

Management and Organizational Practices Survey-Hospitals (MOPS-HP): Item-level justifications

Section A. Tenure	
1. What year did you start working at this hospital?	_____ (Year)
<p><i>Question 1 on the MOPS-HP is adapted from the MOPS and the WMS. This question is key for determining whether to ask the respondent for recall data. MOPS-HP’s respondents starting at the hospital after 2019 are not asked to provide any recall data for 2019 to reduce respondent burden and to maximize data quality. Collecting the respondent’s start date is important, since previous findings from MOPS show that the quality of recalled data is correlated to the respondent’s start date (Bloom et al., 2015; Bloom et al., 2019a). These recall data are important to collect since they will provide a snapshot of cross sectional variation, but also information on the longitudinal variation in management practices. These data will support the study of how the adoption of management practices have changed over time, and whether these are correlated with changes in clinical performance – analyses not possible previously due to the lack of longitudinal data on a large sample of hospitals.</i></p>	
2. What year did you start working as a manager at this hospital?	_____ (Year)
<p><i>Similar to a tenure question asked early in the WMS, the MOPS-HP’s second question helps ensure that the collected data is relevant to the sampled hospital. By collecting these data that help characterize the manager, analyses on their relationship with management quality can be studied. Previous research shows that differences in human capital drive diffusion of best practices in both manufacturing and health care management (Bloom and Van Reenen, 2007; Bloom et al., 2016; Bloom et al., 2019b).</i></p>	
Section B. Organizational Characteristics	
3. In 2020, how many licensed beds did this hospital have?	_____ (Number)
<p><i>Question 3 is asked to support validation of the collected MOPS-HP’s data with similar information from the American Hospital Association’s annual survey, which also asks for the number of licensed hospital beds. Tabulations and analyses would potentially include these data on hospital size to evaluate their importance in accounting for variation in management practices.</i></p>	

Section C. Management Practices

The eighteen questions asked in Section C would support the construction of a management practices' index using the MOPS-HP's hospital data that is comparable to the one developed with MOPS' data on manufacturing (Buffington et al., 2018). Data from the WMS – meeting goals, monitoring performance, incentives and human resource management – have also been used to construct ordinal scores, with the lowest score indicating no explicit, formal, or frequent use of these management practices, and the highest score reflecting intensive use or “structured management practices.” (Bloom and Van Reenen, 2007). Research shows these indices are related to a business's productivity and performance, as well as clinical outcomes such as survival from heart attacks (Bloom et al., 2019a; Bloom et al., 2019b).

4. In 2019 and 2020, how frequently were the clinical key performance indicators reviewed by CLINICAL MANAGERS at this hospital?

A **CLINICAL MANAGER** is someone who has employees directly reporting to them, with whom they meet on a regular basis, and whose pay and promotion they may be involved with. A clinical manager is involved in patient care decision-making.

A **CLINICAL KEY PERFORMANCE INDICATOR** is a quantifiable metric used to evaluate the success of any clinical activity or function. For Questions 4, 5, and 6, consider key performance indicators that are used in any clinical activities at this hospital.

5. In 2019 and 2020, how frequently were the clinical key performance indicators given to PROVIDERS at this hospital?

PROVIDERS include physicians, physicians' assistants, advanced practice nurses, and others who are responsible for evaluating, diagnosing, and treating patients. Typically, providers do NOT have employees directly reporting to them.

6. In 2019 and 2020, how frequently were the clinical key performance indicators given to FRONTLINE CLINICAL WORKERS at this hospital?

FRONTLINE CLINICAL WORKERS include all clinical staff with direct patient care responsibilities (such as nurses, nurses' aides, physical/occupational/speech/respiratory therapists, radiology and laboratory technicians), who do NOT have employees directly reporting to them. Do NOT include non-clinical frontline staff such as food services, housekeeping, or maintenance staff.

Select all that apply

2020 2020

Yearly

Quarterly

Monthly

The response options are the same for questions 4-6 on the MOPS-HP. This content is similar to questions 3 and 4 on the 2015 MOPS and questions 6 and 7 on the WMS.

Weekly

Daily

Hourly or more frequently

Never

These questions collect data on an important aspect of management practices. Continuous tracking and communication with all staff are considered more structured management practices than infrequent tracking and communication to just senior staff (Bloom and Van Reenen, 2007). In-depth qualitative studies show hospitals with better performance in terms of survival from heart attacks tend to have clear and well-communicated goals throughout the organization relative to low-performing hospitals (Bradley et al., 2001; Bradley et al., 2012).

7. In 2019 and 2020, where were the physical display boards showing quality and other clinical key performance indicators located at this hospital?

