Narasumber:

dr. Ronald Irwanto N., Sp.PD-KPTI, FINASIM
Spesialis Penyakit Dalam (Internist)
Konsultan Penyakit Tropik & Infeksi

Internist – Infectious Disease (ID) Specialist
www.new.rasproindonesia.com

Formal Education

- **Universitas Indonesia**, Subspesialis / Konsultan Penyakit Tropik dan Infeksi, Lulus 2013
- **Universitas Indonesia**, Spesialis Penyakit Dalam (Internist), Lulus 2009
- **Universitas Trisakti**, Dokter Umum, Lulus 2002
- **SMP-SMA Kolese Kanisius**, Jakarta, Lulus 1994

Organization

- **Tim Covid-19,** RSPI Puri Indah, 2020 – sekarang
- **Bendahara**, Perhimpunan Ilmu Kedokteran Tropis dan Penyakit Infeksi Indonesia (PETRI) Jakarta, sejak 2016 - 2023
- **Sekretaris Jenderal (Sekjen**), Pengurus Pusat Perhimpunan Pengendalian Infeksi Indonesia (PERDALIN), 2016 - 2022
- **Tim Ahli** Pokja Pencegahan dan Pengendalian Infeksi (PPI), Kemenkes RI, sejak 2017
- **Kepala Bagian** Ilmu Penyakit Dalam Fakultas Kedokteran Universitas Trisakti, 2013-2020
- **Pendiri dan Perintis** RASPRO Indonesia Study Group, **Yayasan Pelita RASPRO Indonesia** untuk studi resistensi antimikroba dan penggunaan antimikroba bijak Indonesia
- **Ketua PPI** RSPI Bintaro Jaya
- **Internist-Konsultan**, RSPI Puri Indah, RSPI Bintaro Jaya, dan Tzu Chi Hospital – Pantai Indah Kapuk, Jakarta Utara

Recent Update on Pneumococcal Vaccination Recommendations

Ronald Irwanto Natadidjaja

Division of Tropical Medicine & Infectious Disease
Department of Internal Medicine
RSPI Group

All patients with comorbid illness are considered at risk for pneumonia, but specific risk factors exist for specific pathogens including

(1) drug-resistant pneumococci - age greater than 65, exposure to children in daycare centers, intake of beta-lactam in previous 90 days, alcohol use disorder, chronic medical conditions, immune-suppression; and

(2) pseudomonas - bronchiectasis, malnutrition, corticosteroid therapy, antibiotic intake for greater than seven days in the preceding month

Community-Acquired Pneumonia
Hariharan Regunath; Yuji Oba.
NCBI, 2023

In conclusion, this review of risk factors for CAP in European adults has highlighted the range of lifestyle factors and underlying medical conditions that are associated with an increased risk of infection.
Lifestyle factors included smoking, alcohol abuse, being underweight and regular contact with children, whereas patients with chronic respiratory or cardiovascular diseases, cerebrovascular disease, epilepsy, dementia, dysphagia, HIV, or chronic renal or liver disease were all at increased risk of CAP. Greater understanding of the types of individuals at risk of CAP can help to ensure that interventions to reduce the risk of infection and burden of disease are targeted appropriately.

Risk factors for community-acquired pneumonia in adults in Europe: a literature review Antoni Torres, Willy E Peetermans, Giovanni Viegi,Francesco Blasi

Torres A, et al. Thorax 2013;68:1057–1065. doi:10.1136/thoraxjnl-2013-204282

Risk Stratification based Microorganism Pattern

	Multisensitif		MDR				Prediksi	
			ESBL		Non ESBL			
	n	%	n	%	n	%	Sesuai	Tidak Sesuai
Gram Negatif								
Acinetobacter sp.	0	0,00	0	0,00	4	10,00	4	0
Pseudomanas sp.	0	0,00	0	0,00	7	17,50	7	0
Klebsiela pneumonia	15	26,32	2	22,22	6	15,00	21	2
Escheceria coli	18	31,58	7	77,78	6	15,00	28	3
Citrobacter koseri	0	0,00	0	0,00	1	2,50	1	0
Enterobacter sp.	1	1,75	0	0,00	1	2,50	2	0
Proteus sp.	0	0,00	0	0,00	2	5,00	2	0
Providencia stuartii	0	0,00	0	0,00	1	2,50	1	0
Pantoea agglomerans	1	1,75	0	0,00	0	0,00	1	0
Raoultella ornithinolytica	0	0,00	0	0,00	1	2,50	1	0
Serratia fonticola	1	1,75	0	0,00	0	0,00	1	0
Total	**36**	**63,15**	**9**	**100,00**	**29**	72,50	**69**	**5**
Gram Positif								
Staphylococcus aureus	4	7,02	0	0,00	1 *	2,50	5	0
Staphylococcus epidermidis	1	1,75	0	0,00	2 **	5,00	3	0
Enterococcus faecalis	4	7,02	0	0,00	2	5,00	5	1
Enterococcus faecium	1	1,75	0	0,00	1	2,50	1	1
Streptococcus sp.	8	14,04	0	0,00	4	10,00	12	0
Staphylococcus sp.	3	5,26	0	0,00	1	2,50	3	1
Total	**21**	**36,84**	0	0,00	**11**	27,50	**29**	**3**
TOTAL	**57**	**100,00**	**9**	**100,00**	**40**	**100,00**	**98**	**8**

