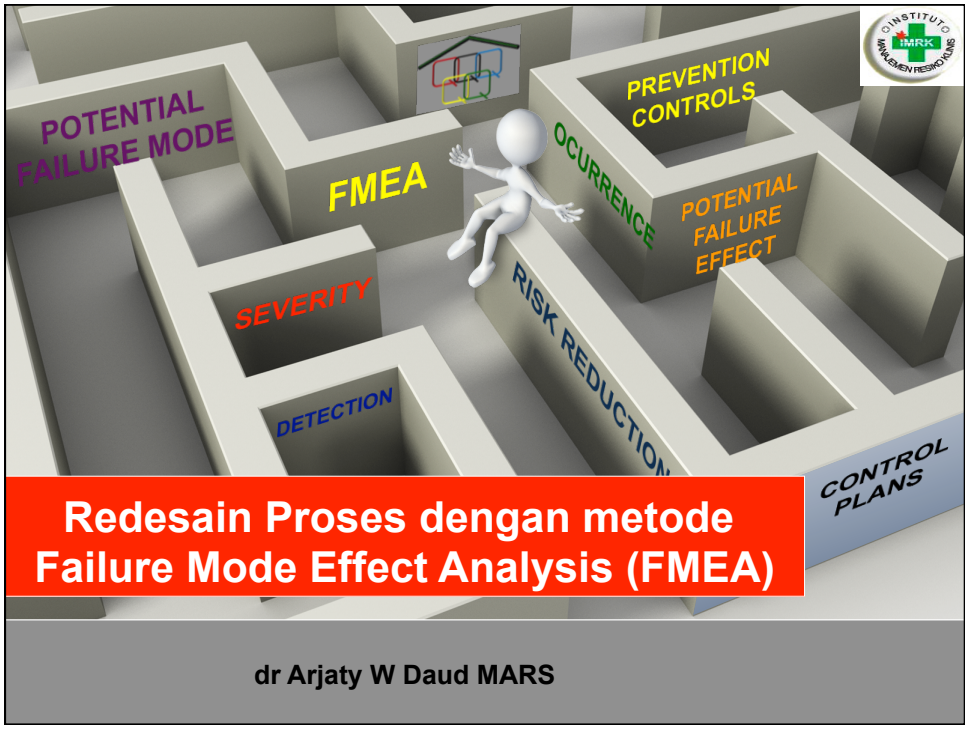


Redesain Proses dengan metode Failure Mode Effect Analysis (FMEA)

dr Arjaty W Daud MARS

Perspektif Sejarah

- Hingga saat ini, pencegahan kesalahan medis belum menjadi fokus utama bidang kedokteran
- Sebagian besar sistem pelayanan kesehatan **tidak didesain untuk mencegah atau mencegah / mengatasi "error"**

REDESAIN PROSES DENGAN ANALISA PROAKTIF (FMEA)

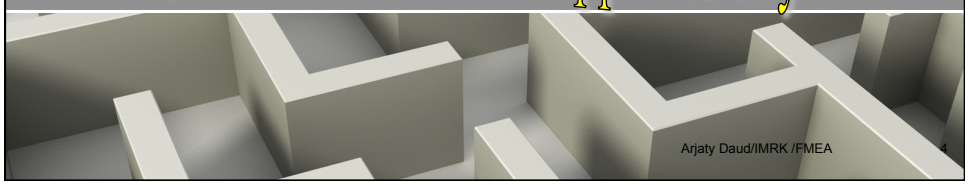
Patient Safety Timeline in U.S

- 1999
  - IOM – To Err Is Human
- 2000
  - Congressional Hearings
- 2001
  - JCAHO Patient Safety Standards
- 2002
  - Proactive Risk Assessment (HFMEA)
- 2003
  - JCAHO Patient Safety Goals
- 2004
  - JCAHO Patient Safety Goals
  - Universal Protocol

What is FMEA ?

- Adalah metode perbaikan kinerja dgn mengidentifikasi dan **mencegah Potensi Kegagalan sebelum terjadi**. Hal tersebut didesain untuk meningkatkan keselamatan pasien.
- Adalah **Proses Proaktif**, dimana kesalahan dpt dicegah & diprediksi.
- Mengantisipasi kesalahan akan meminimalkan dampak buruk

System failures can happen to anyone!



FAILURE MODE AND EFFECTS ANALYSIS / ANALISIS MODUS KEGAGALAN DAN DAMPAK

Analisis (A)

Penyelidikan secara detail suatu proses

Mode (M)

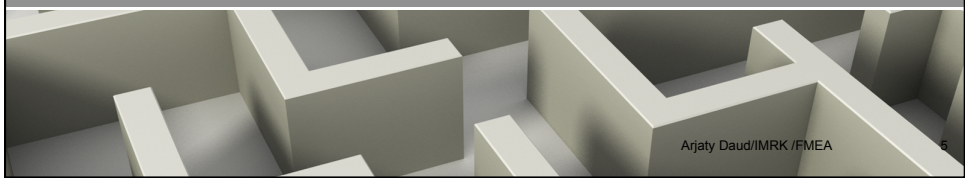
Cara atau Perilaku yang dapat menimbulkan kegagalan

Kegagalan (K)

Saat sistem atau bagian dari sistem tidak sesuai yang diharapkan baik disengaja maupun tidak

Dampak (D)

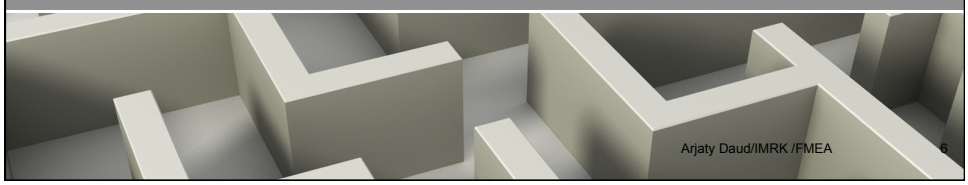
Dampak atau Konsekuensi Modus Kegagalan



FMEA

FMEA bisa dilakukan pada :

- Proses yang telah dilakukan saat ini
- Proses yang belum dilakukan atau baru akan dilakukan mis :
  - Implementasi Elektronik Rekam Medis
  - Pembelian alat baru
  - Redesain ruan, Kamar Operasi, dll



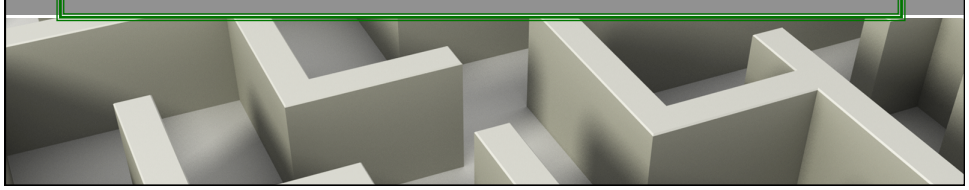
FMEA vs HFMEA

1. Pilih Proses Berisiko tinggi dan bentuk Tim
2. Diagram / gambarkan Alur Proses & Brainstorming Modus Kegagalan
3. Menentukan Dampak / Effects
4. Prioritas Modus Kegagalan
5. Identifikasi Penyebab / Causes
6. Redesain Proses
7. Analisa dan Uji coba Proses
8. Implementasi & Monitor Proses baru

