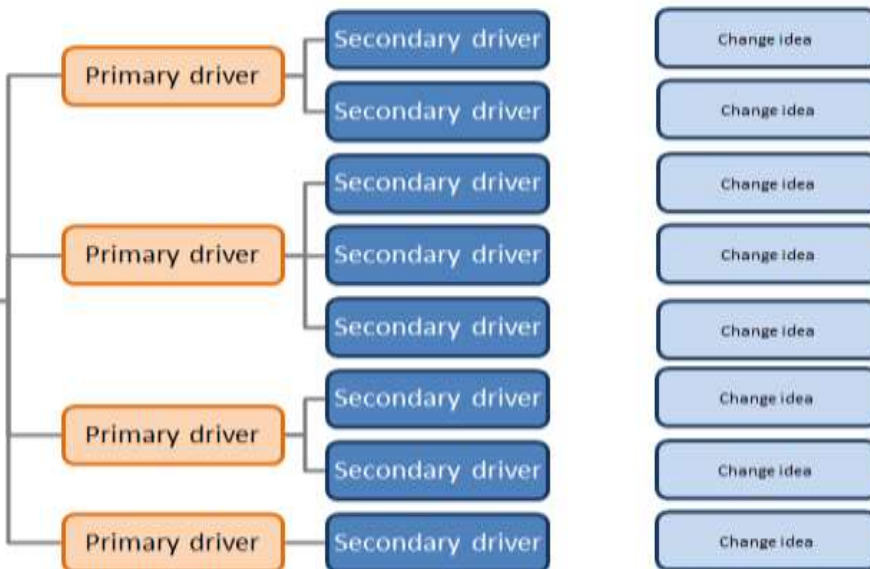
PRIMARY DRIVERS

SECONDARY DRIVERS

CHANGE IDEAS

กำหนดเป้าหมายของการดูแลผู้ป่วย

Purpose



กำหนดตัววัด

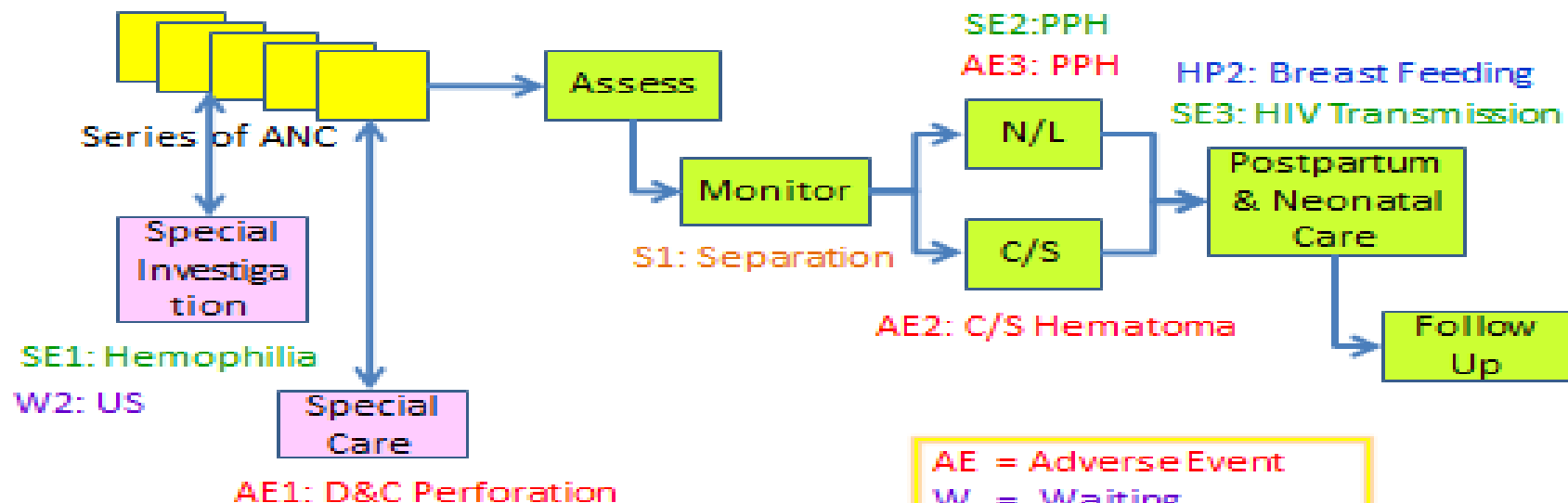
ประยุกต์ใช้ Process Management

- **Zoom Out:** คลี่ **Flow** ของกระบวนการตั้งแต่ต้นจนจบ
- **Zoom In:**
 - ระบุ **Process Requirement** ของแต่ละขั้นตอน
 - **Process Design** ออกแบบกระบวนการเพื่อบรรลุ **Process Requirement**
 - **Process Indicator** กำหนดตัวชี้วัดของกระบวนการ (ถ้าเป็นประโยชน์ในการทำงาน)

