

- [40] Weeks WB, Bagian JP. Making the business case for patient safety. *Joint Commission Journal on Quality and Safety* 2003; 29:51-4.
- [41] Mello MM, Kelly CN, Brennan TA. Fostering rational regulation of patient safety. *Journal of Health Politics Policy and Law* 2005; 30:375-426.
- [42] Marshall MN, Shekelle PG, Leatherman S, Brook RH. The public release of performance data: what do we expect to gain? A review of the evidence. *Journal of American Medical Association* 2000;283:1866-74.
- [43] Petersen LA, Woodard LD, Urech T, Daw C, Sookanan S. Does pay-for-performance improve the quality of health care? *Annals of Internal Medicine* 2006; 145:265-72.
- [44] Doran T, Fullwood C, Gravelle H, Reeves D, Kontopantelis E, Hiroeh U, et al. Pay-for-performance programs in family practices in the United Kingdom. *New England Journal of Medicine* 2006; 355:375-84.
- [45] Lindenauer PK, Remus D, Roman S, Rothberg MB, Benjamin EM, Ma A, et al. Public reporting and pay for performance in hospital quality improvement. *New England Journal of Medicine* 2007; 356:486-96.

Table 1. Contents of the Study Questionnaire to Measure Activities for Patient Safety and Infection Control

Activity Domain	Brief Description	Example Components*	Ref
Staff assignment	Deployment of safety managers or infection control practitioners who worked in division of patient safety or hospital infection.	Number of staff by type of profession, volume of activities in each division, floor space of each division, etc.	18, 21
Meetings and conferences	Convening of decision-making board meetings, regular meetings of practitioners or other conferences conducted for patient safety.	Supreme decision-making board committee, regular meetings in safety division, medical accident investigation committee, etc.	21
Materials and equipments	Implementation of materials and equipment designed for patient safety.	Prevention of patient misidentification, falls, pressure ulcers, hospital infection and adverse drug events, etc.	17, 20
Prevention of occupational infection	Immunization for the prevention of occupational infection.	Vaccination against influenza, tuberculin skin test, etc.	19
Internal audit	Walk rounds to audit the environment for patient safety by internal practitioners.	Walk rounds of ward environment, review for adherence to manual, clinical chart review, etc.	17
Internal education and training	Education and training conducted in hospitals to prevent and control adverse events and hospital infections.	Staff education prepared by safety division and nursing department, orientation for new members, etc.	17, 19-21
External education and training	Participation in educations and trainings for patient safety held outside the hospitals.	Seminar conducted by government, professional organization, accreditation council, etc.	21
Incident report systems and related activity	The activities involved in reporting incidents, analyzing them, and considered measures for patient safety.	Submitting incident reports, review by manager, data entry, analysis by safety division, feedback, etc.	1, 17
Infection surveillance	Reviews of medical charts and reports of microbiologic results and analysis of data to prevent and control hospital infection.	Review of medical charts and bacteriologic examination of MRSA, surgical site infection, ventilator-associated infection, catheter-associated infection, etc.	18, 21
Development of standardized processes and manuals	The activities for the development of generalization for the process and measures to prevent and control of adverse events or hospital infection.	Institutional guidelines and handbook for safety procedures, informed consent, fall, antimicrobial drug use, needle stick, hand hygiene, etc.	21
External audit	An examination of the quality or management systems of hospital environment conducted by an outside party.	Japan Council for Quality Health Care, International Organization for Standardization, etc.	17
Management of medical equipment	Regular health device inspection and preventive maintenance by clinical engineering departments.	Monitor and repair of medical equipment by clinical engineering and outsourcing, etc.	17
Management of medication	Management of medication by medication teaching, maintaining medication histories, delivering drug information, and consulting of medication issues by pharmacists.	Medication history management, drug information service, dispensing instructions, etc.	17, 20
Other activities	Other activities related to patient safety and infection control and not categorized as above activity.	Waste disposal, environmental cleaning, patient safety campaigns, public relations, etc.	21

* Within each activity component, we surveyed a number of staff by type of profession, volume of time required, and frequency of activities conducted in 2004. We also estimated the costs of material resources such as space, handouts and participation fees within each activity component, and materials or equipments designed for patient safety and infection control.