1. Tetapkan Proses
2. Bentuk Tim
3. Gambarkan Alur Proses
4. Buat Hazard Analysis
5. Tindakan dan Pengukuran Outcome

LANGKAH- LANGKAH FMEA

1. Pilih Proses Berisiko tinggi dan bentuk Tim
2. Diagram / gambarkan Alur Proses & Brainstorming Modus Kegagalan / Failure Mode
3. Menentukan Dampak / Effects
4. Prioritas Modus Kegagalan
5. Identifikasi Penyebab / Causes
6. Redesain Proses
7. Analisa dan Uji coba Proses
8. Implementasi & Monitor Proses baru



Langkah 1 : PILIH PROSES BERISIKO TINGGI

Proses baru

Misalnya : proses mengoperasikan alat infus baru untuk pasien rawat jalan

Proses yang sedang berjalan

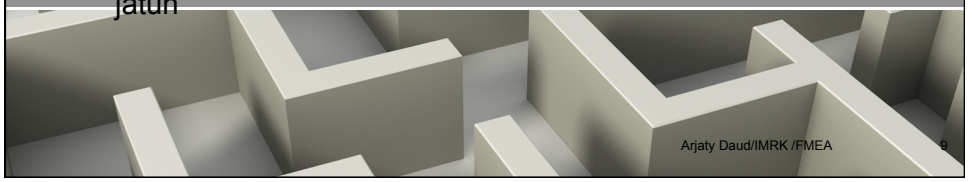
MIsalnya : proses pengadaan dan penyimpanan gas medis di rumah sakit

Proses dalam klinis

Misalnya : proses pemeriksaan darah di laboratorium

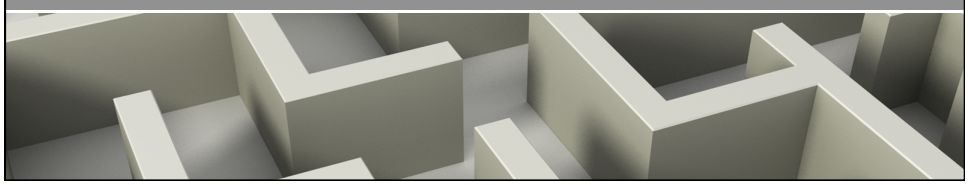
Proses non-klinis

Misalnya : proses mengkomunikasikan hasil pemeriksaan (lab) kepada dokter atau proses Identifikasi pasien yang berisiko jatuh



Memilih Proses FMEA

- Sentinel Event Alert yang dipublikasikan JCAHO
  - Infant Abduction
  - Wrong site surgery
  - Delay Treatment
- Sasaran Keselamatan Pasien JCAHO
- Proses berisiko tinggi di RS

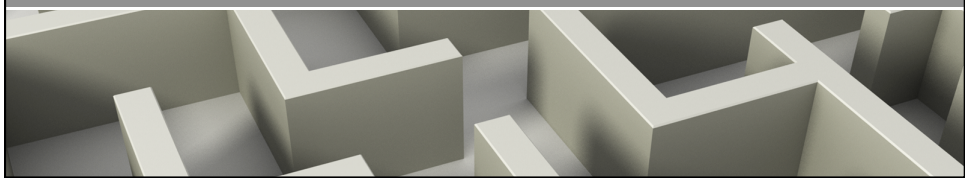


Salah satu kriteria pemilihan Proses adalah :

Proses potensial memberikan Dampak yang tidak diharapkan pada pasien.

Pertanyaan untuk memilih Proses :

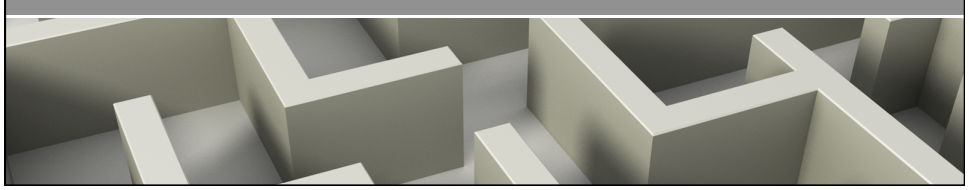
1. Proses pelayanan apa saja yang dapat berdampak *(affect)* pada keselamatan pasien ?
2. Proses pelayanan apa yang potensial tinggi volume ?
3. Proses pelayanan apa saja yang banyak hubungan / keterkaitan dalam pelayanan kepada pasien? Dan jika terjadi masalah, sering memberikan dampak dalam proses2 tsb.



- Ruang lingkup Proses yang akan dianalisa perlu dibatasi agar Tim lebih fokus memberikan ide.
- Contoh :

  Proses pemberian obat parenteral pasien rawat jalan

  - Proses : 6
  - Sub proses : 67
  - Potensial Modus Kegagalan : 217



Ketika membuat Alur Proses, Tim harus menjawab beberapa pertanyaan :

1. Apa langkah-langkah dalam proses ?
   - Jika proses sudah ada, bagaimana langkah2 yang sudah dikerjakan?
   - Jika proses belum ada, bagaimana seharusnya dikerjakan ?
2. Bagaimana hubungan antar langkah dalam proses ?
   (mis. Berurutan atau simultan)
3. Bagaimana proses berhubungan dengan proses yang lain?
4. Apa tools yang digunakan dalam membuat alur / diagram proses?