R1: Teenage Pregnancy

W1: ANC Queuing

HP1: Fetal Movement Monitor



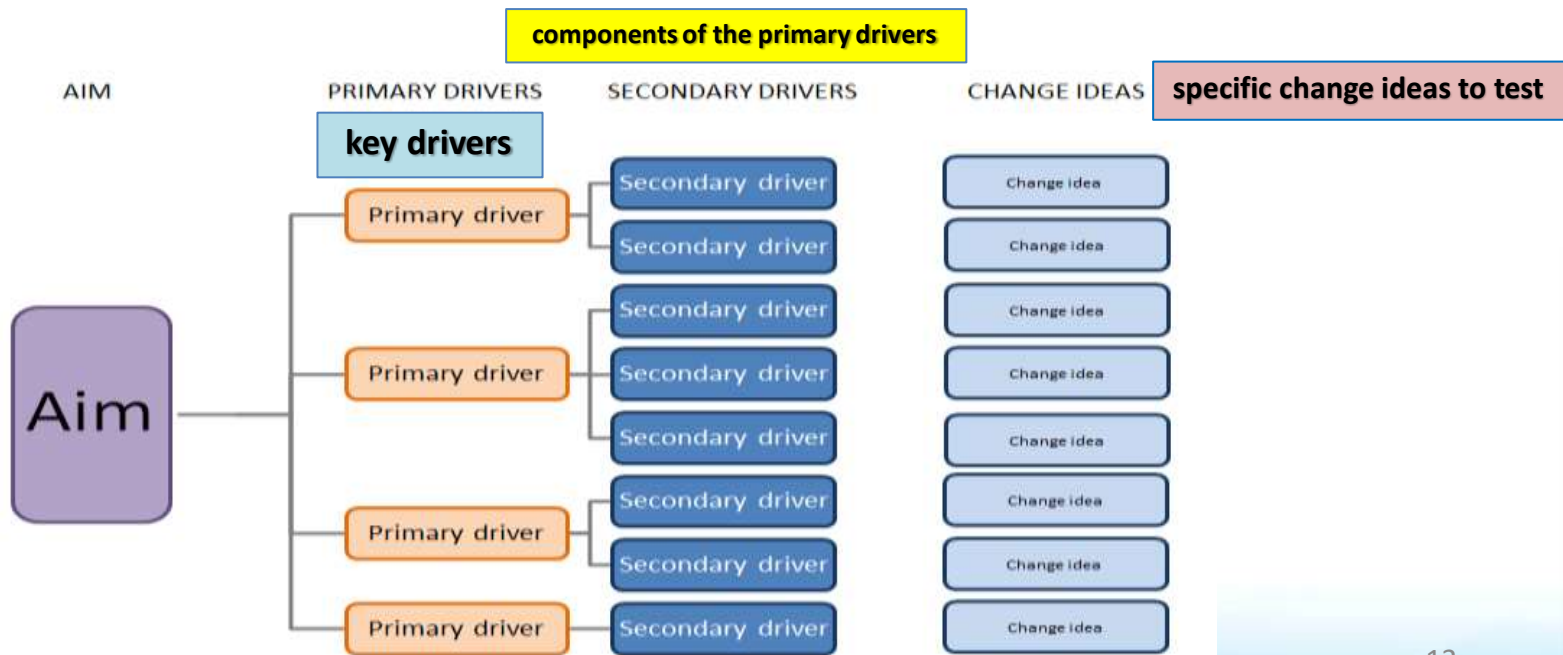
Process Management

Process	Process Requirement	Measure	Process Design

การระบุ process requirement (สิ่งที่คาดหวังจากกระบวนการ) ที่ชัดเจน
ทำให้มีหลักในการออกแบบกระบวนการทำงาน
และใช้กำหนดตัววัดเพื่อให้มั่นใจว่างานส่งผลตามที่ต้องการจะเป็น
การวิเคราะห์ process requirement อาจทำได้โดยใช้ NEWS

Driver Diagram

WHAT: Driver diagram คือแผนภูมิที่แสดงความสัมพันธ์ของปัจจัยที่จะมีผลต่อความสำเร็จตามเป้าหมาย โดยจำแนกเป็นลำดับชั้นจากปัจจัยขับเคลื่อนไปสู่แนวคิดการปรับเปลี่ยน



Driver Diagram

WHY: Driver diagram ทำให้

- เห็นภาพรวมของแนวทางการพัฒนาที่จะเกิดขึ้น
- ช่วยตรวจสอบความสมบูรณ์ของสิ่งที่จะทำ
- ช่วยกำหนดเป้าหมายและตัววัดความก้าวหน้าในการพัฒนาในแต่ละองค์ประกอบ

HOW:

- ใช้ template ในลักษณะของ tree diagram
- ระดมสมองว่าในเรื่องนั้นอะไรเป็น driver เพื่อความสำเร็จตามเป้าหมาย แล้วจัดกลุ่ม/จำแนก เป็น primary & secondary driver (เป็นระดับหลักการ)
- ระดมสมองว่าในแต่ละ driver มีแนวคิดการปรับเปลี่ยนหรือ action อะไรบ้าง

Driver Diagram

- This clear picture of a team's shared view is a useful tool for communicating to a range of stakeholders where a team is testing and working
- เป็นเครื่องมือที่มีประโยชน์สำหรับการสื่อสารทำให้เห็นภาพชัดเจนของมุมมองร่วมของทีมไปยังงานที่ทีมงานกำลังทดสอบระบบและการทำงานอยู่

Driver Diagram

- shows relationship between **aim**(of the project), **primary or key drivers** that contribute **directly to achieving** the aim and **secondary drivers** that are components of the primary drivers, and **specific change ideas** to test for each secondary driver

Driver Diagram

- **Primary drivers** are most important influencers on the aim, and will have only a few (recommend 2 to 5)
- **Secondary drivers** are influencers on (or natural subsections of) primary drivers, and you may have many
- As you identify each driver, establish a way to measure it

Instructions

1. On the left, list the **project aim** (what will be improved, by how much, for whom, and by when) and draw a box around it.
2. To the right of the aim, list a few “**primary drivers**” — the most significant high-level influencers on the aim you’ve identified. Draw a box around each of the primary drivers, and draw lines to connect the primary drivers to the aim.

Instructions

3. To the right of each primary driver, list as **many “secondary drivers”** that influence the primary driver as you can think of. Draw a box around each secondary driver, and draw lines to connect the secondary drivers to the primary drivers.

