

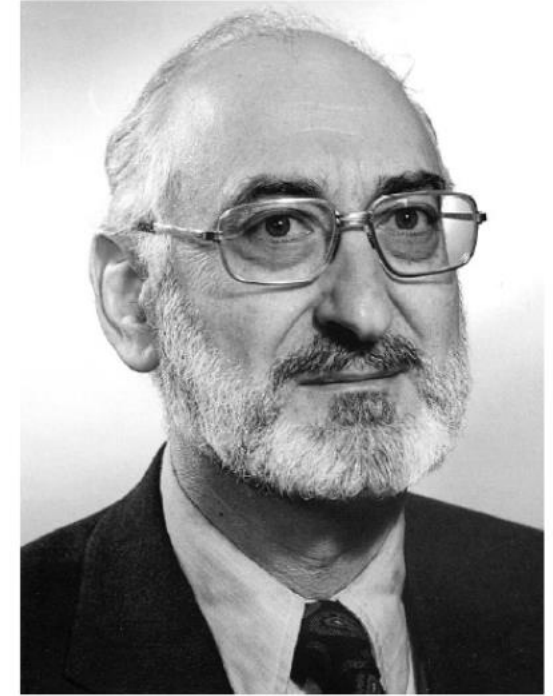
海外の QI 項目の現状

聖路加国際病院 循環器内科 鈴木 隆宏

医療の質とは

Quality of care can be defined as
“the degree to which health services for individuals and
populations increase the likelihood desired health
outcomes and are consistent with current professional
knowledge”