Select one box for each year

2020 2019

All physical display boards were located in one place

Physical display boards were located in multiple places

We did not have any physical display boards, but personnel had access to virtual display boards (for example, via email or intranet).....

We did not have any display boards, physical or virtual

To collect data on the potential use of technology, question 7 on the MOPS-HP includes a response option not provided with the similar question asked on the 2015 MOPS. This third response indicates the hospital did not have any physical display boards, but personnel had access to virtual display boards.

Question 7 is being asked since communication to all hospital staff using different visual management tools are considered more structured management practices than the lack of visual management tools. Similar to questions 4-6, communicating these measures with all staff is considered a more structured practice than sharing these metrics with just senior staff (Bloom and Van Reenen, 2007).

8. In 2019 and 2020, what best describes the time frame of hospital-wide goals for PATIENT CARE at this hospital?

Examples of **hospital-wide goals for patient care**: infection rates, readmission rates, and wait times.

Select one box for each year

2020 2019

Main focus was on short-term (one year or less) patient care goals.....

Main focus was on long-term (more than one year) patient care goals.....

Combination of short-term and long-term patient care goals

No hospital-wide patient care goals (**SKIP to Question 11**)

.....

Question 8 was adapted from the MOPS question on production targets and also relates to the WMS' question that asks about the time horizon for targets. Scoring of responses from the WMS indicate that if the focus is only on short-term targets, these are considered less structured management practices than if a hospital translated long-term targets into specific short-term targets that represent steps to achieving long-term goals (WMS 2009).

9. In 2019 and 2020, how much effort was required for this hospital to achieve its hospital-wide goals for PATIENT CARE?

Select one box for each year

2020 2019

Possible to achieve without much effort

Possible to achieve with less than normal effort

- Possible to achieve with normal effort
- Possible to achieve with more than normal effort
- Only possible to achieve with extraordinary effort

Similar to the MOPS, question 9 on the MOPS-HP asks respondents how much effort was required to achieve the hospital-wide goals for patient care. This question is intended to collect data on goals that are achievable but also stretch goals that are considered challenging or aspirational (Bloom and Van Reenen, 2007).

10. In 2019 and 2020, who was aware of the hospital-wide goals for PATIENT CARE at this hospital?

Select all that apply **2020** **2019**

- Board of Directors and/or President.....
- Senior clinical managers, such as Chief Nursing Officer (CNO) or Chief Medical Officer (CMO)
- Senior non-clinical managers, such as Chief Financial Officer (CFO), Chief Executive Officer (CEO), Chief Operating Officer (COO)
- Clinical managers
- Non-clinical managers (A non-clinical manager has employees reporting to them but is NOT involved in patient-care decision-making)
- Providers
- Frontline clinical workers

Question 10 collects important data for measuring management practices, which are considered more structured when associated with strong communication on performance with all staff as opposed to only senior management (Bloom and Van Reenen, 2007; WMS 2009).

11. In 2019 and 2020, what best describes the time frame of FINANCIAL goals at this hospital?

Select one box for each year **2020** **2019**

- Main focus was on short-term (one year or less) financial goals

Main focus was on long-term (more than one year) financial goals.....
 Combination of short-term and long-term financial goals
 No financial goals (**SKIP to Question 14**)
 I am unfamiliar with financial goals at this hospital (**SKIP to Question 14**)

Questions 11-13 ask about the hospital’s financial goals. Their wording is similar to questions 8-10 on the MOPS-HP that ask about hospital-wide goals for patient care and are similarly justified. Past research using the WMS shows that management practices are related to financial performance as well as clinical outcomes (Bloom et al., 2019b).

12. In 2019 and 2020, how much effort was required for this hospital to achieve its FINANCIAL goals?

Select one box for each year	2020	2019
Possible to achieve without much effort		
Possible to achieve with less than normal effort		
Possible to achieve with normal effort		
Possible to achieve with more than normal effort		
Only possible to achieve with extraordinary effort		

Similar to MOPS and question 9 on the MOPS-HP, question 12 asks respondents how much effort was required to achieve the hospital’s financial goals. The question is intended to collect data on goals that are achievable but also stretch goals that are considered challenging or aspirational for the hospital (Bloom and Van Reenen, 2007).

13. In 2019 and 2020, who was aware of the FINANCIAL goals at this hospital?

Select all that apply	2020	2019
Board of Directors and/or President		

Senior clinical managers (CNO, CMO)

Senior non-clinical managers (CFO, CEO, COO).....