* MRSA ** MRSE

	n	%	n	%	n	%
Multisensitif	54	94,74	3	5,26	57	100,00
MDR	44	89,80	5	10,20	49	100,00

Immunocompromised :

94.74% showed multi-sensitive findings in "NAIVE" medical history, while :

89.80% showed MDR with :

< 90 days history of antibiotic usage AND / OR

< 90 days history of hospitalization AND / OR

< 90 days history of medical devices usage

Journal of Hospital Accreditation, 2021
Vol 03, Edisi 2, hal 114-118

RONALD IRWANTO NATADIDJAJA[1,2], HADIANTI ADLANI[2], HADI SUMARSONO[2,3]

WHO- SEARO Webinar Series 6 :

Role of Diagnostics in Antimicrobial Stewardship and Laboratory Surveillance

World Health Organization
Regional Office for South-East Asia

ARUC Score
Shorr et al
Alberti et al
Tumbarelo for ESBL
Duke for ESBL
Gomila et al
Marchaim et al
Carmeli et al
etc

@rasproindonesia

www.new.rasproindonesia.com

ORIGINAL ARTICLE
Bali Medical Journal (*Bali MedJ*) 2021, Volume 10, Number 3: 1031-1036
P-ISSN.2089-1180, E-ISSN: 2302-2914

Bali Medical Journal
Published by Bali Medical Journal

The Association between Medical History-based Risks and Sepsis Events in Immunocompromised Patients according to Type III Stratification of the Indonesian Regulation on the Prospective Antimicrobial System (*Regulasi Antimikroba Sistem Prospektif / RASPRO*)

Ronald Irwanto Natadidjaja[1*], Armi Setia Kusuma[2], Gede Bangun Sudradjad[3], Lies Nugrohowati[4]

Background: The Indonesian Regulation on the Prospective Antimicrobial System (*Regulasi Antimikroba Sistem Prospektif/ RASPRO*) is a novel program. Its role has been reinforced by the Indonesian Ministry of Law and Human Rights Stipulation, which may predict the risk of sepsis events. Our study aimed to evaluate whether the risk factors listed in the *RASPRO* consensus have actual effects on sepsis events.

Method: The study was a retrospective cohort using secondary data with 98 subjects. The subjects were categorized into two groups, i.e., the *RASPRO* group with type III stratification (RASPRO Group) and Non-type III stratification *RASPRO* group (Non-RASPRO Group). Subjects with infection but with conditions other than the abovementioned criteria were categorized into the Non-RASPRO group.

Results: We found that among subjects in the RASPRO group, a history of antibiotic use over the past <30 days (OR 3.42; 95%CI 1.32–8.85; p=0.011) and a history of having procedure using medical instruments within the last <30 days (OR 2.62; 95%CI 1.06–6.45; p=0.037) seemed to be greatest risk factors for sepsis events.

Conclusion: The RASPRO group has a higher risk for sepsis events than the non-RASPRO with a history of antibiotic undergoing a procedure using a medical instrument within the last <30 days possessed the greatest risk factors for sepsis events.

World Health Organization
Regional Office for South-East Asia

WHO- SEARO
Webinar Series 6 :

Role of Diagnostics in Antimicrobial Stewardship and Laboratory Surveillance

International Journal of INFECTION CONTROL

ORIGINAL ARTICLE

Antibiotic usage at a private hospital in Central Java: results of implementing the Indonesian Regulation on the Prospective Antimicrobial System (Regulasi Antimikroba Sistem Prospektif Indonesia [RASPRO])

Ronald Irwanto Natadidjaja[1,2*], Tarcisius Henry[1], Hadianti Adlani[1], Aziza Ariyani[1] and Rika Bur[1]

[1]RASPRO Indonesia Study Group, Jakarta, Indonesia; [2]Infectious Disease Division, Trisakti School of Medicine, Trisakti University, Jakarta, Indonesia

Risk Stratification Type III (Group with possibility ESBL / Pseudomonas sp Infection)
Meropenem / Imipenem ± Ciprofloxacin / Amikacin

Ceftazidime + Ciprofloxacin / Amikacin

Risk Stratification Type II (Group with possibility ESBL infection)
Ertapenem /
Piperacillin Tazobactam

Risk Stratification Type I (Group with possibility of multi-sensitive microorganism) infection)
Ampisulbactam / Ceftriaxone / Cefotaxime / Amoxyclav