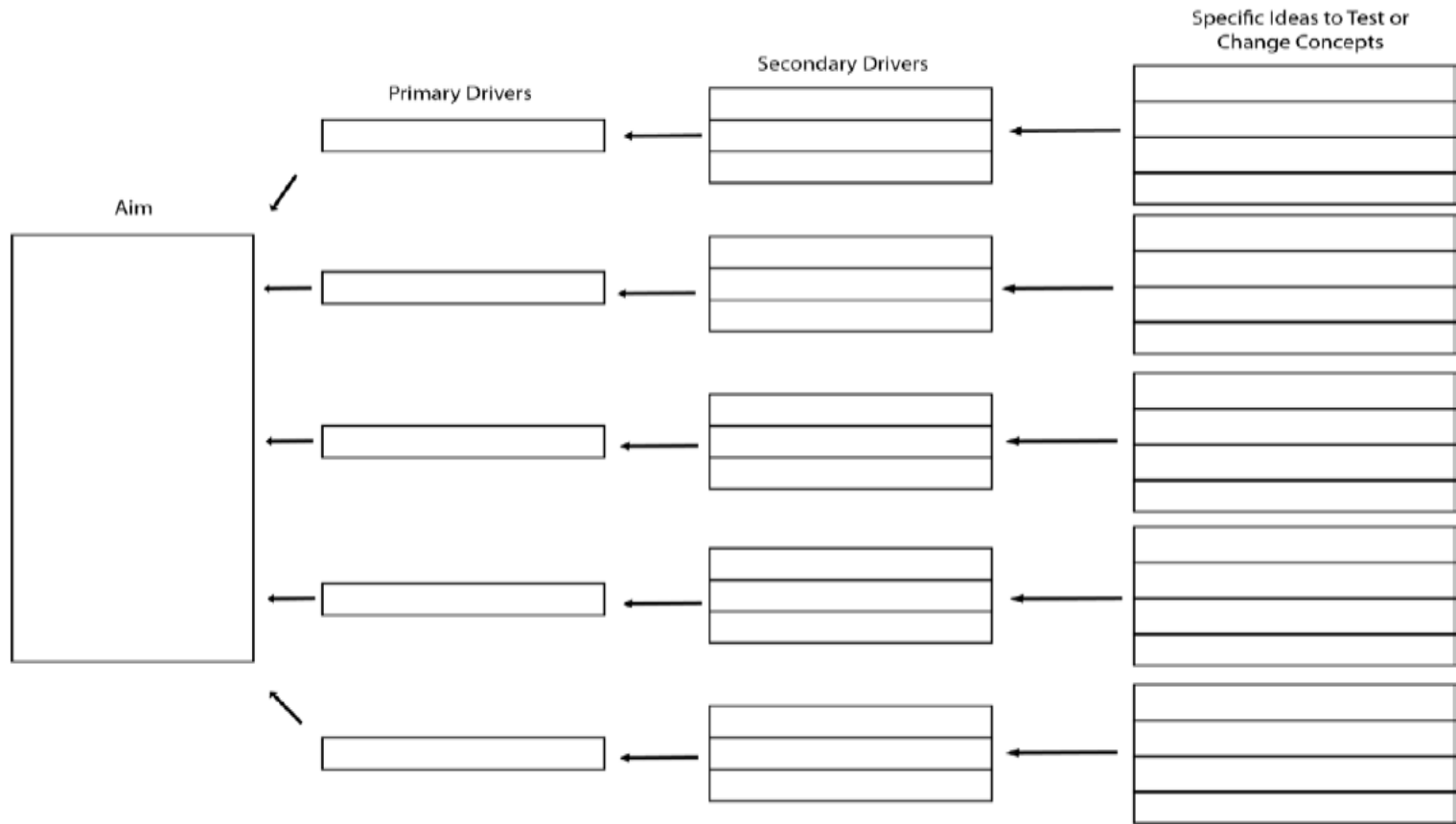
Note: Secondary drivers can connect to more than one primary driver.

Tip: To show strong relationships, use solid lines; to show weaker relationships, use dotted lines.

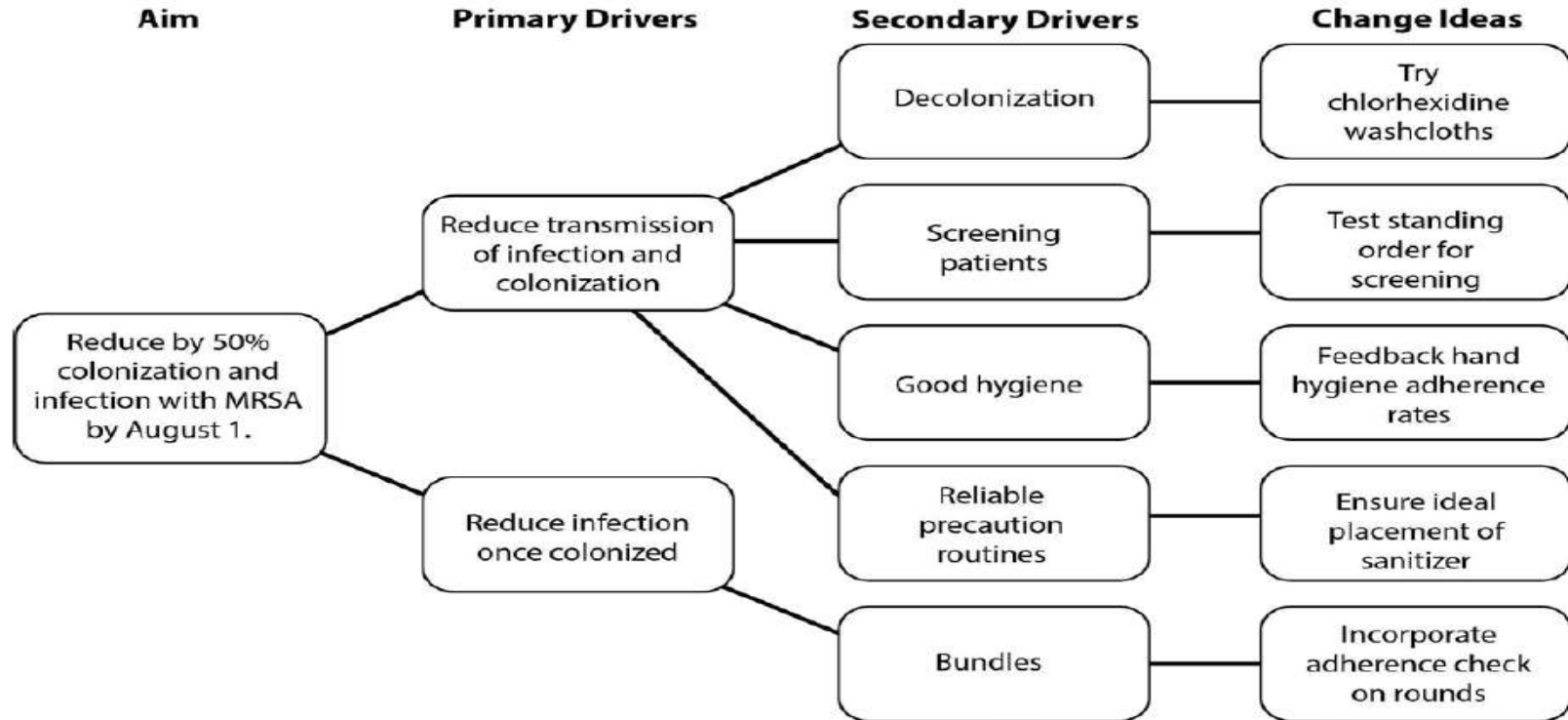
4. To the right of each secondary driver, list **specific change ideas** you will test to influence the secondary driver.