個人や集団に対して行われる医療が望ましい健康アウトカムをもたらす可能性の高さ、
その時々専門知識に合致している度合い



Avedis Donabedian
(1919-2000) ミシガン大学教授

Evidence-Practice Gap
(標準医療が行われている程度)
を知る



Structure/Process/Outcome
を測定した指標は
Quality Indicatorとして数値化を

QUALITY INDICATOR 2023

「医療の質」を測り改善する

聖路加国際病院の先端的試み

Index

＞ 第1章 病院全体

＞ 第2章 患者満足

＞ 第3章 報告・記録

＞ 第4章 看護

＞ 第5章 検査・薬剤

＞ 第6章 手術・処置

＞ 第7章 生活習慣

＞ 第8章 脳・神経

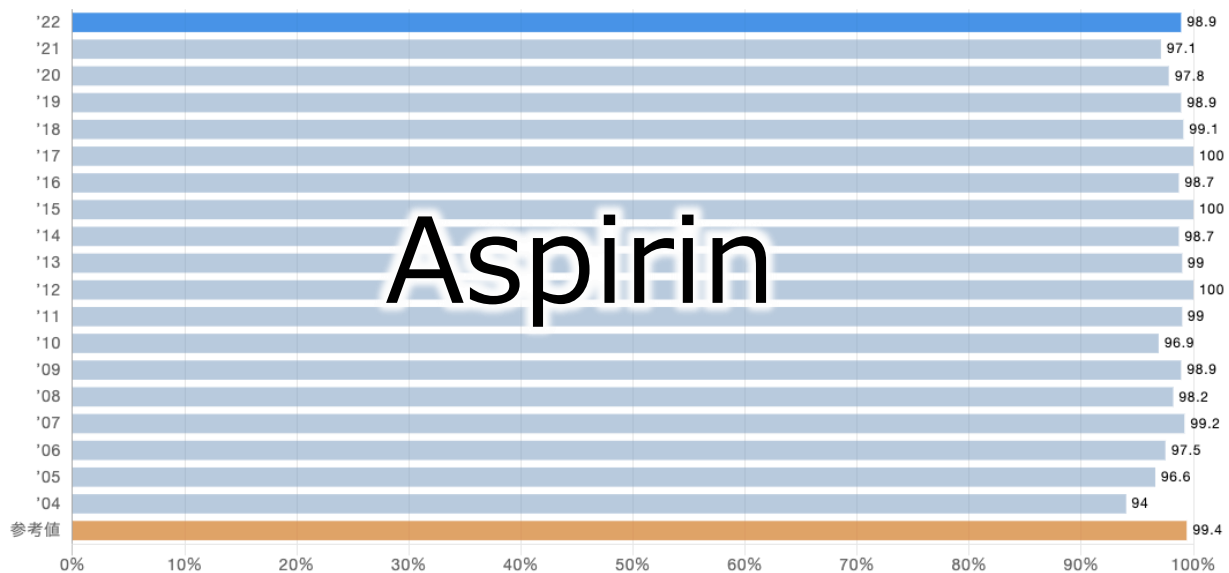
＞ 第9章 心血管

＞ 第10章 感染管理

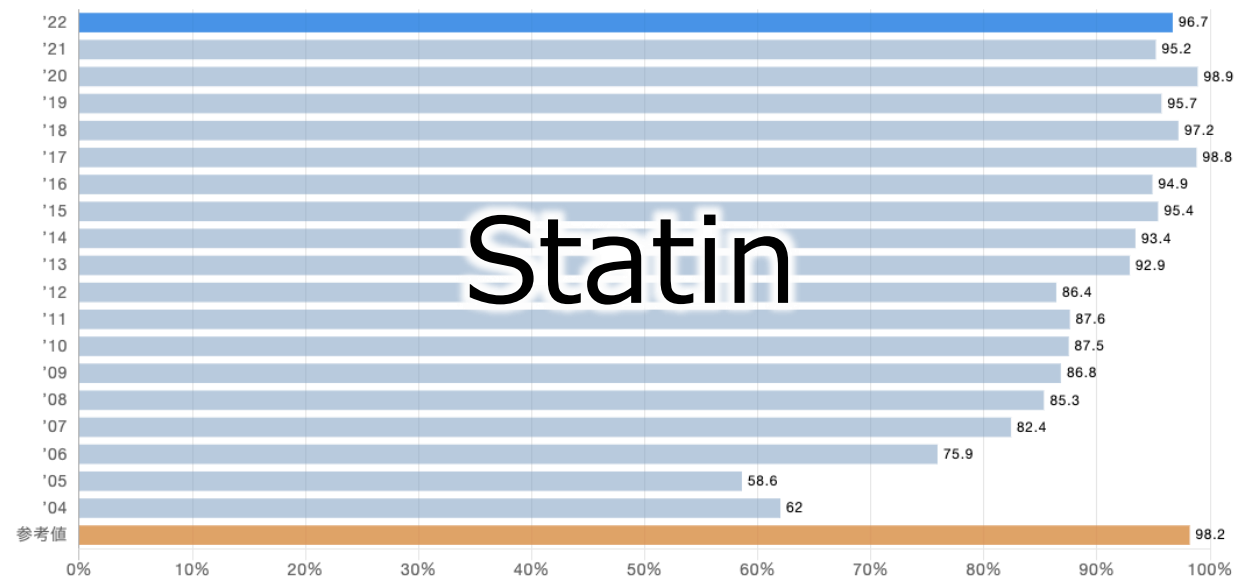


急性心筋梗塞患者における退院時処方率 ー当院データー

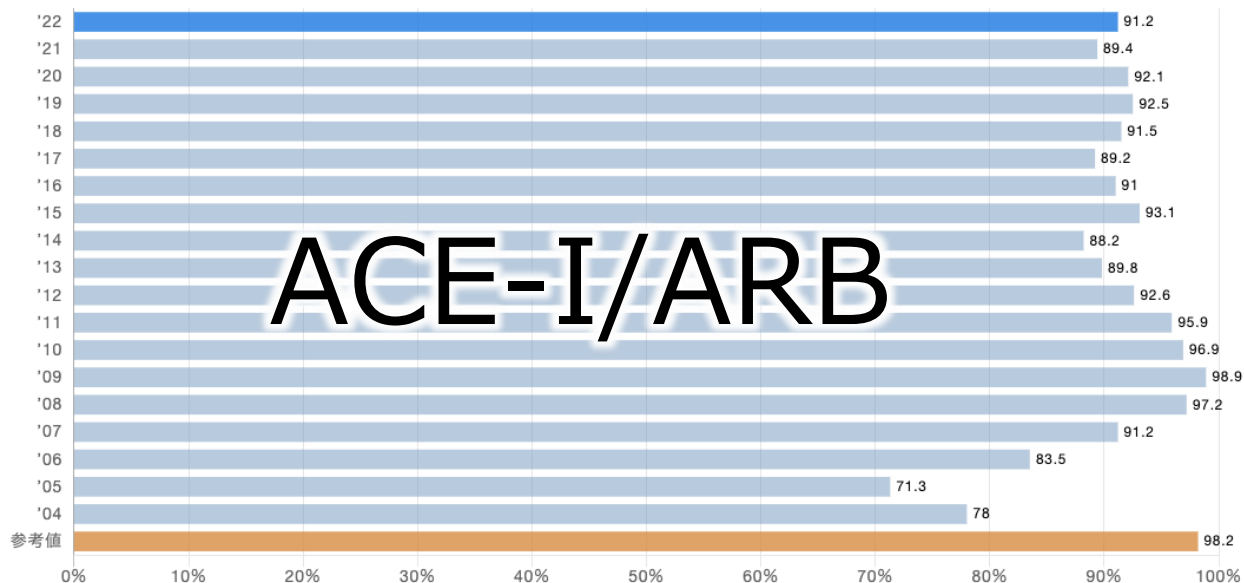
Aspirin



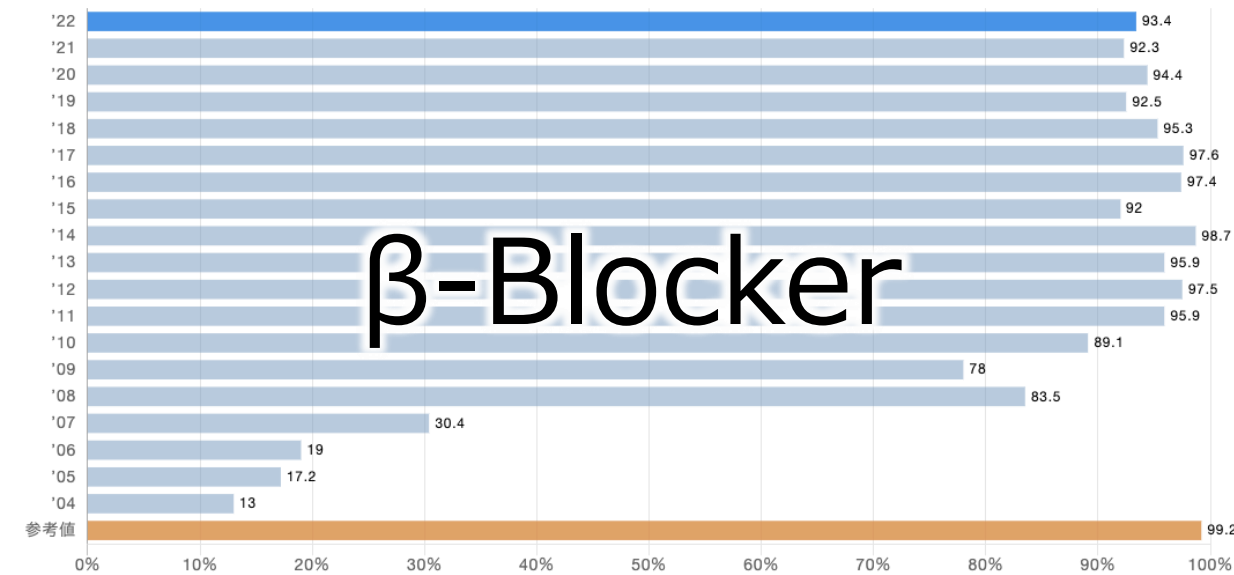
Statin



ACE-I/ARB



β-Blocker





HEALTH OUTCOMES/PUBLIC POLICY

Canadian quality indicators for percutaneous coronary interventions

Dennis T Ko MD MSc^{1,2}, Harindra C Wijeyesundera MD², Xiaofu Zhu HBSc¹, Janice Richards RN BA¹, Jack V Tu MD PhD^{1,2}; and the National Expert Panel*

DT Ko, HC Wijeyesundera, X Zhu, J Richards, JV Tu; and the National Expert Panel. Canadian quality indicators for percutaneous coronary interventions. Can J Cardiol 2008;24(12):899-903.

Indicateurs de qualité pour les interventions coronariennes percutanées au Canada

Structural indicators *Outcome indicators* *Process indicators*

- オペレーターは年間75例以上
- 病院は年間400例以上
- Door to balloon
- Door to ECG
- Door to Cath labo
- 造影剤腎症予防のプロトコール
- 抗トロンビン療法のプロトコール
- 標準化された退院後の計画
- DAPT遵守、禁煙、食事療法、運動療法の指導

- 死亡率(院内, 30日, 1年)
- 1年以内のAMI再入院
- CABG(緊急, 1年以内)
- 1年以内血行再建
- スtent血栓症
- 透析導入
- 血管修復
- 輸血