Membentuk Tim

- Multidisiplin
- Tidak lebih dari 10 orang (idealnya 4 – 8 orang)
- Memiliki **pengetahuan tentang proses yg akan dianalisis** (subject matter / process expert) & komitmen pada "performance improvement"
- Mewakili bidang yg akan "dianalisis" dan unit yang akan "terkena" perubahan
- Mengikutkan orang yang tidak terlibat dlm proses tapi memiliki **"analytical skill"**
- Setidaknya ada satu pembuat keputusan (leader)
- Satu orang yg memiliki **"critical thinking"** saat perubahan akan dilaksanakan

TIME LINE AND TEAM ACTIVITIES

Pra meeting	Identifikasi topik dan beri motivasi pada tim
1st team meeting	Gambarkan proses, identifikasi subproses, verifikasi ruang lingkup
2rd team meeting	Kunjungi unit kerja untuk observasi proses, verifikasi semua langkah proses & subproses apakah sudah benar (Langkah 3)
3 rd team meeting	Brainstorming modus kegagalan, tugaskan anggota tim untuk berdiskusi dengan peetugas pada unit yang terlibat dalam proses (Langkah 3)
4rd team meeting	Identifikasi penyebab modus kegagalan, tugaskan anggota tim untuk berdiskusi dengan petugas pada unit yang terlibat dalam proses untuk memperoleh masukan tambahan (Langkah 3)
5th team meeting	Tuangkan modus kegagalan dan penyebabnya pada lembar kerja HFMEA (langkah 3). Lakukan analisa hazard (langkah4) Identifikasi tindakan perbaikan dan tindaklanjuti tanggungjawabnya (Langkah 5)
6th,7th , 8th….η team meeting plus 1	Tugaskan anggota tim menindaklanjuti PIC untuk setiap tindakan perbaikan
η team meeting plus 2	Tindakan perbaikan berbasis umpan balik
η team meeting plus 3	Uji perubahan yang diajukan
η team meeting plus 4	Pertemuan dengan Pimpinan untuk persetujuan semua tindakan perbaikan
Postteam meeting	Konsultan menindaklanjuti sampai semua tindakan telah lengkap

LANGKAH 2 : BUAT ALUR PROSES & BRAINSTORMING MODUS KEGAGALAN

1. Alur Proses

Buat Alur Proses, bila perlu dibuat Subproses dan buat masing-masing Diagramnya.

Bila **Proses Baru:** Bagaimana seharusnya

Bila **Proses Lama**: Bagaimana saat ini

Buat Flowchart untuk diagram proses

2. Modus Kegagalan

""Perilaku yang dapat mengakibatkan kegagalan"

- Tanyakan "bagaimana bisa gagal?"
- Identifikasi semua modus kegagalan
  - -beberapa langkah dapat tidak memiliki modus kegagalan
  - -beberapa langkah dapat memiliki banyak modus kegagalan

Starting Point

PROCESS STEP

STEP 1

STEP 2

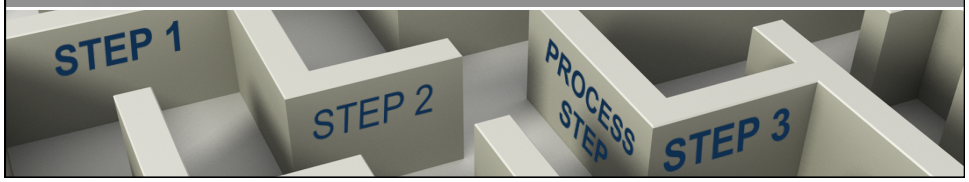
STEP 3

Establish Process Steps for Process Flow

Step 1: _____

Step 2: _____

Step 3: _____



What is the process for delivering medications to the unit?

Physician examines patient

Physician writes medication order

Medication order pulled from chart

Order transcribed into Medication Administration Record (MAR)

Medication request delivered to pharmacy

Medication delivered to unit

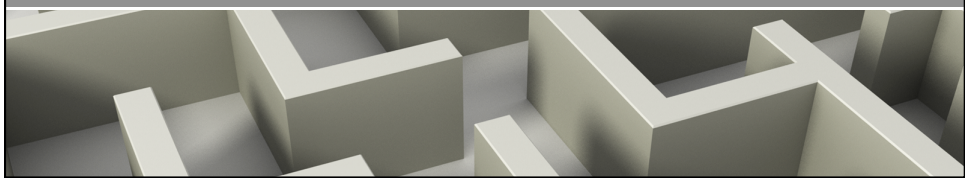
Flow Charting

- **Five to eight steps process**
- **Stay high level**
- **Be as linear as possible. Avoid "If X, then Y" splits**
- **Each step describes something that is being done.**

18

Why diagram the process?

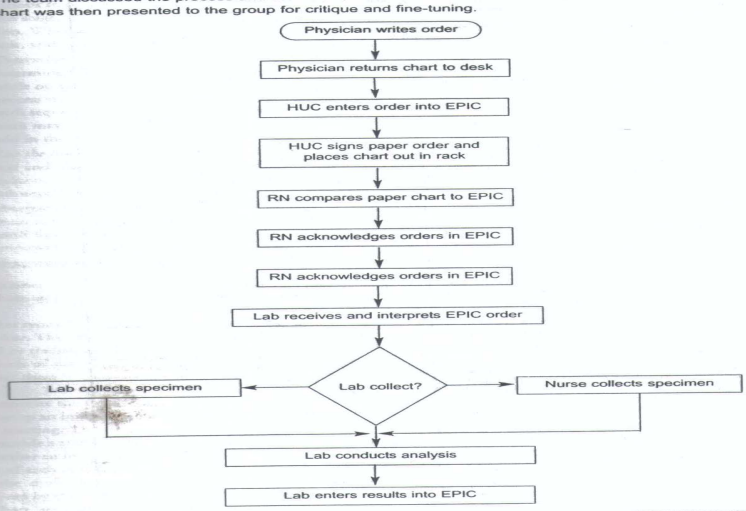
- Diagrams clarify things between members
- Narrows the topic – goes from broad topic
  e.g. narcotic use process to narrow topic
  e.g. morphine removed from narcotic drawer



Case Study **Conducting FMEA on the Neonatal Intensive Care Unit Laboratory Test Ordering Process at Miami Valley Hospital**

Step 3: Diagram the process and brainstorm potential failure modes.

The team discussed the process and then one member created a flowchart based on that information. The flowchart was then presented to the group for critique and fine-tuning.



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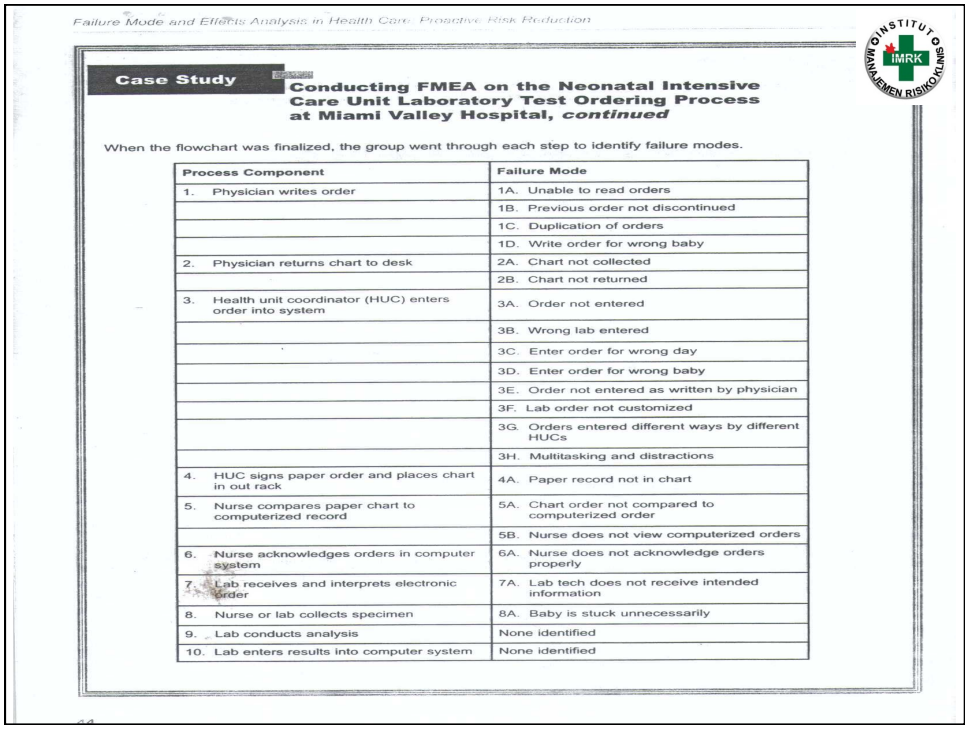