Note: Change ideas can connect to more than one secondary driver.

Template



example



Driver Diagram



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ลดน้ำหนักให้ได้
5 กก. ใน 2 เดือน

Grey rectangular box

Grey rectangular box

Grey rectangular box

Grey rectangular box

Pink rectangular box

Pink rectangular box

Pink rectangular box

Pink rectangular box

Pink rectangular box

Pink rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Yellow rectangular box

Driver Diagram



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เพิ่ม
satisfaction
ของผู้ป่วยในให้
ได้อีก 25%

เพิ่ม mental
health ของ
ผู้ป่วยในเพื่อให้
เพิ่ม satisfaction
ของผู้ป่วยในให้
ได้อีก 25%

S&D Reduction Driver Diagram



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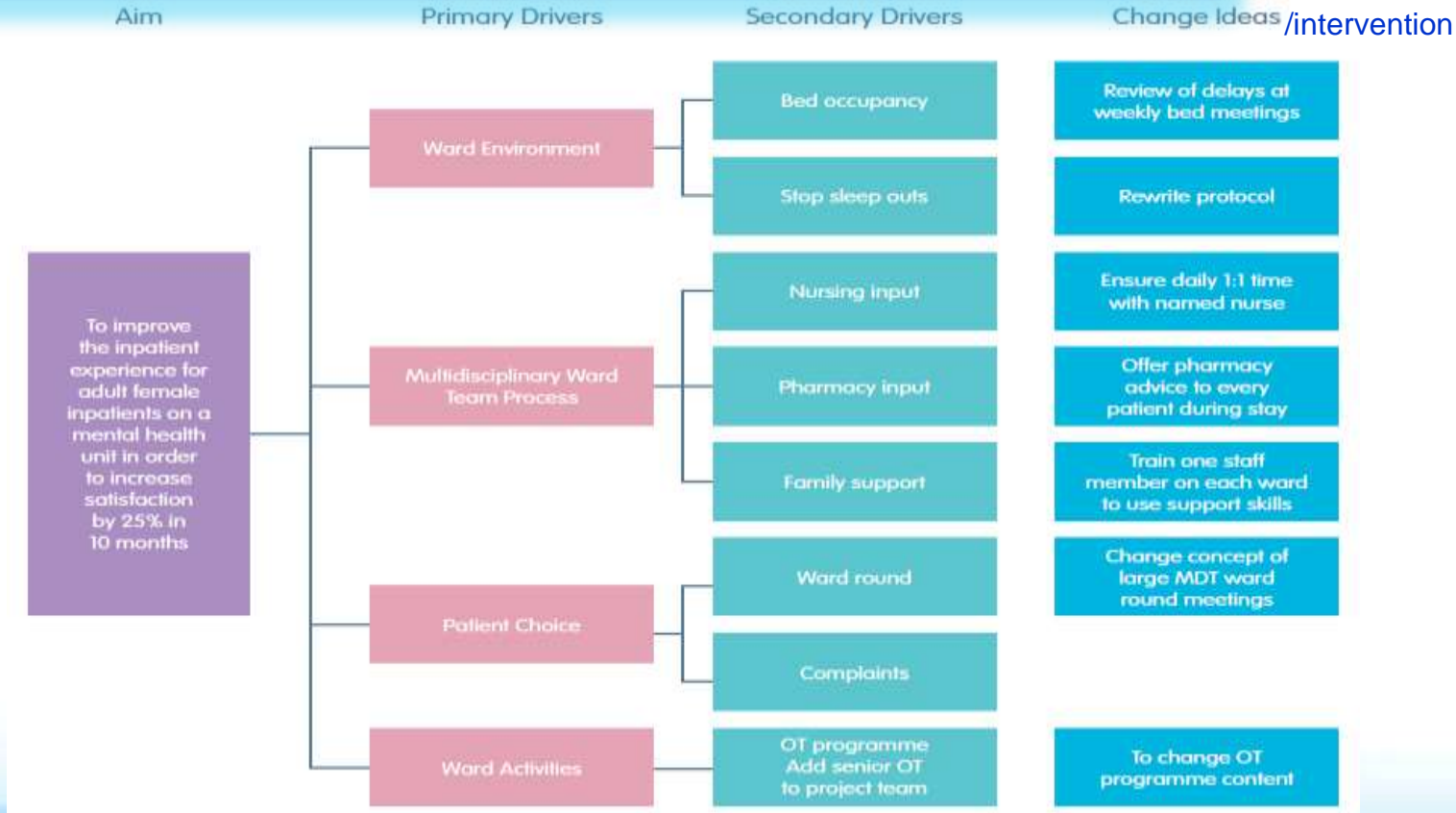
S&D Reduction Driver Diagram



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ตัวอย่าง Driver Diagram



Antibiotic Stewardship Driver Diagram



Timely and appropriate antibiotic utilization in the acute care setting



Decreased incidence of antibiotic-related adverse drug events (ADEs)

Decreased prevalence of antibiotic resistant healthcare-associated pathogens

Decreased incidence of healthcare-associated *C. difficile* infection

Decreased pharmacy cost for antibiotics

Primary Drivers

Timely and appropriate initiation of antibiotics

Appropriate administration and de-escalation

Data monitoring, transparency, and stewardship infrastructure

Availability of expertise at the point of care

Secondary Drivers

- Promptly identify patients who require antibiotics
- Obtain cultures prior to starting antibiotics
- Do not give antibiotics with overlapping activity or combinations not supported by evidence or guidelines
- Determine and verify antibiotic allergies and tailor therapy accordingly
- Consider local antibiotic susceptibility patterns in selecting therapy
- Start treatment promptly
- Specify expected duration of therapy based on evidence and national and hospital guidelines