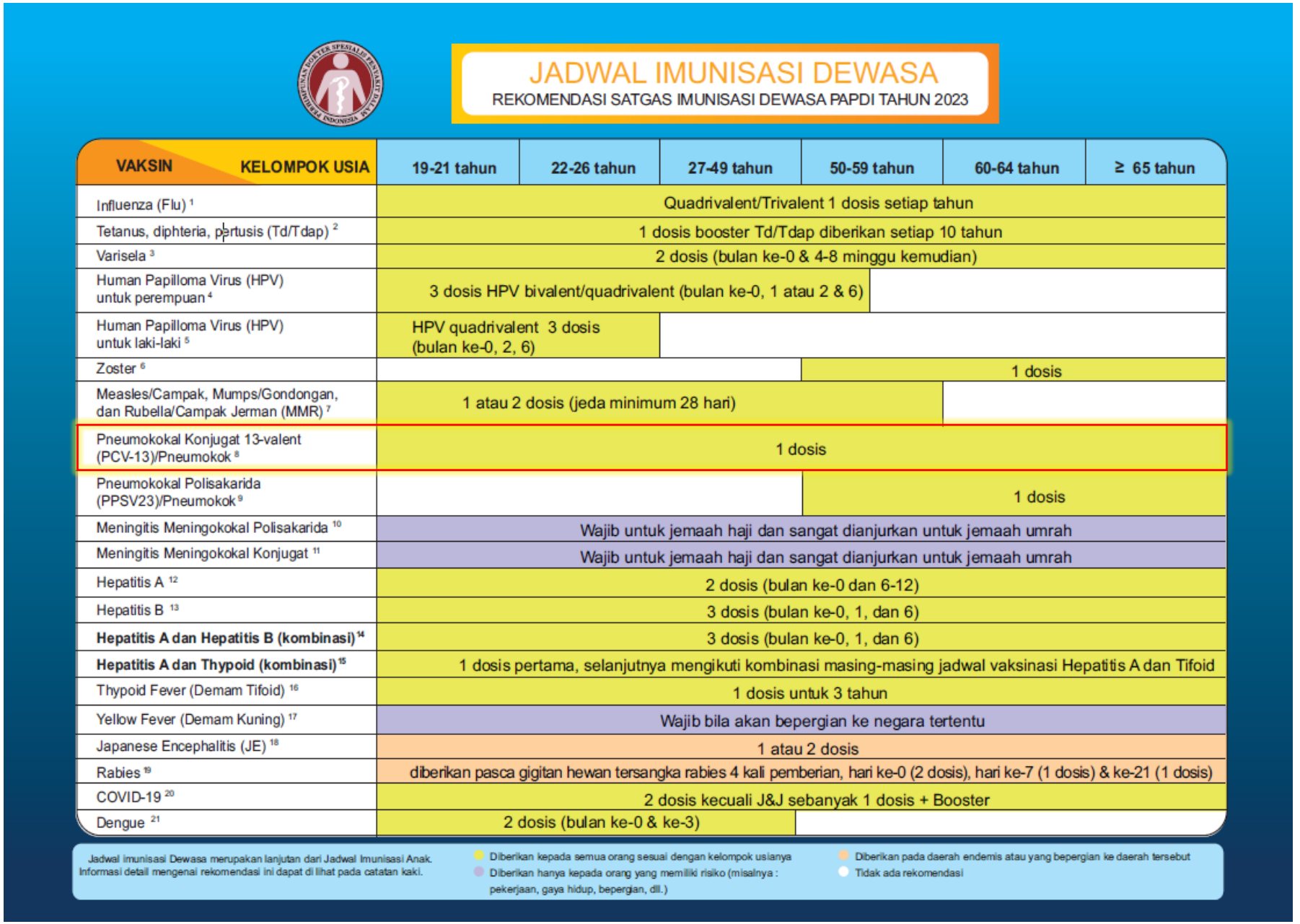
NO.	SPECIFICATION	FLOW	STOP	TREATMENT	AB
1.	Bacterial infection site(s) & symptoms clearly explained	No	STOP	No AB Treatment	
		Yes	Site(s):		
2.	Sepsis/Febrile Neutropenia/Categorized into HAIs	Yes	STOP	Stratification Type III	
		No			
3.	Organ perforation	Yes	STOP	Stratification Type III	
		No			
4.	Bacterial infection encephalopathy	Yes	STOP	Stratification Type III	
		No			
5.	Immunocompromised and/or uncontrolled DM with history of antibiotic(s) taking in the last 30 days	Yes	STOP	Stratification Type III	
		No			
6.	Immunocompromised and/or uncontrolled DM with history of hospitalization more than 48 hours in the last 30 days	Yes	STOP	Stratification Type III	
		No			
7.	Immunocompromised and/or uncontrolled DM with history of medical devices usage in the last 30 days	Yes	STOP	Stratification Type III	
		No			
8.	Immunocompromised and/or uncontrolled DM with history of antibiotic(s) taking in the last 90 days	Yes	STOP	Stratification Type II	
		No			
9.	Immunocompromised and/or uncontrolled DM with history of hospitalization more than 48 hours in the last 90 days	Yes	STOP	Stratification Type II	
		No			
10.	Immunocompromised and/or uncontrolled DM with history of medical devices usage in the last 90 days	Yes	STOP	Stratification Type II	
		No	Stratification Type I		

AB = Antibiotic
HAIs = Healthcare Associated Infections
DM = Diabetes Mellitus

Fig. 1. RASAL flowchart.