Table 2. Characteristics of Participant Hospitals (Approximate Figures)

	Hospital A	Hospital B	Hospital C	Hospital D	Hospital E	Hospital F	Hospital G
No. of beds	300	390	510	520	690	880	1100
Intensive care unit*	10	5	10	10	10	25	50
No. of inpatient-days	101,000	114,000	153,000	142,000	299,000	262,000	397,000
Average LOS†	12	14	14	12	15	16	15
No. of doctors	80	110	120	100	130	240	290
No. of nurses	240	370	450	470	510	570	960
No. of pharmacists	20	20	20	30	20	50	60
No. of other medical staff‡	90	270	110	160	90	310	290
No. of administrative staff	80	100	50	160	40	330	410
No. of others	50	30	40	180	80	190	160

*Presented is the total number including intensive care unit, coronary care unit, high care unit, neonatal intensive care unit, and maternal-fetal intensive care unit.

†Presented is average length of stay limited acute beds.

‡Presented is the total number of co-medicals without pharmacists.

研究成果の刊行に関する一覧表

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原著論文

1. Ostubo T, Imanaka Y, Lee J, Hayashida K. Evaluation of resource allocation and supply-demand balance in clinical practice with high-cost technologies. *Journal of Evaluation in Clinical Practice* (in press).
2. Lee J, Imanaka Y, Sekimoto M, Ikai H, Otsubo T. Healthcare-associated infections in acute ischemic stroke patients from 36 Japanese hospitals: risk-adjusted economic and clinical outcomes. *International Journal of Stroke* (in press)
3. Hayashida K, Imanaka Y, Murakami G, Takahashi Y, Nagai M, Kuriyama S, Tsuji A. Difference in lifetime medical expenditures between male smokers and non-smokers. *Health Policy* (in press).
4. Fukuda H, Imanaka Y, Ishizaki T, Okuma K, Shirai T. Change in clinical practice after publication of guidelines on breast cancer treatment. *International Journal for Quality in Health Care*. 2009;21(5): 372-378.
5. Nishikawa H, Imanaka Y, Sekimoto M, Hayashida K, Ikai H. Impact of verification bias on the assessment of MRI for the diagnosis of meniscal tears. *American Journal of Roentgenology* (in press)
6. Nojo T, Imanaka Y, Ishizaki T, Sekimoto M, Yoshino M, Kurosawa T, Takao T, Ohtomo K. Lung cancer incidence in middle-aged men estimated by low-dose computed tomography screening. *Lung Cancer*. 2009;65:56-61.
7. Kawasaki K, Sekimoto M, Ishizaki T, Imanaka Y. Work stress and workload on full-time anesthesiologists of acute care hospitals in Japan. *Journal of Anesthesia*.2009;23:235-241.
8. Fukuda H, Imanaka Y, Hirose M, Hayashida K. Impact of system-level activities and reporting design on the number of incident reports for patient safety. *Quality & Safety in Health Care* (in press)
9. Lee J, Imanaka Y, Sekimoto M, Ishizaki T, Hayashida K, Ikai H and Otsubo T. Risk-adjusted increases in medical resource utilization associated with healthcare-acquired infections in gastrectomy patients. *Journal of Evaluation in Clinical Practice* (in press)
10. Sekimoto M, Imanaka Y, Kobayashi H, Okubo T, Kizu J, Kobuse H, Mihara H, Tsuji N, Yamaguchi A. Factors affecting performance of hospital infection control in Japan. *American Journal of Infection Control*. 2009;37(2):136-42.
11. Hayashida K, Imanaka Y, Otsubo T, Kuwabara K, Kohicih B, Ishikawa, Fushimi K, Hashimoto H, Yasunaga H, Horiguchi H, Anan M, Fujimori K, Ikeda S, Matsuda S. Development and analysis of a nationwide cost database of acute-care hospitals in Japan. *Journal of Evaluation in Clinical Practice*. 2009;15(4): 626-633.
12. Fukuda H, Imanaka Y, Hirose M, Hayashida K. Factors associated with system-level activities for patient safety and infection control. *Health Policy*. 2009;89(1):26-36.