Case Study **Conducting FMEA on the Neonatal Intensive Care Unit Laboratory Test Ordering Process at Miami Valley Hospital, *continued***

When the flowchart was finalized, the group went through each step to identify failure modes.

Process Component	Failure Mode
1. Physician writes order	1A. Unable to read orders
	1B. Previous order not discontinued
	1C. Duplication of orders
	1D. Write order for wrong baby
2. Physician returns chart to desk	2A. Chart not collected
	2B. Chart not returned
3. Health unit coordinator (HUC) enters order into system	3A. Order not entered
	3B. Wrong lab entered
	3C. Enter order for wrong day
	3D. Enter order for wrong baby
	3E. Order not entered as written by physician
	3F. Lab order not customized
	3G. Orders entered different ways by different HUCs
	3H. Multitasking and distractions
4. HUC signs paper order and places chart in out rack	4A. Paper record not in chart
5. Nurse compares paper chart to computerized record	5A. Chart order not compared to computerized order
	5B. Nurse does not view computerized orders
6. Nurse acknowledges orders in computer system	6A. Nurse does not acknowledge orders properly
7. Lab receives and interprets electronic order	7A. Lab tech does not receive intended information
8. Nurse or lab collects specimen	8A. Baby is stuck unnecessarily
9. Lab conducts analysis	None identified
10. Lab enters results into computer system	None identified

Process Step / Input	Potential Failure Mode	Potential Failure Effects	SEVERITY	Potential Causes	OCCURRENCE	Current Controls	DETECTION	RPN	Actions Recommended	
What is the process step and Input under investiga-tion?	In what ways does the Key Input go wrong?	What is the impact on the Key Output Variables (Customer Requirements)?		What causes the Key Input to go wrong?		What are the existing controls and procedures (inspection and test) that prevent either the cause or the Failure Mode?			What are the actions for reducing the occurrence of the cause, or improving detection?	
Incoming RN /Tech in	Information not in IDX for report	incomplete information	8	Lack of input/human error	5	none	2	80	Define in IDX if old info	
	Information not up to date	inaccurate (not timely) information	8	Delay in documenting	5	verbal verification	5	##	printed report indicate if current	
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Clarify/verify information	outgoing and incoming don't do	verbal clarification not complete	5	busy with patient	5	30 minutes at shift change	2	50		
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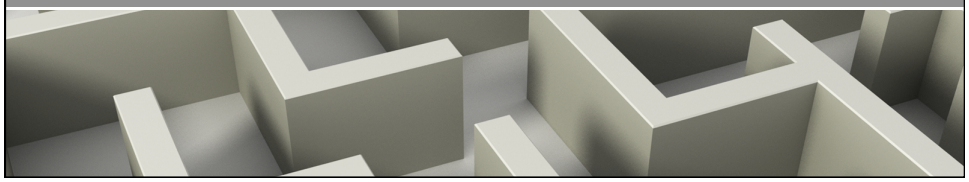
Limit interruption	scripting not used	interruptions allowed	5	not viewed as important	8	none	2	80		

Failure Modes, Effects, and Causes

Failure Mode

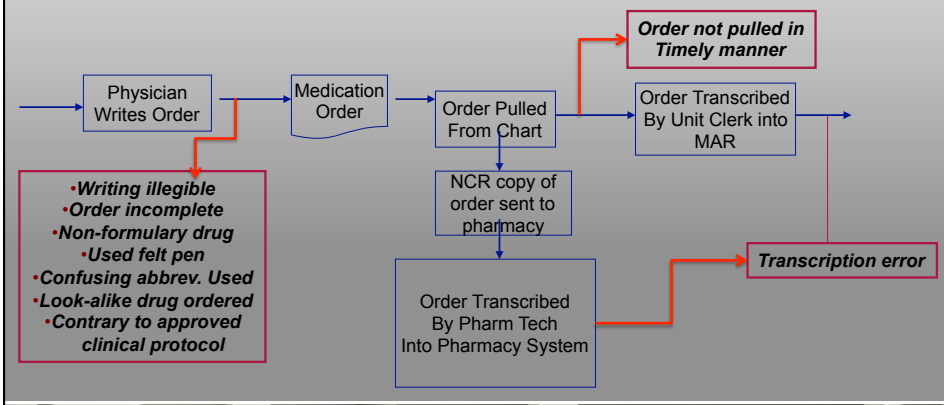
What we observe that tells us a failure may be occurring

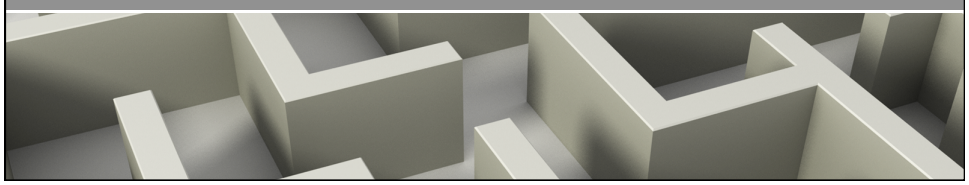
- A *failure mode* is usually:
  - A warning (*check engine* light)
  - A symptom (fever is a failure mode for infection)
- A failure mode is not the cause of the failure.