- Make antibiotics patient is receiving and start dates visible at point of care
- Give antibiotics at the right dose and interval
- Stop or de-escalate therapy promptly based on the culture and sensitivity results
- Reconcile and adjust antibiotics at all transitions and changes in patient's condition
- Monitor for toxicity reliably and adjust agent and dose promptly

- Monitor, feedback, and make visible data regarding antibiotic utilization, antibiotic resistance, ADEs, *C. difficile*, cost, and adherence to the organization's recommended culturing and prescribing practices

- Develop and make available expertise in antibiotic use
- Ensure expertise is available at the point of care

Practice Key Driver Diagram

Key Drivers

Interventions

GLOBAL CGN AIM

We will build a sustainable quality improvement infrastructure within our practice to achieve measurable improvements in ADHD care processes.

Specific Aim

From January 2016 to November 2016, we will achieve measurable improvements in ADHD care processes by implementing key strategies from the AAP guidelines and making key practice changes.

Measures/Goals

- 90% of patients assessed for ADHD will receive Vanderbilt assessments from the parent and teacher within 30 days of assessment initiation
- Physicians have a thorough, documented, initial conversation with the parent about ADHD and give an ADHD Resource Kit to 90% of parents/patients diagnosed with ADHD
- 60% of patients who are prescribed medication will receive follow-up Vanderbilt assessments from the parent and teacher within 30 days of medication initiation
- 80% of patients diagnosed with ADHD are prescribed behavior therapy (where behavior therapy is available)

1. Improved diagnostic accuracy using evidence-based guidelines

2. Reliable systems that ensure effective titration of medications and monitoring of side effects based on parent and teacher feedback

3. Effective follow-up and surveillance for co-morbidities

4. Partnerships with parents and teachers for effective behavior management

5. Use of population health strategies to manage children with ADHD and associated co-morbidities

6. Active participation in a peer to peer learning network (or learning collaborative) with transparent data

- Complete the four registry* training modules
- Determine office flow for ADHD care by establishing roles and responsibilities of the care team
- Collect parent and teacher rating scales as part of the ADHD diagnostic process
- Use a registry to improve reliability in obtaining ADHD rating scales for assessment
- Screen for co-morbidities and consider them in the differential diagnoses

- Deploy tools that enable collaborative clinical, parent and school interactions, such as an online message center and school-home report card
- Educate parents about the use of registries, including data privacy
- Collect parent and teacher rating scales to assess efficacy and side effects of medication after initial prescription and with subsequent medication titration

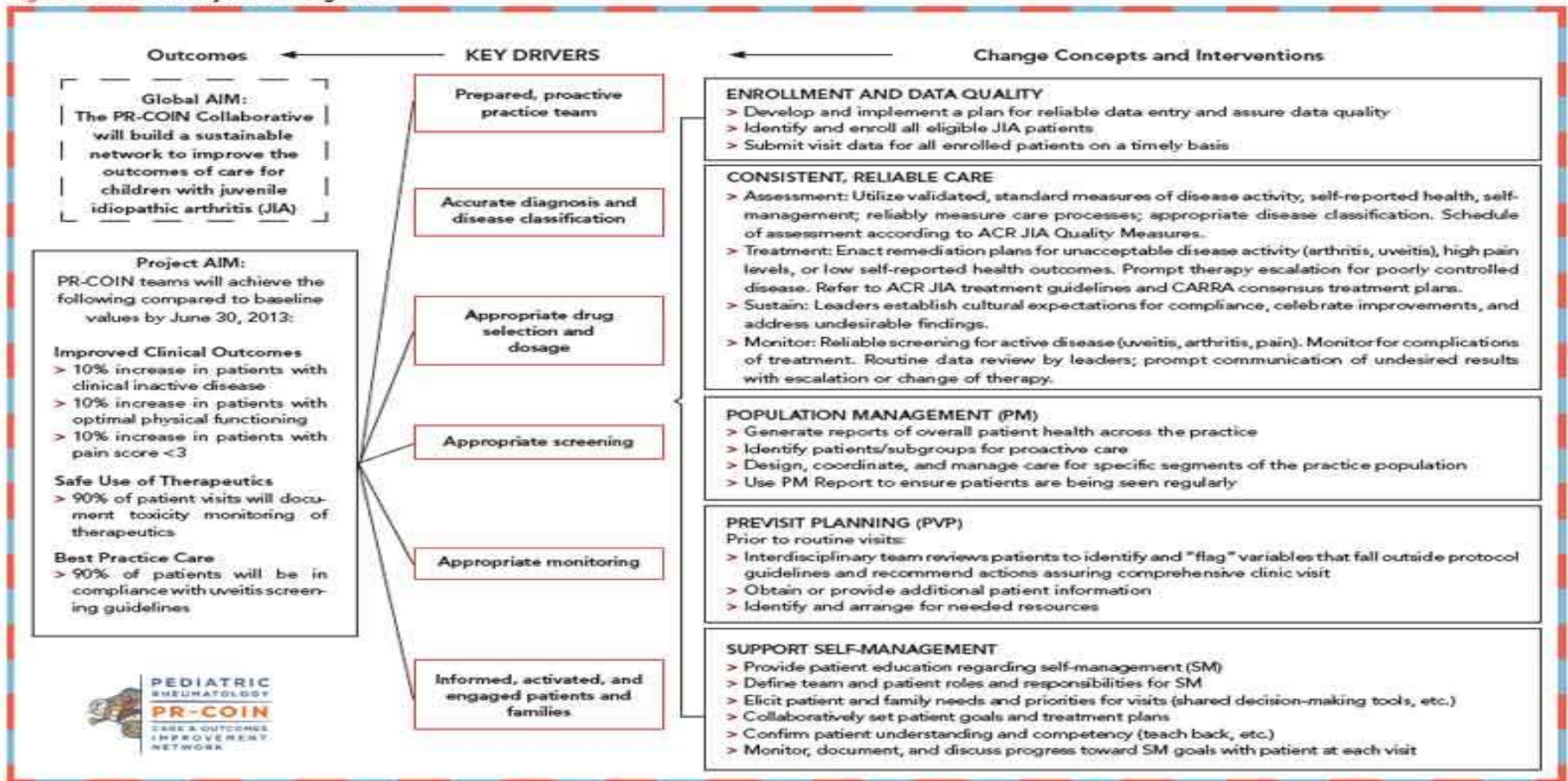
- Establish and follow practice protocol according to published AAP guidelines
- Use a registry to document follow-up care
- Use parent and teacher rating scales to assess medication efficacy and side effects
- Adjust medication if not effective or side effects are excessive
- Assess whether co-morbidities are present if medication is not effective or side effects persist, worsen
- Refer patient to a mental health professional if complex co-morbidities or non-responder to repeated treatment attempts