13. Fukuda H, Imanaka Y. Assessment of transparency of cost estimates in economic evaluations of patient safety programs. *Journal of Evaluation in Clinical Practice*. 2009;15(3):451-459.
14. Fukuda H, Imanaka Y, Hirose M, Hayashida K. Economic evaluations of maintaining patient safety systems in teaching hospitals. *Health Policy*. 2008; 88(2-3):381-391.
15. Kuwabara K, Imanaka Y, Matsuda S, Fushimi K, Hashimoto H, Ishikawa KB, Horiguchi H, K. Hayashida K, Fujimori K. Cost of open versus laparoscopic appendectomy. *Clin Ter* 2008; 159(3):155-163.
16. Sekimoto M, Kakutani C, Inoue I, Ishizaki T, Hayashida K, and Yuichi Imanaka. Management patterns and healthcare costs for hospitalized patients with cerebral infarction. *Health Policy* 2008 Oct;88(1):100-9.
17. Fukuda H, Imanaka Y, Hayashida K. Cost of hospital-wide activities to improve patient safety and infection control: a multi-centre study in Japan. *Health Policy*. 2008;87(1):100-111
18. Fukuda H, Imanaka Y, Kobuse H, Hayashida K, Murakami G. The subjective incremental cost of informed consent and documentation in hospital care: a multi-centre questionnaire survey in Japan. *Journal of Evaluation in Clinical Practice*.2009;15(2):234-241.
19. Ishizaki T, Imanaka Y, Oh EH, Sekimoto M, Hayashida K, Kobuse H. Association between patient age and hospitalization resource use in a teaching hospital in Japan. *Health Policy*. 2008;87(1):20-30.
20. Sekimoto M, Imanaka Y, Kobayashi H, Okubo T, Kizu J, Kobuse H, Mihara H, Tsuji N, Yamaguchi A. Impact of hospital accreditation on infection control programs in teaching hospitals in Japan. *American Journal of Infection Control*. 2008;36(3):212-219.
21. Oh EH, Imanaka Y, Hayashida K, Kobuse H. Meta-analysis comparing clinical effectiveness of drug-eluting stents, bare metal stents, and coronary artery bypass surgery. *International Journal of Evidence-Based Healthcare*. 2007;5:296-304.
22. Hayashida K, Imanaka Y, Sekimoto M, Kobuse H, Fukuda H. Evaluation of acute myocardial infarction in-hospital mortality by risk adjustment based on Japanese administrative data. *J Int Med Res*. 2007; 35(5):590-6.
23. Kuwabara K, Matsuda S, Imanaka Y, Fushimi K, Hashimoto H, Ishikawa KB. The effect of age and procedure on resource use for patients with cerebrovascular disease. *Journal of Health Services Research & Policy*. 2008;13(1):26-32.
24. Kuwabara K, Imanaka Y, Matsuda S, Fushimi K, Hashimoto H, Ishikawa KB, Horiguchi H, Hayashida K, Fujimori K. Impact of age and procedure on resource use for patients with ischemic heart disease. *Health Policy*. 2008;85: 196-206.
25. Kuwabara K, Imanaka Y, Matsuda S, Fushimi K, Hashimoto H, Ishikawa KB, Horiguchi H, Hayashida K, Fujimori K. The association of the number of comorbidities and complications with length of stay, hospital mortality and LOS high outlier, based on administrative data. *Environmental Health and Preventive Medicine* 2008;13(3):130-7.

26. Hayashida K, Imanaka Y, Fukuda H. Measuring hospital-wide activity volume for patient safety and infection control: a multi-centre study in Japan. *BMC Health Serv Res.* 2007;7(1):140.
27. Hirose M, Regenbogen SE, Lipsitz S, Imanaka Y, Ishizaki T, Sekimoto M, Oh EH, Gawande AA. Lagtime in incident reporting system at a university hospital in Japan. *Quality and Safety in Health Care.*2007;16:101-104 .
28. Evans E, Imanaka Y, Sekimoto M, Ishizaki T, Hayashida K, Fukuda H, Oh EH. Risk adjusted resource utilization for AMI patients treated in Japanese hospitals. *Health Economics.* 2007; 16 (4): 347-359.