Brainstorm Potential Failure Modes, Causes, and Effects

Determine each step that can "fail" and how it can "fail"





Process Step / Input	Potential Failure Mode	Potential Failure Effects	SEVERITY	Potential Causes	OCCURRENCE	Current Controls	DETECTION	RPN	Actions Recommended	F
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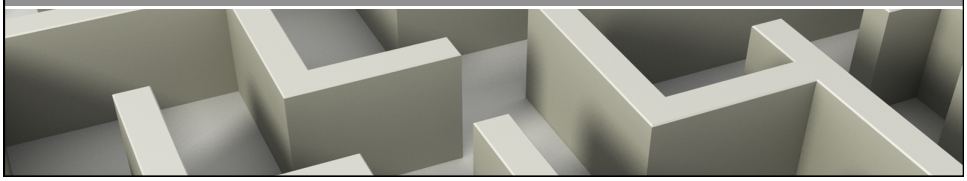
LANGKAH 3 MENENTUKAN DAMPAK

Menentukan kemungkinan Dampak jika kegagalan tersebut terjadi dengan Brainstorming / Diskusi diantara Anggota Tim



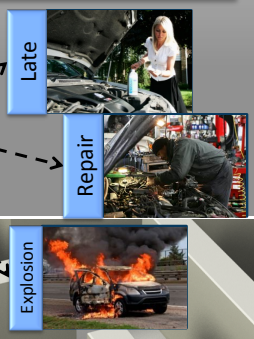
Failure Modes, Effects, and Causes

Failure Mode

Definition: What we observe that tells us a failure may be occurring

Potential *Effects* of Failure

Definition: How might this failure impact our customer?



- **The *effect* describes the impact of the failure that is indicated by the failure mode.**

Process Step / Input	Potential Failure Mode	Potential Failure Effects	SEVERITY	Potential Causes	OCCURRENCE	Current Controls	DETECTION	RPN	Actions Recommended	
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LANGKAH 5
IDENTIFIKASI PENYEBAB MODUS KEGAGALAN

Mencari kemungkinan penyebab Modus Kegagalan

Pronsipnya adalah Kegagalan dimasa datang bisa dicegah.
Kalaupun tidak dapat dicegah, pasien harus di proteksi terhadap dampak kegagalan tsb atau Dampak di mitigasi.

Failure Modes, Effects, and Causes

Failure Mode	Potential *Effects* of Failure	Potential *Causes* of Failure
Definition: What we observe that tells us a failure may be occurring	*Definition: How might this failure impact our customer?*	*Definition: The element that creates/allows the failure*

Late

Repair

Explosion

- Loose oil cap
- Faulty warning light
- Low oil level
- Blocked air-filter has caused the engine to seize
- Faulty warning light
- Dirt in the fuel line is choking the engine
- Filled gas tank with Diesel fuel
- Others….

Process Step / Input	Potential Failure Mode	Potential Failure Effects	SEVERITY	Potential Causes	OCCURRENCE	Current Controls	DETECTION	RPN	Actions Recommended	
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	IDX down/can't print report	information not available prior to	2	Scheduled or unscheduled	2	paper process	2	8		
Clarify/verify information	outgoing and incoming don't do	verbal clarification not complete	5	busy with patient	5	30 minutes at shift change	2	50		
			5	incoming has had pt. previously-determines	2	none	2	20		
	procedures scheduled on unit	delays clarification of report	5	scheduling	2	none	2	20		
Limit interruption	scripting not used	interruptions allowed	5	not viewed as important	8	none	2	80		

Assess *Criticality Score*

For each failure mode score and rank criticality of risks :

- **Likelihood or Occurrence**
- **Severity or Impact**
- **Detectability**

RPN (Risk Priority Number) Score / CI (Criticality Index)

Prioritize the failure modes based on their RPN / CI

Computer criticality index (CI) :

Occurrence X Severity X Detection

* CI and RPN are basically the same: but, both terms are used in the literature.

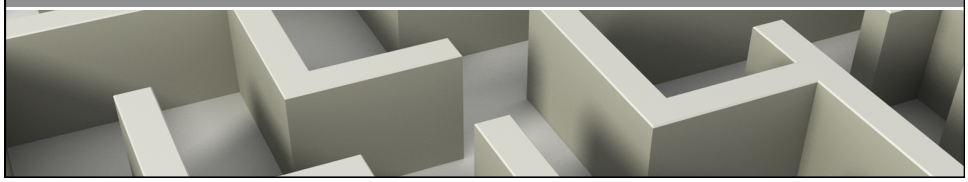
Memilih Skala Peringkat

JCI tidak secara spesifik menentukan **"skala"** mana yang harus digunakan dalam menilai modus kegagalan.

Pimpinan dan staf bebas memilih skala yang dipercaya efektif, dan organisasi harus menggunakannya secara konsisten.

Mis. Organisasi bisa memilih skala 1-10 atau 1-5.

- Tidak masalah, apapun metode (FMEA / HFMEA) dan penentuan skala (1-10 atau 1-5) yang digunakan oleh tim, Anggota tim harus setuju dan mengerti skala apa yang telah ditetapkan.
- Mis. Jika tim sepakat menggunakan skala 1-10, mereka harus setuju pada definisi tiap rating.



Sample Severity Scale 1- 10

RATING	DESKRIPSI	DEFINISI
1	Minor effect or no effect	Would not be noticeable to individual served and would not affect the process
2		
3		May affect the individual served and would result in some effect on the process
4		
5	Moderate effect	May affect the individual served and would result in a major effect on the process
6	Minor injury	Would affect the individual and result in a major effect on the process
7		
8	Major injury	Would result in a major injury for the individual served and have a major efect on the process
9		
10	Catastrophic effect, a terminal injury or death	Extremely dangerous, failure would result in death of the individual served and have a major effect on the process

Sample Severity Scale 1- 5

SEVERITY RATING

(Modified by IMRK)

	CATASTROPHIIC 5	MAJOR 4	MODERATE 3	MINOR 2	INSIGNICANT 1
Patient Outcome	Death	Injury with permanent loss of function	Injury with no permanent loss of function	No injury but increased LOS to monitor effects	No injury
Visitor Outcome	Death, hospitalization of 3 or more	Injury with permanent loss of function Or Hospitalization of 1 or 2 visitors	Injury with no permanent loss of function or Evaluation & treatment for 1 or 2 visitors (less than hospitalizatin)	Evaluated & First aid treatment	No injury
Staff Outcome	Death or hospitalization of 3 or more staff	Hospitalization of 1 or 2 staff or 3 or more staff experiencing lost time or restricted duty injuries or illnesses	Medical expenses, lost time or restricted duty injuries or illness for 1 or 2 staff	First aid treatment only with no lost time, nor restricted duty injuries nor illnesses	No injury

Sample Probability of occurrence scale 1- 10

Rating	Deskripsi	Probability of Detection	Definisi
1	Remote to nonexixtent	1 in 10.000	No or little known occurrence, highly unlikely that condition will ever occur
2			
3	Low likelihood	1 in 5000	Possible, but no known data, the condition occurs in isolated cases, but chances are low
4			
5	Moderate likelihood	1 in 200	Documented, but infrequently the condition has a reasonable chance to occur
6			
7	High likelihood	1 in 100	Documented & frequent, the condition occurs very regularly and / or during a reasonable amount of time
8			
9	Certain to occur	1 in 20	Documented, almost certain, the condition will inevitably occur during long period typical for the step or link
10			

Sample Probability of occurrence scale 1- 5

PROBABILITY

Rating	Description	Definition
1	**Rare**	Very Unlikely to occur (may happen sometime in 5 to 30 years)
2	**Unlikely**	Unlikely to occur (may happen sometimes in 2 to 5 years)
3	**Possible**	Possible will occur (may happen several times in 1 to 2 years)
4	**Likely**	Likely to occur immediately or within a short period (may happen several times in one year)
5	**Almost certain**	Very likely to occur every month

Menentukan Kemampuan Deteksi (*Detectability*)

Detectability adalah derajat dimana sesuatu dapat ditemukan atau dicatat

Pertanyaannya :

Jika modus kegagalan terjadi , bagaimana hal tersebut dapat diketahui (terdeteksi) ?