@rasproindonesia

www.new.rasproindonesia.com



JADWAL IMUNISASI DEWASA

REKOMENDASI SATGAS IMUNISASI DEWASA PAPDI TAHUN 2023

VAKSIN / KELOMPOK USIA	19-21 tahun	22-26 tahun	27-49 tahun	50-59 tahun	60-64 tahun	≥ 65 tahun
Influenza (Flu) [1]	Quadrivalent/Trivalent 1 dosis setiap tahun					
Tetanus, diphteria, pertusis (Td/Tdap) [2]	1 dosis booster Td/Tdap diberikan setiap 10 tahun					
Varisela [3]	2 dosis (bulan ke-0 & 4-8 minggu kemudian)					
Human Papilloma Virus (HPV) untuk perempuan [4]	3 dosis HPV bivalent/quadrivalent (bulan ke-0, 1 atau 2 & 6)					
Human Papilloma Virus (HPV) untuk laki-laki [5]	HPV quadrivalent 3 dosis (bulan ke-0, 2, 6)					
Zoster [6]				1 dosis		
Measles/Campak, Mumps/Gondongan, dan Rubella/Campak Jerman (MMR) [7]	1 atau 2 dosis (jeda minimum 28 hari)					
Pneumokokal Konjugat 13-valent (PCV-13)/Pneumokok [8]	1 dosis					
Pneumokokal Polisakarida (PPSV23)/Pneumokok [9]				1 dosis		
Meningitis Meningokokal Polisakarida [10]	Wajib untuk jemaah haji dan sangat dianjurkan untuk jemaah umrah					
Meningitis Meningokokal Konjugat [11]	Wajib untuk jemaah haji dan sangat dianjurkan untuk jemaah umrah					
Hepatitis A [12]	2 dosis (bulan ke-0 dan 6-12)					
Hepatitis B [13]	3 dosis (bulan ke-0, 1, dan 6)					
Hepatitis A dan Hepatitis B (kombinasi) [14]	3 dosis (bulan ke-0, 1, dan 6)					
Hepatitis A dan Thypoid (kombinasi) [15]	1 dosis pertama, selanjutnya mengikuti kombinasi masing-masing jadwal vaksinasi Hepatitis A dan Tifoid					
Thypoid Fever (Demam Tifoid) [16]	1 dosis untuk 3 tahun					
Yellow Fever (Demam Kuning) [17]	Wajib bila akan bepergian ke negara tertentu					
Japanese Encephalitis (JE) [18]	1 atau 2 dosis					
Rabies [19]	diberikan pasca gigitan hewan tersangka rabies 4 kali pemberian, hari ke-0 (2 dosis), hari ke-7 (1 dosis) & ke-21 (1 dosis)					
COVID-19 [20]	2 dosis kecuali J&J sebanyak 1 dosis + Booster					
Dengue [21]	2 dosis (bulan ke-0 & ke-3)					

Jadwal imunisasi Dewasa merupakan lanjutan dari Jadwal Imunisasi Anak. Informasi detail mengenai rekomendasi ini dapat di lihat pada catatan kaki.

- Diberikan kepada semua orang sesuai dengan kelompok usianya
- Diberikan hanya kepada orang yang memiliki risiko (misalnya : pekerjaan, gaya hidup, bepergian, dll.)
- Diberikan pada daerah endemis atau yang bepergian ke daerah tersebut
- Tidak ada rekomendasi

Adapted from: SATGAS Imunisasi Dewasa PAPDI. Pedoman Imunisasi Pada Orang Dewasa 2023