- Pre procedural
 - PCI前のアスピリンの投与
 - PCI前の腎機能評価
- Post procedural
 - PCI後の心臓バイオマーカー測定
- After discharge
 - 退院時アスピリン
 - 退院時クロピドグレル
 - 退院時スタチン
 - 禁煙



PCI Performance Measures Include Patient Selection, Appropriateness

Measures examine care before, during and after procedure

1. PCIを行う理由の包括的な文書化
2. PCIを選択する適切な理由（ベネフィットがリスクを上回る）
3. DAPTを受けられるかどうかの評価（手技前）
4. 伏在静脈バイパスグラフト病変の治療における塞栓防止装置の使用
5. 腎機能の評価（手技前）と造影剤の記録（手技中）
6. 放射線量の記録（手技中）
7. 退院時の最適な薬物療法（アスピリン、P2Y12、スタチン）の処方
8. 外来心臓リハビリテーションプログラムへの紹介
9. 地域または全国のPCIレジストリへの参加
10. 術者が過去2年間に実施した PCI の年間平均件数
11. 病院が過去1年間に実施した PCI の年間平均件数



STEMI/NSTEMIのケアのベンチマーク

PERFORMANCE MEASURE

2017 AHA/ACC Clinical Performance and Quality Measures for Adults With ST-Elevation and Non-ST-Elevation Myocardial Infarction



A Report of the American College of Cardiology/American Heart Association
Task Force on Performance Measures

*Developed in Collaboration With the Society for Cardiovascular Angiography and Interventions
Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation*

ACC/AHA Task Force on Performance Measures (Task Force)

Quality measures are those metrics that may be useful for local quality improvement but are not yet appropriate for public reporting or pay for performance programs (uses of **performance measures**).

2017 AHA/ACC STEMI and NSTEMI Myocardial Infarction Clinical Performance and Quality Measures

パフォーマンス指標

- アスピリン(PCI前・退院時)
- β遮断薬 (退院時)
- スタチン (退院時)
- ACE-I/ARB (退院時)
- P2Y12 (退院時)
- Time to 血栓溶解療法
- Time to primary PCI
- Time from ED to PCI施設
- Time from FMC to PCI
- LVEF
- 心臓リハビリテーションへの紹介
- STEMI OHCA患者の早期CAG
- 保存加療患者の退院前非侵襲的負荷試験
- NSTEMIの早期トロポニン測定
- PCIレジストリーへの登録

No.	Measure Title	Care Setting	Attribution	Measure Domain
Performance Measures				
PM-1	Aspirin at Arrival	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-2	Aspirin Prescribed at Discharge	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-3	Beta Blocker Prescribed at Discharge	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-4	High-Intensity Statin Prescribed at Discharge	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-5	Evaluation of LVEF	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-6	ACEI or ARB Prescribed for LVSD	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-7	Time to Fibrinolytic Therapy*	Inpatient	Facility or Provider Level	Communication and Care Coordination
PM-8	Time to Primary PCI*	Inpatient	Facility or Provider Level	Communication and Care Coordination
PM-9	Reperfusion Therapy*	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-10	Time From ED Arrival at STEMI Referral Facility to ED Discharge From STEMI Referral Facility in Patients Transferred for Primary PCI*	Inpatient	Facility Level	Communication and Care Coordination
PM-11	Time From FMC (At or Before ED Arrival at STEMI Referral Facility) to Primary PCI at STEMI Receiving Facility Among Transferred Patients*	Inpatient	Facility Level	Communication and Care Coordination
PM-12	Cardiac Rehabilitation Patient Referral From an Inpatient Setting	Inpatient	Facility or Provider Level	Communication and Care Coordination
PM-13	PY12 Receptor Inhibitor Prescribed at Discharge	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-14	Immediate Angiography for Resuscitated Out-of-Hospital Cardiac Arrest in STEMI Patients*	Inpatient	Facility or Provider Level	Effective Clinical Care
PM-15	Noninvasive Stress Testing Before Discharge in Conservatively Treated Patients	Inpatient	Facility or Provider Level	Efficiency and Cost Reduction
PM-16	Early Cardiac Troponin Measurement† (Within 6 Hours of Arrival)	Inpatient	Facility or Provider Level	Efficiency and Cost Reduction
PM-17	Participation in ≥1 Regional or National Registries That Include Patients With Acute Myocardial Infarction Registry	Inpatient	Facility Level	Community, Population, and Public Health