Contoh : mengidentifikasi isi gas berdasarkan label yang tertera pada tabung. Jika label hilang maka akan sangat berbahaya karena tidak diketahui isi tabung tsb.

Sample Detectability scale 1 - 10

Rating	Deskripsi	Definisi	Definition
1	Certain to detect	10 out of 10	Almost always detected immadiately
2			
3	High likelihood	7 out of 10	Likely to be detected
4			
5	Moderate likelihood	5 out of 10	Moderate likelihood of detection
6			
7	Low likelihood	2 out of 10	Unlikely to be detected
8			
9	Almost certain not to detect	0 out of 10	Detection not possible at any point
10			

Sample Detectability Scale

Rating	Description	Probability of Detection	Definition
1	Certain to detect	10 out to 10	Almost always detected immediately
2	High likelihood	7 out of 10	Likely to be detected
3	Moderate likelihood	5 out of 10	Moderate likelihood of detection
4	Low likelihood	2 out 0f 10	Unlikely to be detected
5	Almost certain not to detect	0 out of 10	Detection not possible at any point

Process Step / Input	Potential Failure Mode	Potential Failure Effects	SEVERITY	Potential Causes	OCCURRENCE	Current Controls	DETECTION	RPN	Actions Recommended	
What is the process step and Input under investiga-tion?	In what ways does the Key Input go wrong?	What is the impact on the Key Output Variables (Customer Requirements)?		What causes the Key Input to go wrong?		What are the existing controls and procedures (inspection and test) that prevent either the cause or the Failure Mode?			What are the actions for reducing the occurrence of the cause, or improving detection?	
Incoming RN /Tech in	Information not in IDX for report	incomplete information	8	Lack of input/human error	5	none	2	80	Define in IDX if old info	
	Information not up to date	inaccurate (not timely) information	8	Delay in documenting	5	verbal verification	5	##	printed report indicate if current	
	unable to print from IDX	information not available on report	5	IDX down	2	paper process	2	20		
			5	no printer installed in all areas/units	2	paper process	2	20	install printers	
			5	no access to IDX	2	paper process	2	20	Access extended to all who need to get	
Incoming RN reviews	Fail to look at the information	info. not available prior to verbal	5	incoming arrives late	5	co worker peer pressure/management	2	50		
			5	distracted or interrupted	2	limited interruptions allowed	2	20		
	IDX down/can't print report	information not available prior to	2	Scheduled or unscheduled	2	paper process	2	8		
Clarify/verify information	outgoing and incoming don't do	verbal clarification not complete	5	busy with patient	5	30 minutes at shift change	2	50		
			5	incoming has had pt. previously-determines	2	none	2	20		
	procedures scheduled on unit	delays clarification of report	5	scheduling	2	none	2	20		
Limit interruption	scripting not used	interruptions allowed	5	not viewed as important	8	none	2	80		

LANGKAH 4 : PRIORITAS MODUS KEGAGALAN

Skala Peringkat Modus Kegagalan

Beberapa Metode yang digunakan untuk menilai peringkat Modus kegagalan :

1. **Risk Priority number (RPN)** : -→ FMEA
   Fokus pada severity, probability dan detectibility
   RPN : Severity x Probability x Detectibility

1. **Hazard score** : → HFMEA
   Fokus pada kegawatan severity, probability.
   Hazard Score : Severity x Probability
   Decision tree

Prioritaskan Modus Kegagalan

Modus kegagalan harus dilakukan prioritas sesuai dengan prioritas tindakan.

Jika modus kegagalan menggunakan RPN, mungkin dapat memilih *"cut off point"* untuk menentukan prioritas.

- Nilai dibawah cutoff point tidak memerlukan tindakan segera kecuali tersedia waktu .
- Nilai di atas cutoff point , harus dilakukan eksplorasi.

Risk Priority Number (RPN)

	FM #	Failure Mode	Severity	Frequency	Detectability	RPN
	2	Choose incorrect medication	10	7	7	490
	6	No double check	10	7	7	490
	4	Error due to Baker Cells	10	8	6	480
	1	Poor flow of refilling process	7	10	6	420
Cuttof point	10	Dispense not documented in computer	7	10	5	350
	5	Labeled Incorrectly	7	8	3	168
	7	Illegible initials	4	10	4	160
	9	No double check of bag contents	7	7	3	147
	3	Count incorrect quantity	2	7	10	140
	8	Prescription bagged incorrectly	4	4	1	16

Ranking by RPN

- Use the RPN to determine where to focus your limited resources
- We are looking for failures that are most severe, occur often, and are hard to detect.

RPN	Rank
168	3
360	1
54	4
210	2

45

Step 5: Develop and Implement Solutions

- It is the job of management not only to assess risk, but also to identify effective courses of action to eliminate or mitigate that risk
- This commitment to implementing risk reduction methods transforms risk assessment into risk management
- Use a FMEA/RCA method to identify root causes and potential solutions

LANGKAH 6 : REDESAIN PROSES

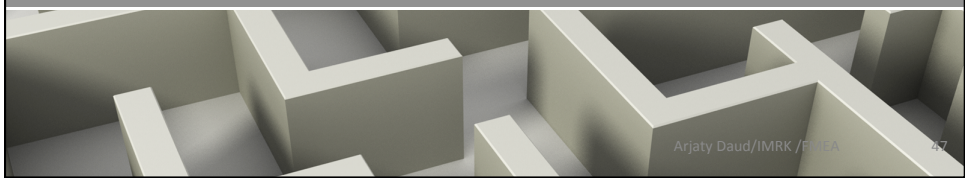
Develop and implement risk reduction solutions for each failure mode

Focus: elemen re-desain yg kritis

Pelajari RS lain bagaimana cara mengatasi hal tsb.