- Set expectations and therapeutic goals for medication and behavior therapy
- Provide resources to parents (ADHD Resource Kit) that address parent support, teacher/school communication and behavioral health
- Introduce daily school-home report card

- Use a registry to collect data for individual patient care and to track ADHD care quality
- Run billing query to ensure patients identified are entered into the registry
- Document workflows, protocols and job descriptions
- Assign roles and responsibilities for staff/clinicians to manage ADHD population
- Use data to identify areas for improvement in clinical and operational processes

- Attend monthly webinars and 2 face-to-face learning sessions
- Conduct tests of change to address implementation of evidence-based ADHD care
- Share best practices, tools, methods and approaches across the learning network
- Review data regularly amongst practice improvement team and staff to drive improvement

Figure 1: PR-COIN Key Driver Diagram



Improve Severe Sepsis Care and Reduce Sepsis Mortality

Primary Drivers:

Identify severe sepsis early in ED patients

Provide appropriate, reliable and timely care to patients with sepsis/severe sepsis using evidence-based therapies

Coordination of treatment services

Create team process to support sepsis therapies

Secondary Drivers:

Uniform Sepsis Screening/Sepsis Screening tool

Education/communication to frontline staff

Sepsis Algorithm and Standard Order Set

Bundle elements:
Antibiotics within 180 mins **and** after blood cultures
Serum lactate w/in 30 min
Fluid challenge eligibility/delivery

Contingency team for 1st 24 hours of sepsis trigger

Organized team methodology for patient care transitions

Pharmacy

Caregiver communication

Lab

Specific Changes:

??

Desired Outcomes:

Decrease

- Mortality
- Complications
- Costs
- LOS

Improve

- Sepsis/Severe Sepsis Bundle Compliance
- Early recognition of severe sepsis/septic shock
- Recognizable, reliable language standards for sepsis care

Driver Diagram

The Problem:

According to Anti-Microbial Stewardship (AMS) pharmacist, Rehab Unit has a high rate of unnecessary commencement of antibiotics for Urinary Tract Infections (UTI).

Aim Statement

Within 6 months, increase rate of appropriate antibiotic use for UTI to 90%.

Outcome Measure:

- How much? To 90%
- By when? 6 months

Team Members:

- Team Leaders – AMS pharmacist + CNE
- NUM of unit
- Snr Registrar
- JMO
- Registrar
- Snr Clinician
- Clinical microbiologist / ID MO
- Ward pharmacist
- Consumer

Sponsor: Unit Director

Primary Drivers & Relationship Arrows

Improve the accuracy of attitudes and beliefs about appropriate antibiotic commencement among staff

Process Measure:

- How much? 50% of staff have a changed attitudes and beliefs
- By when? 3 months

Improve coordination of the multidisciplinary teams working in the unit

Process Measure:

- How much? 100% of teams in the unit
- By when? 6 months

Improve the integrity and completeness of the diagnostic process

Process Measure:

- How much? 50% improvement in diagnostic accuracy for UTI
- By when? 3 months

Increase rate of appropriate testing and investigations for UTI

Process Measure:

- How much? Increase rate by 70%
- By when? 6 months

Improve understanding and interpreting of investigations relating to UTI

Process Measure:

- How much? 70% of staff demonstrate improved understanding
- By when? 6 months

Secondary Drivers & Relationship Arrows

Eliminate myths associated with UTIs in older patient populations

Deconstruct myths that antibiotics are harmless medicines

Increase the number of rounds per week that is attended by both ward pharmacist and medical team

Increase availability of clinical microbiologist for advice

Increase time spent on differential diagnosis prior to prescribing ABx

Increase awareness of potential alternative diagnoses for UTI signs or symptoms

Improve perception regarding the usefulness, cost and time burden associated with UTI investigations

Remove barriers that preclude appropriate testing for UTI diagnosis

Increase education on how to interpret UA results

Improve language used and recommendations provided on microbiology reports

Change Ideas

Clinical microbiologist and AMS pharmacist to provide myth busting in-services

Ward pharmacist trained in academic detailing regarding antibiotic use

Run poster campaign on truth vs. myths in antibiotics

Ward pharmacist to be paged by medical team at beginning of ward round

3 ward rounds a week are pre-booked in MDT's calendars

Clinical microbiologist to offer dedicated times to provide advice

Clinical microbiologist is provided with on-call pager for unit

Allocate time for differential diagnosing in rounding checklist

New policy to institute documentation of differential diagnosis in healthcare record

Implement CQC's decision support tool for urine specimen collection

Preformat lab order form

Provide nursing and medicine staff with clinical skill training

Clinical microbiology team to review and update micro reporting templates

Clinical microbiology team to provide cheat sheet on how to interpret urine results