Clinical managers

Non-clinical managers

Providers

Frontline clinical workers

Similar to question 10 on the MOPS-HP, question 13 collects important data for measuring whether the hospital's management practices are more or less structured. More structured management practices are associated with strong communication on performance with all staff as opposed to only senior management (Bloom and Van Reenen, 2007; WMS 2009).

- 14. In 2019 and 2020, what was the primary way CLINICAL MANAGERS were promoted at this hospital?**
- 15. In 2019 and 2020, what was the typical way PROVIDERS were promoted to managerial roles at this hospital?**
- 16. In 2019 and 2020, what was the typical way FRONTLINE CLINICAL WORKERS were promoted to managerial roles at this hospital?**

2020 2019

Select one box for each year

Promotions were based SOLELY on performance, ability, and managerial potential

Promotions were based PARTLY on performance, ability, and managerial potential, and partly on other factors

Promotions were based mainly on factors OTHER THAN performance, ability, and managerial potential

Frontline clinical workers were typically not promoted

The same response options are provided for questions 14-16.

These three questions ask how different categories of hospital workers are promoted, and are adapted from the MOPS. Separate questions are asked for clinical managers, providers, and frontline clinical workers, since cognitive testing revealed that management practices for

different types of workers can vary. Since each type of worker is integral to hospital operations, it is important to collect these data for each.

This information is important for measuring whether the hospital's management practices are more or less structured. More structured practices are indicated by responses indicating the hospital promotes high-performing individuals rather than promoting individuals purely on the basis of tenure (Bloom and Van Reenen, 2007; WMS 2009).

17. In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a CLINICAL MANAGER'S underperformance? Include time spent on remediation.

18. In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a PROVIDER'S underperformance? Include time spent on remediation.

19. In 2019 and 2020, how long did the reassignment or dismissal process typically take after first noting a FRONTLINE CLINICAL WORKER's underperformance? Include time spent on remediation.

Select one box for each year

2020 2019

Within 6 months of identifying a provider's underperformance

After 6 months of identifying a provider's underperformance

Underperforming providers were rarely or never reassigned or dismissed...

The same response options are provided for questions 17-19.

Similar to questions 14-16 that ask about promotions, questions 17-19 ask about management practices for addressing underperforming individuals. The same question is asked about clinical managers, providers, and frontline clinical, since practices can differ for each based on feedback received from cognitively testing the MOPS-HP.

More structured management practices are associated with moving poor performers out of the hospital or department to less critical roles as soon as underperformance is noted (Bloom and Van Reenen, 2007). The least structured practice occurs when a hospital rarely removes underperformers, but more structured than if these individuals remain in their position for more than a year before action is taken (WMS 2009).

20. In 2019 and 2020, how did this hospital typically address problems with patient care delivered by PROVIDERS? Please respond for clinical problems that were NOT serious reportable events.

21. In 2019 and 2020, how did this hospital typically address problems with patient care

delivered by FRONTLINE CLINICAL WORKERS? Please respond for clinical problems that were NOT serious reportable events.

Select one box for each year

2020 2019

We fixed it but did not take further action

We fixed it and took action to make sure that it did not happen again

We fixed it and took action to make sure that it did not happen again and had a continuous improvement process to anticipate problems like these in advance.....

We tried to fix it, but did not remediate problem

No action was taken

The same response options are provided for questions 20 and 21.

While questions these two questions have been adapted from the MOPS, respondents during testing for the MOPS-HP suggested adding an additional response option which was later added – “We tried to fix it, but did not remediate the problem”.

How a hospital addresses problems with patient care delivery are integral to understanding its management practices. Those that include continuous improvement processes are considered more structured than those that do not (Bloom and Van Reenen, 2007).

Section D. Management Training

22. Which of the following types of management training courses have you participated in?

Select all that apply

Master of Business Administration (MBA) or executive MBA lasting at least one year or more full time.....

Other graduate-level degree programs lasting at least one year or more full time that included management coursework

Selected management courses shorter than one year but longer than one week.....

Selected management courses lasting one week or less

I have not participated in any management training courses

Question 22 on the MOPS-HP is similar to the WMS’ question on the percent of managers with a Master of Business Administration, which has been studied as a potential factor in productivity differences in hospitals (Bloom et al., 2019b).

Section E. Management of Team Interactions

A separate index would be constructed using the data collected from the six questions asked in this section on team interactions and the four questions on staffing under Section F. Data from all of these questions are important for helping to ensure the validity of the index. This section is motivated by recent findings on the importance of team familiarity in health care delivery (Chan, 2016; Clark and Huckman, 2012; Edmondson, 2018) and WMS questions on staff allocations (WMS 2009).