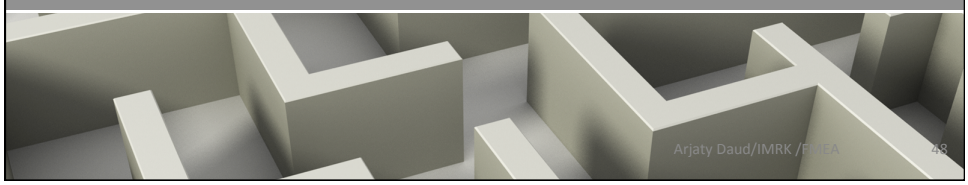
Take a deep breath

- Conduct a literature search to gather relevant information from the professional literature.
- Network with colleagues
- Recommit to out-of-the-box thinking



LANGKAH 7 : ANALISA & UJI COBA PROSES BARU

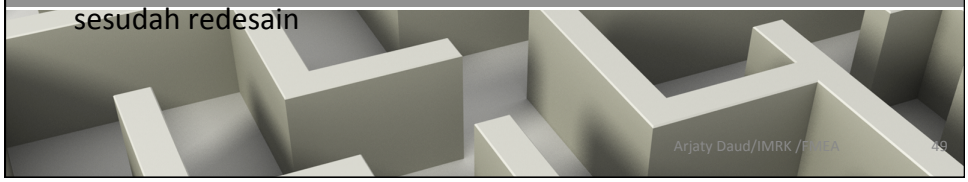
- Organizing for redesign implementation
- Testing the New Process
- The Plan-Do-Study-Act (PDSA)
- The analysis, testing, implementation and monitoring of a process are all linked
- To help teams keep track of the two final steps of the FMEA process, an organization might want to consider using a quality improvement tool such as the PDSA cycle



TESTING NEW PROCESS

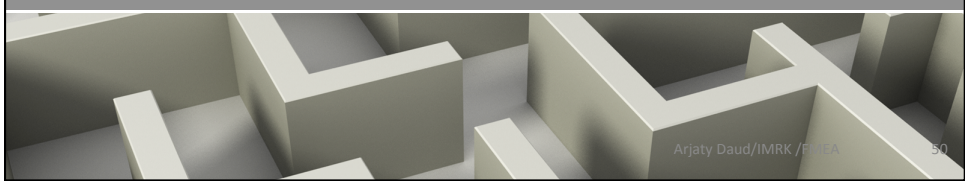
Pilot Testing

- Tim mengimplementasikan redesain dalam skala kecil, monitor hasilnya, dan lakukan redesain sesuai kebutuan tanpa mengambil risiko jika diimplementasikan dalam skala besar
- Kumpulkan umpan balik dari staf yang terlibat dalam proses di skala kecil tersebut
- Pertimbngkan pre dan pot survey staf yang terlibat dalam pilot testing. Hali ini akan memberikan informasi tentang bagaimana kelompok membandingkan proses sebelum dan sesudah redesain

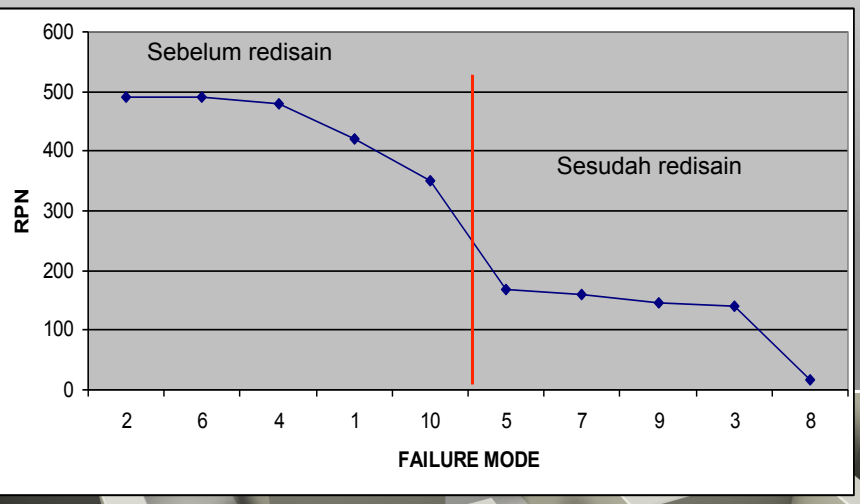


LANGKAH 8 :
IMPLEMENTING & MONITORING THE NEW PROCESS

- Implementing the redesigned process is all about introducing change into ongoing health care process
- Sustaining the Redesigned Process



Re-calculate the RPN scores based on risk reduction actions



Contoh FMEA

Langkah 2 Gambarkan Alur Proses

	1	2	3	4	5
	Dokter mengegakkan diagnosis	Dokter menetapkan terapi	Penulisan Resep	Penyerahan resep ke Farmasi	Pelayanan Obat di Farmasi
SUBPROSES :					
	A. Anamnese	a. Menulis di satatus RM	a. Perawat menulis permintaan obat pada kitir obat	a. Perawat menyerahkan resep ke keluarga pasien (jika pasien tunai)	a. Skrining resep. b. Checking 1
	B. Pemeriksaan Fisik	b. Pemilihan obat	b. Dokter menulis obat pada kertas resep	b. Perawat menyerahkan resep ke pembantu perawat untuk mengantar ke farmasi (bila pasien tanggungan asuransi/perusahaan/via RS)	c. Penyiapan. d. Labeling
	c. Pemeriksaan Penunjang	c. Pemilihan cara pemberian obat	c. Pemberian identitas pasien pada kertas resep	c. Menyerahkan ke petugas farmasi	e. Penyerahan / pengiriman obat
		d. Menentukan dosis obat	d. Perawat menulis jumlah obat pada status RM.		f. recheck resep
		e. Menentukan frekuensi Pemberian obat			g. Berhitung
		f. Pemberian terapi melalui telefon pada perawat.			h. Mutasi
		g. Pesan pada perawat yang mengantar visite.			i. Posisi

LANGKAH 3,4,5,6
MODUS KEGAGALAN DAN DAMPAK

Process/Product: Penulisan Resep Pasien Rawat Inap Team Leader: dr ..... Date: _____

Process Step/Item: Penulisan Resep Description: Perawat menulis permintaan obat pada kitir obat

	Potential Failure Mode	Potential Causes for Failure	Likelihood	Potential Effects of Failure	Severity	Current Controls	Detection	RPN		Recommended Action	Who? By When	Reassessment Date	Likelihood	Severity	Detection	New RPN
3 a1	Salah menulis obat	* Tidak dapat membaca tulisan dr. *Tidak tahu nama obat	4	Obat yang diterima pasien salah	5	Tidak ada	5	100		*Menanyakan pada dr bila tulisan tdk jelas. *Dilakukan pengecekan dgn status RM oleh 2 orang	Perawat		2	1	1	2
3 a2	Tulisan tidak jelas	*Terburu-buru *Tulisan memang jelek	2	*Tulisan tidak dapat dibaca. *Dr UGD salah menuliskan obat	2	Dr menanyakan tulisan tsb	2	8		Setelah perawat menulis di kitir obat, perawat lain mencocokkan dgn RM dan Pembantu Perawat membaca ulang tulisan	*Perawat *Pembantu Perawat		1	1	1	1
3 A3	Tulisan di kitir tidak lengkap (dosis, sediaan, frekuensi)	*Terburu-buru *Advis dokter yang tidak jelas	2	Salah pemberian obat	2	Skrining dan checking resep di Farmasi	2	8		*Setelah perawat menulis di kitir obat, perawat lain mencocokkan dgn RM. *Perawat repeat back	Perawat		1	1	2	2