Priority PDSA

Impact: High
Implementation: Easy



Impact: High
Implementation: Hard

Impact: Low
Implementation: Easy

Impact: Low
Implementation: Easy

Impact: Low
Implementation: Easy

Impact: High
Implementation: Easy



Impact: High
Implementation: Hard

Impact: High
Implementation: Easy



Impact: Low
Implementation: Easy

Impact: High
Implementation: Easy



Impact: High
Implementation: Easy

Impact: High
Implementation: Hard

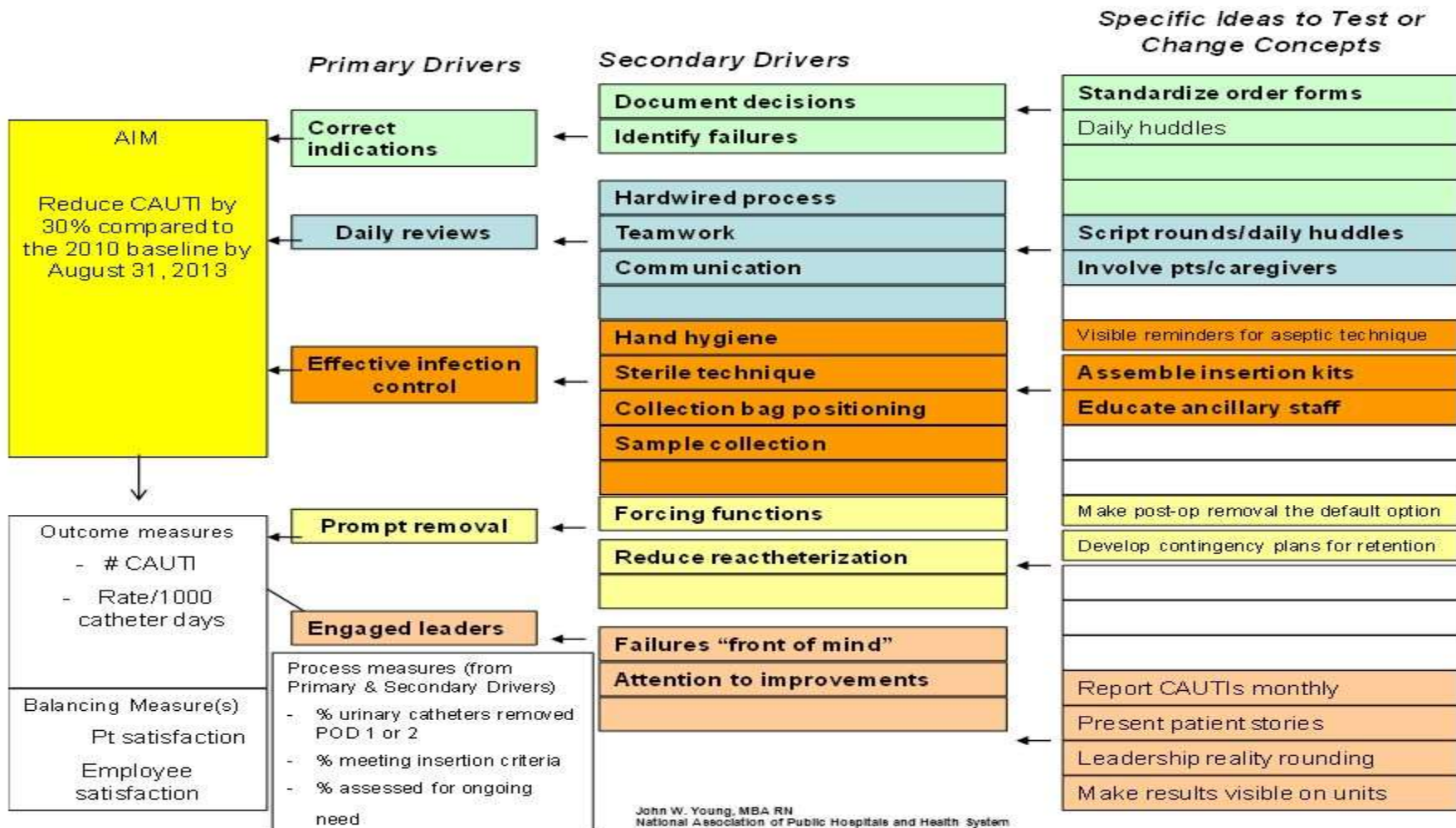
Impact: High
Implementation: Easy



Impact: High
Implementation: Easy



Driver Diagram



Driver Diagram for Reducing In-Patient Falls

Aim

Reduce Inpatient Falls on 4C and 6W
 Reduce falls to <3.5/1000 patient days and reduce moderate or higher harm from falls to <0.1/1000 patient days

Outcome Measures

- Patient days between falls
- Patient days between a harmful fall
- The rate of falls per 1000 patient days
- The rate of harmful falls per 1000 patient days
- \$ revenue loss avoided due to fall reduction

Primary Drivers

Reliable Assessment

Process Measure
 % Pts with falls risk assessment every 8 hrs.

Reliable Care

Process Measure
 % of patients with evidence of hourly rounding

Patient and Family Centered Care

Process Measure: % Pts who can verbalize their role in fall prevention

Patient Condition

Secondary Drivers

Good/reliable tools for assessment

Staff trained and know how to use assessment tools

Timely assessment

Care plans are easy to use

Care plans regularly updated

Appropriate level of monitoring/supervision of patients

Willingness of patient and carers to cooperate

Physical strength/stability

Mental health

Frailty

Patient understanding of their own abilities

Patient understanding of their own abilities

Specific Changes to Test

Staff awareness/education

Falls noticed board/story board

Fallsafe Care Bundle

Use of pressure pads

cctv or mirrors in corridors

Use of sitters for some patients

Slipper socks

New signs on doors easier to read

a

Aim

Key drivers

How will we know a change is an improvement?