REKOMENDASI VAKSINASI UNTUK ORANG DEWASA DENGAN INDIKASI MEDIS/KONDISI TERTENTU

SATGAS IMUNISASI DEWASA PAPDI TAHUN 2023

VAKSIN / INDIKASI	Kehamilan	Kondisi imuno-kompromais (kanker dalam kemoterapi, steroid dosis tinggi, imunodefisiensi primer)	Infeksi HIV: Tidak dalam terapi ARV	Infeksi HIV: Dalam terapi ARV	*Men Who Have Sex with Men* (MSM)	Penyakit Jantung, Penyakit Paru Kronik, Alkoholisme Kronik	Asplenia (termasuk splenektomi elektif & defisiensi komponen komplemen persisten)	Penyakit Hati Kronik	Gagal Ginjal, Penyakit Ginjal Stadium Akhir, Pasien Hemodialisis	Diabetes	Petugas kesehatan
Influenza	1 dosis setiap tahun										
Tetanus, Difteri, Pertusis (Td/Tdap)	1 dosis Tdap untuk setiap kehamilan	1 dosis menggunakan Tdap & 2 dosis menggunakan Td. Selanjutnya 1 dosis booster Td/Tdap diberikan setiap 10 tahun									
Varicella (Cacar Air)	Kontraindikasi				2 dosis						
Human Papillomavirus (HPV) untuk Perempuan		3 dosis sampai usia 55 tahun				3 dosis sampai usia 55 tahun					
Human Papillomavirus (HPV) untuk Laki-laki		3 dosis sampai usia 26 tahun									
Zoster	Kontraindikasi				1 dosis						
Measles/Campak, Mumps/Gondongan, Rubella/Campak Jerman (MMR)	Kontraindikasi				1 atau 2 dosis						
Pneumokokal Polisakarida (PPSV23)/Pneumokok usia ≥ 50		1 dosis atau ditambah PCV13									1 dosis
Pneumokokal Konjugat 13-valent (PCV13)/Pneumokok usia ≥ 19		1 dosis atau ditambah PPSV23									
Meningitis Meningokokal Polisakarida	1 dosis wajib pada jemaah haji										
Meningitis Meningokokal Konjugat	1 dosis wajib pada jemaah haji										
Hepatitis A	2 dosis			2 dosis		2 dosis		2 dosis	2 dosis		
Hepatitis B	3 dosis		3 dosis			3 dosis			3 dosis		
Dengue	Kontraindikasi				2 dosis						

Jadwal imunisasi Dewasa merupakan lanjutan dari Jadwal Imunisasi Anak.
Informasi detail mengenai rekomendasi ini dapat di lihat pada catatan kaki.

- Diberikan kepada semua orang sesuai dengan kelompok usianya
- Diberikan hanya kepada orang yang memiliki faktor risiko (misalnya: pekerjaan, gaya hidup, bepergian, dll)
- Tidak ada rekomendasi

Adapted from: SATGAS Imunisasi Dewasa PAPDI. Pedoman Imunisasi Pada Orang Dewasa 2023

•Active immunization for the prevention of invasive disease caused by *Streptococcus pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F in children 6 weeks through 5 years of age (prior to the 6th birthday).

•Active immunization for the prevention of otitis media caused by *S. pneumoniae* serotypes 4, 6B, 9V, 14, 18C, 19F, and 23F. No otitis media efficacy data are available for serotypes 1, 3, 5, 6A, 7F, and 19A In children 6 weeks through 5 years of age (prior to the 6th birthday).

•Active immunization for the prevention of invasive disease caused by *S. pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F in children 6 years through 17 years of age (prior to the 18th birthday).

•Active immunization for the prevention of pneumonia and invasive disease caused by *S. pneumoniae* serotypes 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F in adults 18 years of age and older.

•Limitations: Prevnar 13 does not protect against disease caused by S. pneumoniae serotypes that are not in the vaccine.

Jenis vaksin pneumokok	Usia	Kondisi medis	Keterangan
Vaksin PCV-13	Dapat diberikan untuk seluruh usia ≥19 tahun**, baik kondisi sehat ataupun memiliki kondisi medis tertentu	Kelompok dengan kondisi medis dibawah diprioritaskan untuk diberikan 1 dosis vaksin PCV-13 1. Memiliki penyakit kronis seperti penyakit jantung kronis termasuk gagal jantung kongestif, kardiomiopati, penyakit jantung koroner dan kardiomiopati, penyakit paru kronis termasuk PPOK, asma dan emfisema, diabetes melitus, penyakit hati kronis. Memiliki kebiasaan tertentu seperti alkoholisme dan merokok. Kelompok yang mendapatkan implant koklea ataupun yang mengalami kebocoran cairan serebrospinal 2. Imunokompromais, seperti penderita keganasan baik hematologi dan non-hematologi, penyakit sel sabit, penyakit ginjal kronis (baik pada kelompok pre-dialisis, dialisis ataupun resipien transplantasi ginjal), HIV, imunodefisiensi primer atau sekunder, kelompok yang mendapatkan terapi imunosupresan jangka panjang termasuk steroid, radiasi dan imunosupresan lainnya, sindrom nefrotik, transplantasi organ/jaringan. 3. Bepergian ke daerah yang berisiko mengalami penularan pneumokok, seperti haji dan umroh 4. Usia 65 tahun keatas	Pada individu naif (belum pernah mendapatkan vaksin pneumokok), dianjurkan untuk diberikan vaksin PCV-13 dahulu sebanyak 1 dosis. Jika diperlukan dapat diberikan tambahan vaksin PPV-23 1 tahun kemudian. Pada keadaan imunokompromais atau usia 65 tahun keatas pemberian PPV-23 dapat dipercepat tetapi minimal 8 minggu setelah PCV-13. Vaksin PPV-23 dapat diulang 5 tahun kemudian meskipun pada program nasional dikebanyakan negara tidak dilakukan

Vaksinasi yang dianjurkan sebelum pemberian DMARD

Vaksin pneumokokus diberikan dua kali yaitu vaksin **pneumokokus13 valen (PCV13**) diikuti ≥8 minggu kemudian dengan vaksin polisakarida pneumokokus 23 valen (PPSV23). Selanjutnya harus diulangi 5 tahun setelah vaksinasi pertama