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LANGKAH 3,4,5,6
MODUS KEGAGALAN DAN DAMPAK

Process/Product : Penulisan Resep Pasien Rawat Inap Team Leader: dr.... Date: _____

Process Step/Item: Penulisan Resep Description: Dokter menulis obat pada kertas resep

	Potential Failure Mode	Potential Causes for Failure	Likelihood	Potential Effects of Failure	Severity	Current Controls	Detection	RPN		Recommended Action	Who? By When	Reassessment Date	Likelihood	Severity	Detection	New RPN
3 b1	Tulisan tidak lengkap	*Dr menggunakan singkatan tdk lazim *Dr terburu-buru	3	Pasien menerima obat yang salah	5	Petugas Farmasi (skrining resep dan checking 1)	2	30		*Penulisan resep harus lengkap, tidak boleh disingkat. *Perawat membaca ulang resep	Dokter Perawat		2	1	2	4
3 b2	Sediaan obat tidak ditulis	*Dr tidak tahu macam sediaan obat *Dr lupa menuliskan	4	Sediaan obat yang diberikan salah	2	Petugas Farmasi (skrining resep dan checking 1)	2	16		*Sediaan obat harus dituliskan pada resep (tab, syr, inj, supp). *Perawat mengecek resep dgn status RM	Dokter Perawat		2	1	1	2
3 b3	Salah dosis obat	*Dr tidak melihat ulang RM *salah menuliskan dosis	2	Pasien mendapat obat dgan dosis tdk sesuai	3	Recheck dari Farmasi	3	24		Perawat melakukan recheck dgn status RM	Perawat		1	1	1	1
3 b4	Tulisan tidak jelas	*Tulisan Dr jelek *Dr terburu-buru *Dr menulis resep sambil berbicara/telf	4	Pasien menerima obat yang salah	5	Petugas Farmasi (skrining resep dan checking 1)	4	80		*Perawat membaca ulang dan langsung ditulis di RM *Penulisan Resep dgn komputer	Perawat Dokter		1	1	1	1
3 b5	Salah menulis obat	Dr tidak konsentrasi (terburu-buru) Tidak membaca ulang resep yg ditulis.	2	Pasien menerima obat yg salah	5	Petugas Farmasi (skrining resep dan checking 1)	4	40		*Perawat menanyakan kembali. *Perawat mengecek dgn RM	Perawat		1	1	1	1

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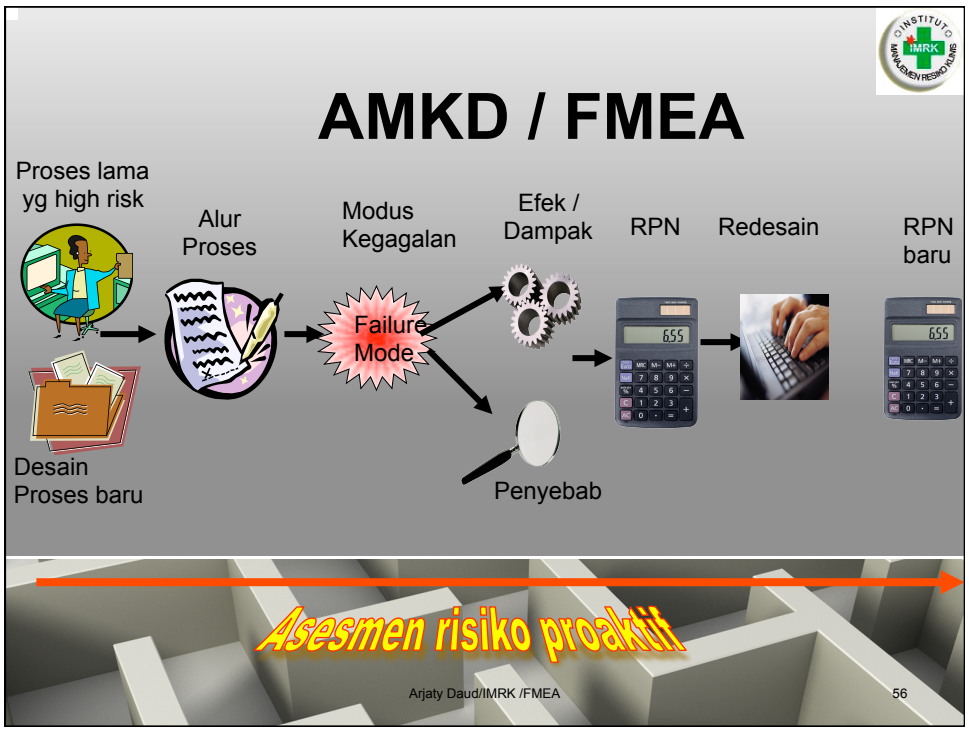
LANGKAH 3,4,5,6

MODUS KEGAGALAN DAN DAMPAK

Process/Product: Penulisan Resep Pasien Rawat Inap Team Leader: dr .... Date: _____

Process Step/Item: Penulisan Resep Description: Pemberian identitas pasien pada kertas resep

	Potential Failure Mode	Potential Causes for Failure	Likelihood	Potential Effects of Failure	Severity	Current Controls	Detection	RPN		Recommended Action	Who? By When	Reassessment Date	Likelihood	Severity	Detection	New RPN
3 c1	Salah menempel stiker	*Stiker salah masuk status RM *Tidak konsentrasi	3	Pasien menerima obat yang salah	5	Tidak ada	5	75		Recheck oleh 2 oang sebelum R/ diserahkan	Perawat		1	2	2	4
3 c2	Tidak memindahkan status saat pasien pindah tempat	Pergantian shift Perawat sedang repot	2	Salah pasien	4	Hanya 1 org yang mengontrol	4	32		Check status RM Check identitas pasien.	Perawat Pembantu perawat		1	2	1	2
3 c3																
3 c4																
3 c5																



Compliance Questions

1. Does organization have a prioritize list of high risk processes?
2. Can the organization demonstrate how a risk assessment method was used to prioritize the high risk processes?
3. Can the organization demonstrate the correct use of FMEA?
4. Was a reasonable RCA done after the RPN score was calculated?
5. Was the RPN score re-calculated after development of solutions?