Examples of potential changes nurseries can make

Increase to 100% the number of infants who are systematically assessed for risk of severe jaundice before discharge from newborn nursery

Clinical risk factors for severe hyperbilirubinemia are assessed with particular emphasis on gestational age and breastfeeding

May also include:

Hour-specific bilirubin level documented on chart and algorithm based on age in hours, gestational age and clinical condition used for risk assessment and management

Discharge exam documents presence or absence of jaundice

Infants discharged less than 72 h of age have a documented plan that includes follow-up by a licensed health care provider within 2 days of discharge **OR** for whom a medical exception to this plan is documented in chart

Infants discharged greater than 72 h of age have a documented plan that includes follow-up by a licensed health care provider

1. Standardize protocol for assessment (use algorithm and risk factors from AAP guideline)
2. Develop chart form
3. Use standing orders (e.g. bili at 24 h or if jaundice noted by nurse)
4. Incorporate rules into EHR
5. Post assessment information in nursery
6. Consider various modalities: posters in nursery, pocket cards

Include on EHR or discharge form
Include as part of assessment protocol

1. Identify medical home for each infant
2. Standardize policy regarding discharge
3. Monitor discharge plans for appropriateness and provide feedback to clinicians
4. Make appointment with primary care provider for family
5. Provide name and no. of primary care provider for family to call
6. Require that family have appointment for infant before discharge
7. Develop alternatives to primary care follow-up (e.g. weekend hospital clinic, home visitation).
8. Monitor visit interval; as needed, send letter to PCPs re: appropriate f/u interval

Driver Diagram Template

The Problem:

XXXX

SMART Aim:

Outcome Measure:

- How much:
- By when:

Outcome Measure:

- How much:
- By when:

Team Members:

- Project Sponsor/s -
- Team Leader -
- Consumer -
- QI Advisor -
- Xx
- Xx
- Xx
- Xx
- Xx

NB: Can Hyperlink measures to Graphs in Spread sheets

Primary Drivers

Process Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Balancing Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Process Measure:

- How much:
- By when:

Secondary Drivers

Change Idea

Priority Change Idea

Impact: High Low
Implementation: Easy Hard



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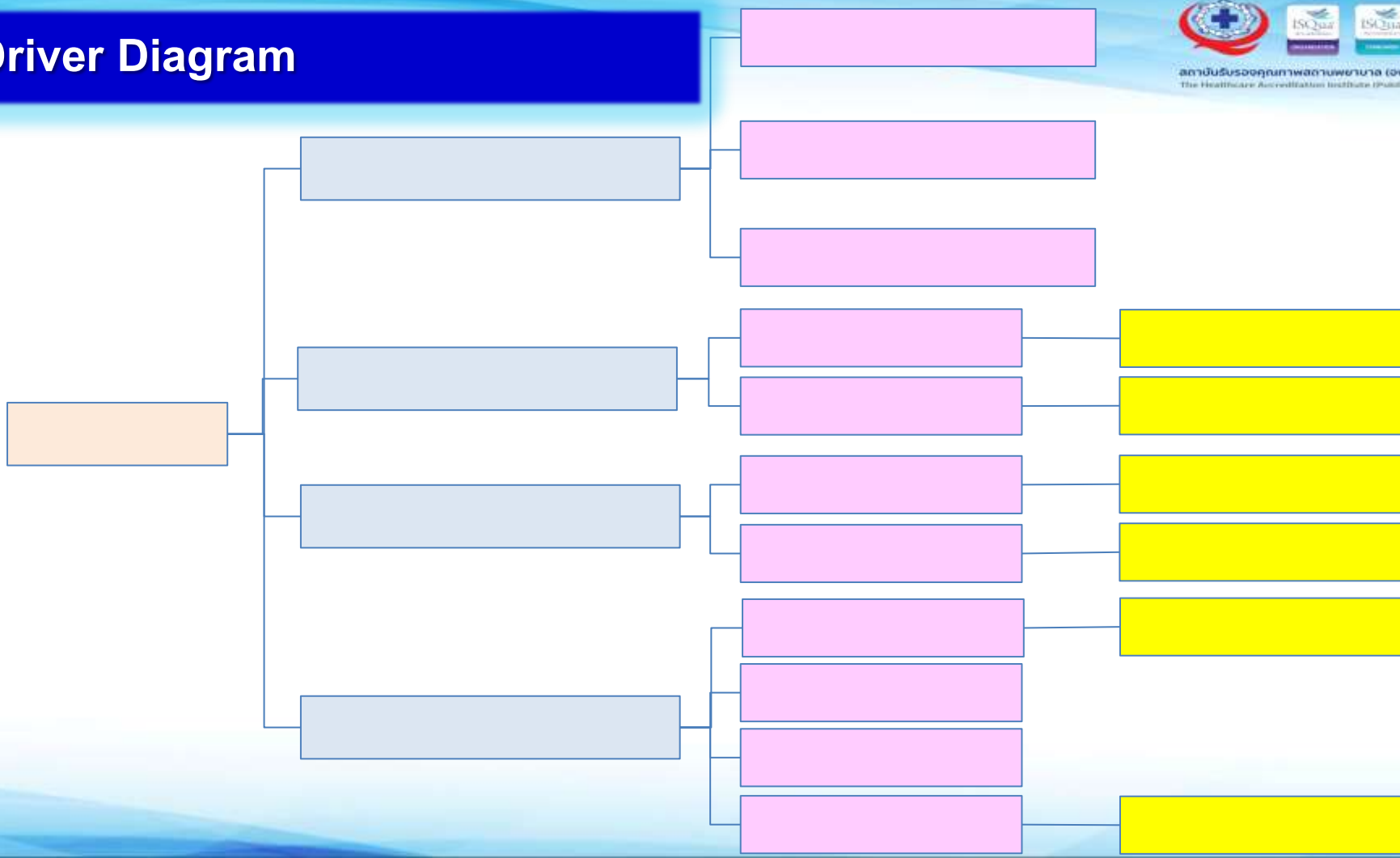
Impact: High Low
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Driver Diagram



สถาบันรับรองคุณภาพสถานพยาบาล (องค์การมหาชน)
The Healthcare Accreditation Institute (Public Organization)



ศึกษาตัวอย่างผลงานพัฒนาคุณภาพ



สถาบันรับรองคุณภาพสถานพยาบาล (องค์การมหาชน)
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- ใช้ Driver Diagram วิเคราะห์ผลงานที่เป็นกรณีศึกษา (Aim-Driver-Intervention-KPI)
- ศึกษาการใช้เครื่องมือพัฒนาคุณภาพต่าง ๆ ว่ามีประโยชน์ในการวิเคราะห์ วางแผน และนำเสนอ อย่างไร
- ทดลองเขียนสรุปตาม PPT Template
- ถ้านำผลงานนี้ไปใช้ขยายผลในหน่วยงานของท่าน จะต้องทำอะไบบ้าง