国際学会発表

1. Otsubo T, Imanaka Y, Lee J, Hayashida K, Matsuda S. Determinants of ratio of charge to cost based on a patient classification cost database: the case of percutaneous coronary intervention and gastrectomy. 25th PCSI Conference, Fukuoka, Japan. 11-14 November, 2009.
2. Motohashi T, Sekimoto M, Imanaka Y. Institutional Structures and Process of Care Associated with The Length of Hospital Stay in Elderly Patients with Hip Fractures.-Analysis of Diagnosis Procedure Combination(DPC) Data-. 25th PCSI Conference, Fukuoka, Japan. 11-14 November, 2009.
3. Fukuda H, Imanaka Y, Hirose M, Hayashida K. Evaluation of the impact of patient safety activities on the number of voluntary incident reports at teaching hospitals in Japan. In proceedings of the 13th Annual Meeting on International Society For Pharmacoeconomics & Outcome Research: 5-7 May 2008; Toronto.
4. Hayashida K, Imanaka Y, Murakami G, Otsubo T, et al. Assessment of Intensive Care Unit (ICU) functionality by patient acuity in Japan: A pilot study. The 23rd Patient Classification Systems International Conference, Venice, 7 – 10 November, 2007.
5. Otsubo T, Hayashida K, Imanaka Y. Supply-demand balance and diffusion of high-cost medical devices in Japan: an estimation based on casemix classification. The 23rd Patient Classification Systems International Conference, Venice, 7 – 10 November, 2007.
6. Kuwabara K, Matsuda S, Imanaka Y, Fushimi K, Hashimoto H, Ishikawa K.B, Horiguchi H, Anan M, Hayashida K., Fujimori K., Ikeda S. Refinement of the Diagnosis Procedure Combination Payment System. The 23rd Patient Classification Systems International Conference, Venice, 7 – 10 November, 2007.
7. Hayashida K, Imanaka Y, Fukuda H. The annual activity volume and manpower cost for incident reporting systems in eight Japanese acute care teaching hospitals. The 24th International Conference on International Society for Quality in Health Care, Boston, U.S.A., 30 September - 3

October, 2007.

8. Imanaka Y. Economics and Policy on Quality of Care in Japan. Workshop on Public Health: Health Policy, Legal Issues and Trade. Taipei: Taiwan, July 23 - 24, 2009. 【招待】
9. Imanaka Y. Accreditation Impact on Healthcare Quality: Evidence and Economics. International Hospital Federation 35th World Hospital Congress. Seoul: Korea, November 6-8, 2007. 【招待】

原著論文 (和文)

1. 大坪徹也, 今中雄一. 自治体病院の医業収支推移に関する規模別要因分析. 日本公衛誌 2008;55(11): 761-767.
2. 福田治久, 今中雄一, 廣瀬昌博, 林田賢史. 臨床研修病院における医療安全システムの構築状況に関する研究. 日本医療・病院管理学会誌 2008;45(2): 95-104.
3. 福田治久, 今中雄一. 感染制御に係るコストとコスト計算の質の評価. 病院管理 2007; 44(2): 143-151.

著書

1. 今中雄一. 医療安全のための医療費—品質原価の実証研究. 日本医師会雑誌 2007; 135(12): 2515-2519.
2. 今中雄一. 質保証の持続と実質的に役立つ活動: 内部評価(監査)から外部評価へ(その3). 日本医療機能評価機構ニュースレター 2007; 5(6): 5.