2017 AHA/ACC STEMI and NSTEMI Myocardial Infarction Clinical Performance and Quality Measures

クオリティ指標

Quality Measures

QM-1	Risk Stratification of NSTEMI Patients With a Risk Score†	Inpatient	Facility or Provider Level	Effective Clinical Care
QM-2	Early Invasive Strategy (Within 24 Hours) in High-Risk NSTEMI Patients†	Inpatient	Facility or Provider Level	Effective Clinical Care
QM-3	Therapeutic Hypothermia for Comatose STEMI Patients With Out-of-Hospital Cardiac Arrest*	Inpatient	Facility or Provider Level	Effective Clinical Care
QM-4	Aldosterone Antagonist Prescribed at Discharge	Inpatient	Facility or Provider Level	Effective Clinical Care
QM-5	Inappropriate In-Hospital Use of NSAIDs	Inpatient	Facility or Provider Level	Patient Safety
QM-6	Inappropriate Prescription of Prasugrel at Discharge in Patients With a History of Prior Stroke or TIA	Inpatient	Facility or Provider Level	Patient Safety
QM-7	Inappropriate Prescription of High-Dose Aspirin With Ticagrelor at Discharge	Inpatient	Facility or Provider Level	Patient Safety

- NSTEMI患者のリスク層別化
- ハイリスクNSTEMI患者の24時間以内の侵襲的ストラテジー
- OHCA-STEMI患者の低体温療法
- 抗アルドステロン薬（退院時）
- 不適切なNSAIDsの使用（退院時）
- 脳卒中患者へのprasugrelの不適切使用
- ticagrelor処方患者への高用量アスピリン処方

新しく追加されている指標

新しく追加されている指標

STEMI OHCA患者の早期CAG	2013ACCF/AHA STEMIガイドラインにおけるクラスI（エビデンスレベルB）
保存加療患者の退院前非侵襲的負荷試験	2014AHA/ACC NSTEMI-ACS におけるクラスI（エビデンスレベルB）
NSTEMIの早期トロポニン測定	2014AHA/ACC NSTEMI-ACSガイドラインにおけるクラスI
レジストリーへの参加	AHA/ACC NSTEMI-ACSガイドラインにおけるクラスI（エビデンスレベルB）
NSTEMI患者のリスク層別化	2014AHA/ACCのNSTEMI-ACS(11)ガイドラインにおける、NSTEMI-ACS患者の予後を評価するためにリスクスコア →GRACE、TIMI、PURSUITはレトロスペクティブに計算することが困難であり、重大な抽出負担がある
ハイリスクNSTEMI患者の24時間以内の侵襲的 ストラテジー	2014AHA/ACC NSTEMI-ACSガイドラインにおけるクラスI（エビデンスレベルA） →週末などの施設負担、リスク層別化は現在の登録では通常不可能（確認ができない）
OHCA-STEMI患者の低体温療法	2013ACCF/AHA STEMIガイドラインにおけるクラスI（エビデンスレベルB） →治療的低体温療法の有効性、タイミングなど依然議論的
抗アルドステロン薬（退院時）	2013ACCF/AHA STEMIおよび2014年AHA/ACC NSTEMI-ACC におけるクラスI →抽出負担を伴う可能性が高く、EPHESUS trialに依存する
不適切なNSAIDsの使用（退院時）	2013ACCF/AHA STEMI におけるクラスIII →入院というよりは主に外来、入力負担も加味
脳卒中患者へのプラスグレルの不適切使用	2013ACCF/AHA STEMI治療ガイドラインのクラスIII→より多くのデータ蓄積が必要
チカグレロール処方患者への高用量アスピリン処方	2013ACCF/AHA STEMI ガイドラインでは 高用量アスピリンの使用に注意喚起 →より多くのデータ蓄積が必要

2020 Update of the quality indicators for acute myocardial infarction: a position paper of the Association for Acute Cardiovascular Care: the study group for quality indicators from the ACVC and the NSTEMI-ACS guideline group

Structure

- Prehospital ECG

Process

- LVEF assessment
- LDL-cholesterol evaluation
- Risk score assessment
- Duration of DAPT
- Medication

Patient's satisfaction

- Discharge letter sent to patient
- Review of QOL, patients's experience

Outcomes

- Opportunity-based composite QI
- Risk adjusted 30-day mortality rate



Quality metrics selected by ESC-ACVC 2020, ESC ACCA 2017, ACC/AHA 2017, and CCS 2008