Tabel 6.2 Vaksin yang dianjurkan sebelum dan setelah menjalani terapi DMARD pada pasien AR[107]

	Vaksin yang sudah dimatikan (*killed vaccines*)			Vaksin rekombinan	Vaksin Hidup (*live attenuated*)
	Pneumokokus	Influenza (intramuskular)	Hepatitis B	Human Papilloma	Herpes Zoster
Sebelum memulai terapi					
Monoterapi DMARD	✓	✓	✓	✓	✓
Kombinasi DMARD	✓	✓	✓	✓	✓
Agen biologik (Anti TNF-α)	✓	✓	✓	✓	✓
Agen biologik (non Anti TNF-α)	✓	✓	✓	✓	✓
Saat sudah menjalani terapi					
Monoterapi DMARD	✓	✓	✓	✓	✓
Kombinasi DMARD	✓	✓	✓	✓	✓
Agen biologik (Anti TNF-α)	✓	✓	✓	✓	Tidak direkomen-dasikan
Agen biologik (non Anti TNF-α)	✓	✓	✓	✓	Tidak direkomen-dasikan

Multidisciplinary interventions recommended for the management of chronic heart failure

Recommendations	Class[a]	Level[b]
It is recommended that HF patients are enrolled in a multidisciplinary HF management programme to reduce the risk of HF hospitalization and mortality.	I	A
Self-management strategies are recommended to reduce the risk of HF hospitalization and mortality.	I	A
Either home-based and/or clinic-based programmes improve outcomes and are recommended to reduce the risk of HF hospitalization and mortality.	I	A
Influenza and pneumococcal vaccinations should be considered in order to prevent HF hospitalizations.	IIa	B

HF = heart failure.
[a]Class of recommendation.
[b]Level of evidence.

Adapted from: European Society of Cardiology (ESC). (2021).ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *European Heart Journal* .

Patient education and self-care

Education topic	Goal for the patient and caregiver	Professional behaviour and educational tools
Fluids	To avoid large volumes of fluid intake. A fluid restriction of 1.5–2 L/day may be considered in patients with severe HF/hyponatraemia to relieve symptoms and congestion. To avoid dehydration: where fluids are restricted, increase intake during periods of high heat/humidity and/or nausea/vomiting.	Provide information and discuss the advantages and disadvantages of fluid restriction. Advise to adapt fluid intake to weight, and in times of high heat and humidity, nausea/vomiting. Adjust advice during periods of acute decompensation and consider altering this advice towards end-of-life.
Healthy diet	To be able to prevent malnutrition and know how to eat healthily, avoiding excessive salt intake (>5 g/day) and maintaining a healthy body weight.	Discuss current food intake, role of salt, role of micronutrients. Discuss the need for supplementing in case of nutrient deficiencies but there is no clear role for routine micronutrient supplementation. Discuss maintaining a healthy body weight.
Alcohol	To be able to abstain from or avoid excessive alcohol intake, especially for alcohol-induced CMP. To restrict alcohol according to CV prevention guidelines.	Tailor alcohol advice to aetiology of HF; e.g. abstinence in alcoholic CMP. Inform and discuss alcohol intake according to CV prevention guidelines (2 units per day in men or 1 unit per day in women)[a].
Immunization	To be aware of the need for immunization for influenza and pneumococcal disease.	Discuss benefits and possible barriers. Advise on local immunization practice.
Smoking and recreational drugs	To be aware of the consequences for health of smoking and use of recreational drugs. Stop smoking (including e-cigarettes) and taking recreational drugs.	Inform, discuss and help in decision making. Refer for specialist advice for smoking cessation and drug withdrawal and replacement therapy. Consider referral for cognitive behavioural theory and psychological support if patient wishes to stop smoking or taking drugs.

CMP: Cardiomyopathy; CV: Cardiovascular

Adapted from: European Society of Cardiology (ESC). (2021).ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *European Heart Journal* .

Infection in patients with heart failure

Infective disorders may worsen HF symptoms and be a precipitant factor for AHF

Severe sepsis and pneumonia can cause myocardial injury and depress cardiac function leading to cardiac dysfunction and HF and this risk is greater in patients with a history of HF

Influenza, COVID-19, Pneumococcal vaccination, when available, should be considered in patients with HF

AHF: Acute Heart Failure; COVID-19: Corona Virus Disease 19; HF: Heart Failure

Adapted from: European Society of Cardiology (ESC). (2021).ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure. *European Heart Journal* .