23. In 2019 and 2020, who participated in meetings dedicated to the discussion of clinical outcomes?

Select all that apply	2020	2019
Board of Directors and/or President		
Senior clinical managers (CNO, CMO)		
Clinical managers		
Non-clinical managers		
Providers		
Frontline clinical workers		
We did not hold meetings dedicated to the discussion of clinical outcomes (SKIP to Question 29)		

Question 23 is similar to question 7c on the WMS that asks who meets to review the hospital’s performance indicators. More structured management practices are associated with more widespread communication with staff (Bloom and Van Reenen, 2007; WMS 2009).

24. In 2019 and 2020, how often did CLINICAL MANAGERS hold meetings that were dedicated to the discussion of clinical outcomes at this hospital?

Select all that apply	2020	2019
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- Yearly
- Quarterly
- Monthly
- Weekly
- Daily or multiple times within a day.....

Question 24 collects important data on monitoring clinical performance, and frequent and structured communications are considered more structured than infrequent communications (Bloom and Van Reenen, 2007; WMS 2009).

25. In 2019 and 2020, what best describes the intent of the meetings that were dedicated to the discussion of clinical outcomes at this hospital?

Select one box for each year	2020	2019
The meetings were used exclusively to report past performance		
The meetings were used exclusively to discuss ways to improve future performance		
The meetings were used to report past performance, as well as ways to improve future performance		

Question 25 collects important information for measuring whether the hospitals are more or less structured. Continuous improvement is considered a more structured management practice than exclusively focusing on past or future performance.

The WMS asks about continuous improvement, with more structured practices associated with exposing problems in a structured way and resolving them as a regular business process. Interviewers for the WMS also ask about meetings to discuss performance, and if a hospital indicates that the objectives of these meetings are clear to all participants, this management practice is rated as more structured than if the meeting’s agenda is unknown and its purpose is not explicitly stated.

26. In 2019 and 2020, what best describes who could view data during meetings dedicated to the discussion of clinical outcomes?

Select all that apply	2020	2019

Board of Directors and/or President
Senior clinical managers (CNO, CMO)
Clinical managers
Non-clinical managers
Providers
Frontline clinical workers
The meetings did not usually involve viewing data

Question 26 is important for collecting information on the use of data by more than just senior staff, and more structured management practices are associated with involving all levels of staff (Bloom and Van Reenen, 2007).

27. In 2019 and 2020, what best describes what happened after meetings dedicated to the discussion of clinical outcomes?

Select one box for each year	2020	2019
Follow-up plans were drafted or revised, but adherence was not actively monitored		
Follow-up plans were drafted or revised, and adherence was actively monitored		
No follow-up plans were drafted or revised (SKIP to Question 29).....		

For question 27, more structured management practices are indicated if the hospital monitors adherence to the follow-up plan, which helps to ensure continuous improvement (Bloom and Van Reenen, 2007; WMS 2009).

28. In 2019 and 2020, who could view follow-up plans drafted or revised after meetings dedicated to the discussion of clinical outcomes?

Select all that apply	2020	2019

Board of Directors and/or President
Senior clinical managers (CNO, CMO).....
Clinical managers
Non-clinical managers
Providers.....
Frontline clinical workers

Question 28 collects important data for measuring whether the hospital’s management practices are more or less structured. As noted elsewhere, more structured practices are associated with widespread communication and if follow-up steps are clear to all (WMS 2009).

Section F. Staffing and Allocation of Human Resources

The data collected in Section F on staffing would be used in combination with the data collected in Section E on team interactions to construct an index measuring these management practices critical to health care delivery. All questions are necessary for the construction of a valid index.

29. In 2019 and 2020, who decided how work was allocated to clinical staff at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO).....		
Senior non-clinical managers (CEO, CFO, COO).....		
Clinical managers		
Non-clinical managers		
Providers.....		
Frontline clinical workers.....		

Staffing decisions are a key aspect of management practices, which are considered more structured if the hospital routinely shifts staff from less busy to busy areas in a coordinated manner and based on documented skills (WMS 2009).

30. In 2019 and 2020, how were FRONTLINE CLINICAL WORKERS moved to different units within this hospital when needed (for example, in response to understaffing or increased patient care needs)?

Select one box for each year	2020	2019
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Frontline clinical workers were moved to different units within this hospital when needed, and ONE central office coordinated this process.....

Frontline clinical workers were moved to different units within this hospital when needed, but NO one central office coordinated this process.....

Frontline clinical workers were not moved to different units within this hospital when needed.....