Domain	Indicators	ACVC 2020	ACCA 2017	ACC/AHA 2017	CCS 2008
Centre Organization	Network				
	Availability of hs-cTn				
	Pre-hospital interpretation of ECG				
	Quality registry programme				
	Systematic assessment of times to reperfusion				
Reperfusion—invasive coronary strategy	STEMI with reperfusion				
	Timely reperfusion by PCI				
	Time for fibrinolytic therapy				
	Door to needle time				
	Door in Door out time				
	Time to PCI transferred patient				
	Invasive strategy <24 h				
	Radial access				
Risk assessment	FMC to arterial access (STEMI)				
	LVEF assessment				
	LDL-c assessment				
	Risk assessment with a validated score				

Quality metrics selected by ESC-ACVC 2020, ESC ACCA 2017, ACC/AHA 2017, and CCS 2008

Domain	Indicators	ACVC 2020	ACCA 2017	ACC/AHA 2017	CCS 2008
Antithrombotics	Adequate P2Y₁₂				
	Aspirin admission				
	Parenteral anticoagulation				
	DAPT at discharge				
Secondary Prevention	Mention about DAPT duration				
	High-intensity statins				
	Aspirin discharge				
	ACEI/ARB if LVEF < 40%				
Patient satisfaction	Aldosterone antagonist at discharge				
	Beta-blockers if LVEF < 40%				
	Feedback				
	Cardiac rehabilitation				
Cardiac arrest	Smoking cessation advice				
	Quality of life				
	Discharge letter				
	Immediate angiography				
Composite Indicator	Hypothermia				
	Opportunity-based				
Outcomes	All or none				
	Thirty-day risk-adjusted mortality				



Quality indicators for acute cardiovascular diseases


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Quality indicators for acute cardiovascular diseases: a scoping review

[Koshiro Kanaoka](#) , [Yoshitaka Iwanaga](#), [Yasushi Tsujimoto](#), [Akihiro Shiroshita](#), [Takaaki Suzuki](#), [Michikazu Nakai](#) & [Yoshihiro Miyamoto](#)

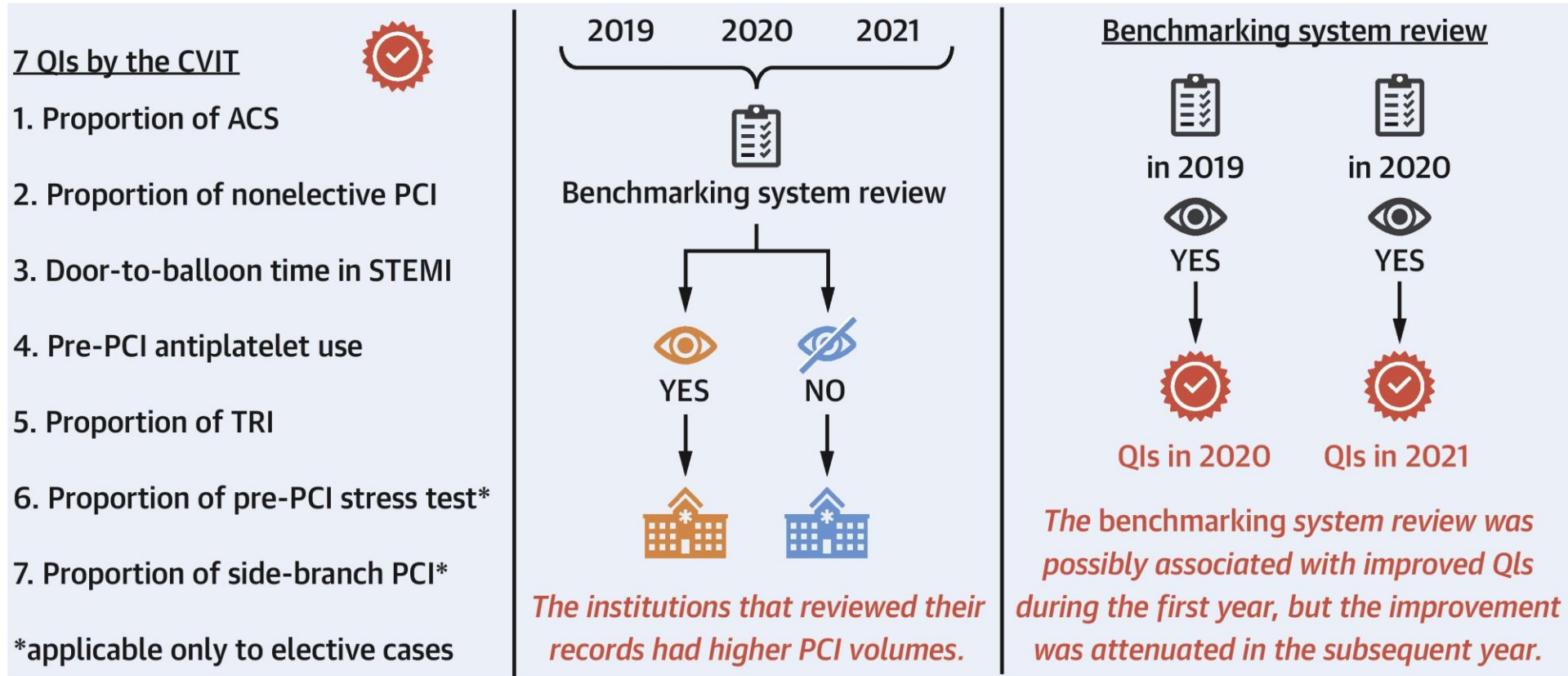
BMC Health Services Research **22**, Article number: 862 (2022) | [Cite this article](#)