学会発表 - 日本

1. 猪飼 宏. インフルエンザ予防接種の費用対効果分析にまつわる方法論的課題. 第29回医療情報学連合大会: 広島, 2009年11月21日-25日.
2. 村上玄樹, 林田賢史, 今中雄一, 王紅兵, 烏帽子田彰. 韓国における診療報酬審査制度の現状と課題について 第1報. 第68回日本公衆衛生学会総会: 奈良, 2009年10月21日-23日.
3. 烏帽子田彰, 村上玄樹, 林田賢史, 今中雄一. 韓国における診療報酬審査制度の現状と課題について 第2報. 第68回日本公衆衛生学会総会: 奈良, 2009年10月21日-23日.
4. 今中雄一, 村上玄樹, 林田賢史, 烏帽子田彰. 韓国における診療報酬審査制度の現状と課題について 第3報. 第68回日本公衆衛生学会総会: 奈良, 2009年10月21日-23日.
5. 大坪徹也, 今中雄一, 松田晋哉. 主要診断群からみた救急医療における入院患者の収益性の実態. 第47回日本医療・病院管理学会学術総会: 東京, 2009年10月17日-18日.
6. 濱田啓義, 猪飼宏, 関本美穂, 今中雄一. 妊娠・分娩にかかる個人および社会全体の費用の検討. 第47回日本医療・病院管理学会学術総会: 東京, 2009年10月17日-18日.
7. 関本美穂, 今中雄一. 終末期における入院医療: 疾患・診療パターンと医療費. 医療経済学会総会・第4回研究大会: 東京, 2009年7月18日.
8. ジェイスン・リー, 今中雄一, 関本美穂, 林田賢史, 猪飼宏. 日本の40病院における脳梗

- 塞患者の医療関連感染について -発生率とリスク調整アウトカム- 医療経済学会総会・第4回研究大会: 東京, 2009年7月18日.
9. 本橋隆子, 関本美穂, 今中雄一. 高齢者における大腿骨頸部骨折の在院日数に及ぼす因子—QIPデータを用いた解析—. 第44回日本理学療法学会: 東京, 2009年5月28日-30日.
 10. 本橋隆子, 関本美穂, 今中雄一. 脳梗塞患者の在院日数に及ぼす因子—QIP(Quality Indicator/Improvement Project)データを用いた解析—. 第34回日本脳卒中学会総会: 松江, 2009年3月20日.
 11. 福田治久, Jason Lee, 今中雄一. 病院感染による追加的コスト推定値の透明性・正確性に関する評価. 第24回環境感染学会: 2009年2月27-28日; 横浜. (抄録: 環境感染誌 24Supplement : p382, 2009.)
 12. 福田治久, 今中雄一. 医療安全のための職員研修の実施状況と医療安全専従者の配置状況の関連性. 第3回医療の質・安全学会: 東京, 2008年11月22-24日.
 13. 今中雄一, 林田賢史, 松田晋哉. DPCデータを用いた病院評価—包括支払い方式下での医療の原価の実態—. 第46回日本医療・病院管理学会学術総会: 静岡, 2008年11月15-16日.(抄録: 病院管理 45Supplement : p189, 2008.)
 14. 林田賢史, 今中雄一, 松田晋哉. DPCデータを用いた病院評価—集中治療室(ICU)の利用患者属性とパフォーマンスに関する研究—. 第46回日本医療・病院管理学会学術総会: 静岡, 2008年11月15-16日.(抄録: 病院管理 45Supplement : p191, 2008.)
 15. 大坪徹也, 林田賢史, 今中雄一. 病院収支に及ぼす医師の勤務継続性の影響. 第46回日本医療・病院管理学会学術総会: 静岡, 2008年11月15-16日.(抄録: 病院管理 45Supplement : p101, 2008.)
 16. 村上玄樹, 今中雄一, 林田賢史, 石崎達郎. 国保加入者における健診結果と5年後医療費との関係. 第67回日本公衆衛生学会学術総会: 福岡, 2008年11月5-7日.(抄録: 日本公衆衛生雑誌 Vol.55 No.10 特別附録 : p371, 2008.)
 17. 大坪徹也, 林田賢史, 今中雄一. 全国自治体病院における医師の継続勤務率の分析. 第47回全国自治体病院学会: 福井, 2008年10月16-17日.(抄録: 第47回全国自治体病院学会抄録 <http://www.soubundo.jp/hospital/speech/f/016.html>)
 18. ジェイスン・リー, 今中雄一, 関本美穂, 石崎達郎, 林田賢史, 猪飼宏, 大坪徹也. Risk-adjusted increases in medical resource utilization associated with healthcare-acquired infections in gastrectomy patients. 第3回医療経済学会: 京都, 2008年7月19日.
 19. 後藤悦, 大坪徹也, 今中雄一. 二次医療圏の老人医療と社会経済因子との関係. 第3回医療経済学会: 京都, 2008年7月19日.