Vaccination for Respiratory Infections in Patients with Heart Failure

Respiratory Infections and Heart Failure	• Adverse cardiac effects associated with respiratory infections, more specifically *Streptococcus pneumoniae* and influenza infections, are the consequence of inflammatory processes and thrombotic events. • This suggests that a national health policy is needed to improve vaccination coverage, involving not only the general practitioner, but also other health providers, such as cardiologists, nurses, and pharmacists.
Current Knowledge about Vaccination and Heart Failure Pneumococcal Vaccine	• A significant decrease in all-cause mortality was found in adults with a history of cardiovascular disease (HF, coronary disease, cerebrovascular disease) or at a very high risk for cardiovascular disease. • The efficacy of the pneumococcal vaccination was assessed in the GWTG–HF registry, which includes patients hospitalized with a primary discharge diagnosis of HF (66% received pneumococcal vaccination). • In a large prospective study performed in Sweden, concurrent administration of influenza and pneumococcal vaccines reduced hospitalizations for influenza and pneumonia. • As with influenza vaccination, a large multicenter randomized clinical trial is needed to evaluate the efficacy of pneumococcal vaccination in the prevention of cardiovascular events, particularly in patients with HF.
Current Recommendations for Vaccination Pneumococcal Vaccine	• HF is one of the clinical situations in non-immunocompromised adults predisposing to pneumococcal infection that is recognized by the French National Authority for Health (HAS). • Previously unvaccinated adult individuals receive primary pneumococcal vaccination with a dose of PCV13, followed 8 weeks later by a dose of PPV23. • Persons vaccinated using the previous sequence may receive a repeat injection of PPV23 after 5 years. Persons vaccinated for more than one year with PPV23 will receive PCV13 and a revaccination with PPV23 at least 5 years after the last PPV23. • The necessity of subsequent revaccination is not currently established but is advised by infectious disease specialists.
Conclusions	• Vaccination against influenza, pneumococcus, and COVID-19 are important goals in patients with heart failure, although largely underconsidered. • Indeed, inflammation/ infection is strongly associated with heart failure, and vaccination could offer a simple affordable protection in the frail population. • However, the current vaccination rates remain low around the world and health care teams should first be more aware of this shortcoming and ways to overcome this situation, making every effort to increase these rates through multipronged approaches.

COVID-19: Corona Virus Disease 19; GWGT-HF: Get With The Guidelines®-Heart Failure; HF: Heart Failure; PCV13: Pneumococcal Conjugate Vaccine 13; PPV23: Pneumococcal Polysaccharide Vaccine 23

Adapted from: Girerd, N., Chapet, N., Roubille, C., Roncalli, J., Salvat, M., Mouquet, F., . . . Tartiere., J.-M. (2021). Vaccination for Respiratory Infections in Patients with Heart Failure. *Journal of Clinical Medicine*, 10, 4311.

Current Knowledge of Vaccinations in Chronic Kidney Disease Patients

Chronic kidney disease (CKD) patients are at high risk for infectious complications. This is partly due to their dysfunctional immune system, especially in advanced CKD stages.

Vaccination represents an important prevention strategy in these patients, as several studies have reported lower infection rates and significantly reduced morbidity and mortality in hospitals adopting vaccination protocols.

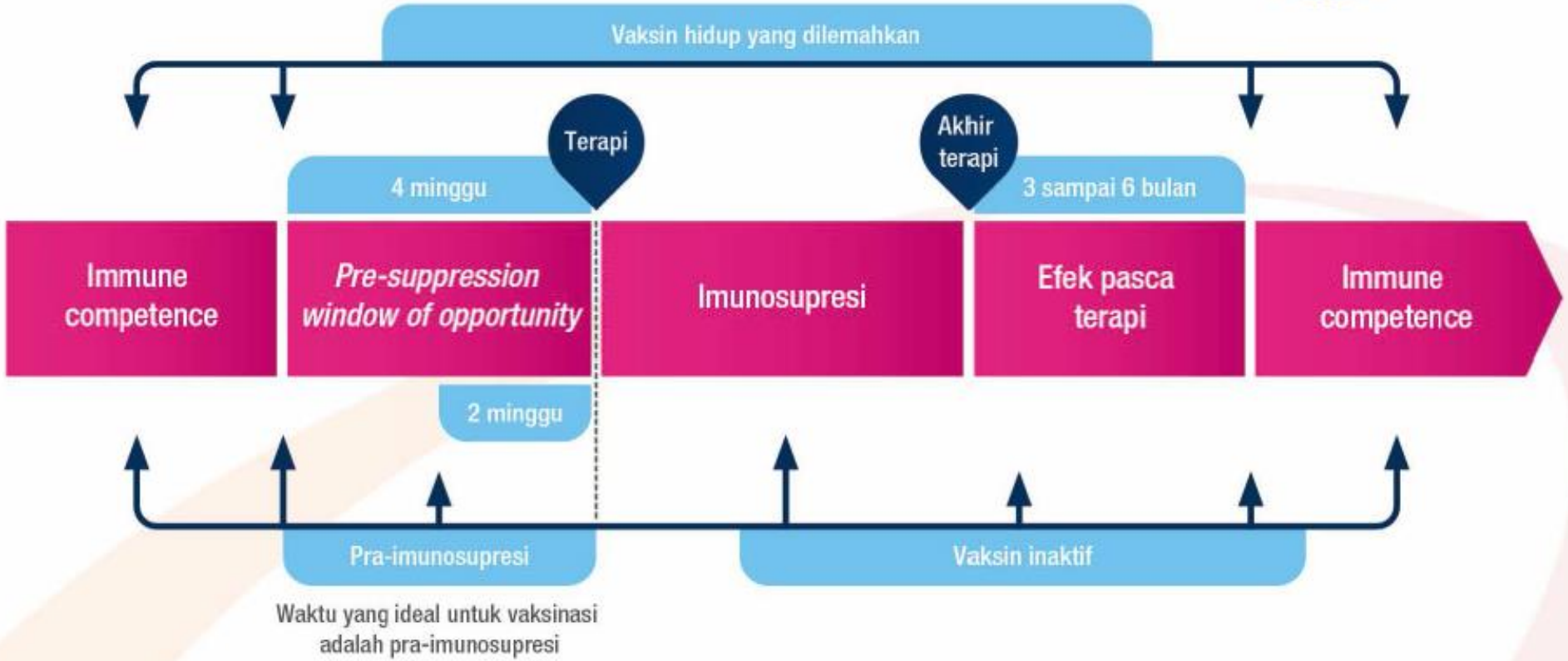
Recommended Vaccines for Adults with CKD