Quality indicator	Clinical setting	Donabedian framework	Definition of quality indicator (representative)	No. of publications [reference]
Aspirin on arrival	Upon admission	Process	Patients were prescribed aspirin at arrival/patients with ACS	7 [19 , 20 , 24 , 26,27,28,29]
Time for primary PCI/timely performed PCI	Acute setting	Process	Time from first medical contact or admission to primary PCI/timely PCI for STEMI or NSTEMI	9 [11 , 20 , 21 , 23 , 24 , 26,27,28,29]
Time for fibrinolytic therapy	Acute setting	Process	Patients underwent <10 min in case of reperfusion with fibrinolysis	6 [11 , 20 , 24 , 26 , 28 , 29]
Aspirin at discharge	During hospitalization / at discharge	Process	Patients were prescribed aspirin at discharge/patients with ACS	6 [19 , 20 , 24,25,26 , 29]
High-intensity statins prescription	During hospitalization / at discharge	Process	Patients were prescribed high-intensity statins/patients with ACS	7 [11 , 19 , 20 , 24 , 26 , 27 , 29]
Beta-blocker prescription	During hospitalization / at discharge	Process	Patients were prescribed beta-blockers/patients with reduced LV function	8 [11 , 19 , 20 , 24,25,26,27 , 29]
ACEi/ARB prescription	During hospitalization / at discharge	Process	Patients were prescribed ACEi or ARBs/patients with reduced LV function	8 [11 , 19 , 20 , 24,25,26,27 , 29]
LVEF assessment	During hospitalization / at discharge	Process	Patients who underwent assessment of LV function/patients with ACS	6 [11 , 19 , 20 , 24 , 26 , 27]
Mortality or readmission	–	Outcome	Short- (30-day) or long-term mortality for hospitalized patients with ACS	7 [11 , 21 , 22 , 24 , 26 , 28 , 29]

PCI percutaneous coronary intervention, *ACS* acute coronary syndrome, *STEMI* ST elevation myocardial infarction, *NSTEMI* non-ST elevation myocardial infarction, *LV* left ventricular, *ACEi* angiotensin-converting enzyme inhibitor, *ARB* angiotensin II receptor blocker, *LVEF* left ventricular ejection fraction

Benchmarking System Monitoring on Quality Improvement in Percutaneous Coronary Intervention: A Nationwide Registry in Japan

CENTRAL ILLUSTRATION: Study Flow and Summary of Results



Saito Y, et al. JACC: Asia. 2024;4(4):323-331.

今後のQI指標の方向性

- 他国の指標として、LVEF・LDLコレステロールの評価、またそれに合わせた薬物導入率、その他に心臓リハビリテーションなどが新しく組み込まれてきている
- 原則的にはOutcome指標というよりはそのStructureやProcessに関する見直しの継続が行われており、ほかにPatient's satisfactionという患者満足度・生活の質の調査をESCでは開始している
- ベンチマークシステムによるQI指標の改善、経年的な傾向は十分に評価されておらず今後の研究の蓄積が期待される