20. 福田治久, 今中雄一. 院内医療安全システムの維持・確保に向けた予防・評価コストの関連要因. 第3回医療経済学会: 京都, 2008年7月19日.
21. 山田剛, 今中雄一. 産業連関分析を用いた医療の経済波及効果の推計. 第3回医療経済学会: 京都, 2008年7月19日.
22. 関本美穂, 今中雄一. 病院感染管理におけるインフラストラクチャー・活動度・パフォーマンスの関係. 第2回横幹連合コンファレンス: 京都, 2007年11月29-30日.
23. 林田賢史. 集中治療室 (ICU) の診療体制と診療パフォーマンス. (「岐路に立つ医療—「崩壊」から再建へ」<第二部> 質と安全確保のために、医療業務体制と労働環境はいかにあるべきか). 医療の質・安全学会第2回学術集会: 東京, 2007年11月23-25日.
24. 今中雄一, 福田治久, 廣瀬昌博, 林田賢史. 安全管理および感染制御に要するコスト: 全国大規模研究. 第45回日本病院管理学会学術総会: 横浜, 2007年10月25-26日. (抄録: 病院管理 44Supplement : p172, 2007.)
25. 林田賢史, 今中雄一, 桑原一彰, 他. 集中治療室 (ICU) の機能評価に関する検討—患者重症度の施設間バラツキの分析—. 第45回日本病院管理学会学術総会: 横浜, 2007年10月25-26日. (抄録: 病院管理 44Supplement : p79, 2007.)
26. 福田治久, 今中雄一, 廣瀬昌博, 林田賢史. 安全管理活動の投入資源に関連する施設要因の検証. 第45回日本病院管理学会学術総会: 横浜, 2007年10月25-26日. (抄録: 病院管理 44Supplement : p169, 2007.)
27. 大坪徹也, 林田賢史, 今中雄一. 都道府県別高額医療機器の需給バランスと導入傾向に関する一考察. 第45回日本病院管理学会学術総会: 横浜, 2007年10月25-26日. (抄録: 病院管理 44Supplement : p216, 2007.)
28. 川崎一良, 関本美穂, 石崎達郎, 今中雄一. 日本の麻酔科医業務状況に関する調査(第2報). 日本麻酔科学会第54回学術集会: 札幌, 2007年5月31-6月2日.
29. 林田賢史. 診断群分類の原価把握とそれに伴う収支分析、業務量分析、機能評価. (「DPCで何が見えるのか」). 第11回日本医療情報学会春季学術大会: 大阪, 2007年6月15-16日.
30. 勅使河原弘美, 氏繩優子, 清水厚子, 石崎達郎, 林田賢史, 今中雄一. 長浜市個別健康支援プログラム「ながはまメタボリックやっつけ隊!」の取り組み 1. 事業の概要と参加継続率. 第66回日本公衆衛生学会: 松山, 2007年10月24-26日.
31. 氏繩優子, 勅使河原弘美, 清水厚子, 石崎達郎, 林田賢史, 今中雄一. 長浜市個別健康支援プログラムの取り組み 2. プログラム実施前後の検査値の変化. 第66回日本公衆衛生学会: 松山, 2007年10月24-26日.
32. 大坪徹也, 林田賢史, 今中雄一. 自治体病院のパネルデータを用いた財務管理効果の検証.

第2回医療経済学会: 学習院大学, 2007年7月21日.

33. 石崎達郎, 吉田英世, 鈴木隆雄, 今中雄一. 主観的健康度の加齢変化; 縦断データ分析による検討. 第49回日本老年社会科学大会: 札幌, 2007年6月20-22日.