Vaccine	Dose and Schedule
Hepatitis B-recombinant	CKD Stages 3–4: Recombivax 10 ug: 3 doses (0, 1, and 6 months) Engerix-B 20 ug: 4 doses (0, 1, 2, and 6 months) Heplisav-B: 2 doses (0 and 1 months) CKD Stage 5: Recombivax 40 ug: 3 doses (0, 1, and 6 months) Engerix-B 40 mg: 4 doses (0, 1, 2, and 6 months) Heplisav-B: 2 doses (0 and 1 months) Booster dose when anti-HBs titer <10 mU/mL
Pneumococcal vaccine	CKD patient naïve to Pneumococcal immunization: - Administer PCV13, - Wait at least 8 weeks after PCV 13 dose then administer PPSV23 (dose1) - Wait at least 5 years after the first dose of PPSV23 then administer PPSV23 (dose 2) *CKD patient previously immunized with PPSV23: - Administer PCV13 at least one year after PPSV23 (dose1) - Wait at least 8 weeks after PCV13dose and at least 5 years after PPSV23 (dose1), then administer PPSV23 (dose 2) *CKD patient previously immunized with PCV13: -Administer PPSV23 (dose1) at least 8 weeks after PCV 13 dose - Wait at least 5 years after PPSV23 dose1, then administer PPSV23 (dose2)
Influenza inactivated	One dose annually before onset of influenza season
Hepatitis A inactivated	Two-dose series of single antigen hepatitis A vaccine (Havrix at 0 and 6–12 months or Vaqta at 0 and 6–18 months; minimum interval, 6 months) - Administer based on risk
Tetanus-diphtheria (Td) and tetanus -diphtheria -acellular pertussis (TdaP)	Primary: three doses (0,1, and 6–12 months) including one (TdaP) Booster dose with (Td) every 10 years
MMR	Administer if no evidence of immunity: 2 doses of MMR at least 28 days apart
VAR	Two doses of VAR vaccine 4–8 weeks apart if not previously received. If previously received one dose, administer 1 dose of VAR at least 4 weeks after the first dose
RZV	Two doses of RZV 2–6 months apart to adults > 50 years regardless of past episode of herpes zoster or ZVL

CKD = Chronic Kidney Disease; PCV13 = Pneumococcal Conjugate Vaccine 13 serotypes; PPSV23 = Pneumococcal Polysaccharide Vaccine 23 serotypes; MMR= measles, mumps, and rubella; RZV = recombinant zoster vaccine

Adapted from Haddiya I. Current knowledge of vaccinations in chronickidney disease patinets. International Journal of Nephrology and Renovascular Disease.2020:13. 179-185.

Waktu Terbaik Vaksinasi Pneumokokus bagi Pasien Onkologi[1,2]



1.Brazilian Society of Immunizations. Brazilian Society of Infectology. Immunization Guide https://sbim.org.br/images/calendarios/calend-sbim-pacientes-especiais.pdf
2.Brazilian Society of Oncology. Brazilian Society of Infectology. Immunization Guide https://sboc.org.br/images/Guia-de-Vacinao-no-Paciente-Oncolgico.pdf

Global Strategy for the Diagnosis, Management, and Prevention of COPD (2022 Report)

- **COPD treatment objectives:**
  - Relieve and reduce the impact of symptoms
  - Reduce the risk of adverse health events that may affect the patient at some point in the future, eg, exacerbations

- **Vaccination recommendations:**
  - Influenza vaccination is recommended for all patients with COPD
  - Pneumococcal vaccinations are recommended for all patients ≥ 65 years of age
  - The pneumococcal polysaccharide vaccine is recommended in younger COPD patients with significant comorbid conditions including chronic heart or lung disease

COPD=chronic obstructive pulmonary disease.

Global Initiative for Chronic Obstructive Lung Disease (GOLD). Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: 2021 report. http://goldcopd.org/gold-2012-global-strategy-diagnosis-management-prevention-copd/. Accessed January 5, 2022.

TERIMA KASIH