Staffing decisions are a key aspect of management practices, which are considered more structured if the hospital routinely shifts staff from less busy to busy areas in a coordinated manner by one central office rather than not coordinating the movement through one central office or not moving workers as needed to busier units (WMS 2009).

31. In 2019 and 2020, who determined the typical ratios for nursing staff to patients at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO).....		
Senior non-clinical managers (CEO, CFO, COO).....		
Clinical managers		
Non-clinical managers		
Providers.....		
Frontline clinical workers.....		
State and/or federal regulations.....		

This question is important for measuring the structure of management practices in the hospital and widespread communication is considered a more structured management practice than only senior staff involvement in staffing decisions. The WMS asks a similar question with responses indicated more structured practices if the hospital makes good use of human resources by deploying staff based on their documented skills and the needs of the hospital (e.g., differences in patient acuity in different hospital units on different days) (WMS 2009).

32. In 2019 and 2020, which best describes this hospital’s approach to staffing teams for clinical care, based on the team members' experience working together?

Select one box for each year	2020	2019
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Typically, this hospital attempted to put individuals together with others with whom they HAD worked extensively in the past

Typically, this hospital attempted to put individuals together with others with whom they HAD NOT worked extensively in the past

Typically, this hospital DID NOT ACCOUNT for the familiarity that individuals had working together in the past

The goal of question 32 is to collect information on how proactively a hospital manages team familiarity. Recent evidence documents the importance of team familiarity in healthcare delivery (Clark and Huckman, 2012; Chan, 2016; Edmondson, 2018), which supports its inclusion on the MOPS-HP.

Section G. Standardized Clinical Protocols

Data collected from the questions in this section would support the construction of an index on the hospital's management practices for adopting standardization in clinical activities. These questions are motivated by a large literature on the importance and relative lack of diffusion of processes such as safe surgery checklists (Haynes et al., 2009; Pronovost et al., 2006). All questions are needed for the construction of a valid index.

33. In 2019 and 2020, who of the following USED standardized clinical protocols at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO).....		
Senior non-clinical managers (CFO, CEO, COO).....		
Clinical managers		
Non-clinical managers		
Providers.....		
Frontline clinical workers		
This hospital did not use standardized clinical protocols (SKIP to Question 38).		

As noted above, the use of checklists helps to promote the adoption of preferred health care delivery practices. Responses to question 33 indicating their widespread adoption among staff are associated with more structured management practices as opposed to their use by fewer

workers (WMS 2009).

34. In 2019 and 2020, who of the following DEVELOPED new standardized clinical protocols at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO)		
Senior non-clinical managers (CFO, CEO, COO).....		
Clinical managers		
Non-clinical managers		
Providers		
Frontline clinical workers		
No new standardized clinical protocols were created at this hospital.....		
Only state and/or federally-mandated clinical protocols were used at this hospital..		

Question 34 collects important information on whether individuals throughout the hospital's hierarchy are involved in the development of protocols. More structured management practices are associated with all staff being involved, and practices are considered less structured if only senior staff are involved. If no new protocols are developed, this indicates less structured management practices (WMS 2009).

35. In 2019 and 2020, who of the following MODIFIED or UPDATED standardized clinical protocols at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO).....		
Senior non-clinical managers (CFO, CEO, COO).....		
Clinical managers		
Non-clinical managers		
Providers		
Frontline clinical workers		
Standardized clinical protocols were not usually modified or updated at this hospital (SKIP to Question 37).		

Widespread staff involvement and ongoing improvements indicate more structured practices than having only senior staff involved or not updating protocols (WMS 2009).

36. In 2019 and 2020, within what time period did this hospital typically MODIFY or UPDATE its standardized clinical protocols after the need to do so was first identified?

Select one box for each year	2020	2019
Within one week of identifying the need.....		
Within one month of identifying the need.....		
Within three months of identifying the need		
Within six months of identifying the need		
More than six months after the need was first identified		

The use of protocols such as checklists help to promote the adoption of preferred health care delivery practices. If these protocols are modified or updated quickly, these data indicate the hospital's ability to quickly respond and is related to more structured management practices as opposed to waiting longer to make changes.

37. In 2019 and 2020, who of the following MONITORED the appropriate use of standardized clinical protocols at this hospital?

Select all that apply	2020	2019
Senior clinical managers (CNO, CMO).....		
Senior non-clinical managers (CFO, CEO, COO).....		
Clinical managers		
Non-clinical managers		
Providers		
Frontline clinical workers		
The appropriate use of standardized clinical protocols was not monitored at this hospital		

More structured management practices are indicated by ongoing monitoring of whether standardized processes are followed and widespread involvement of staff, and less structured practices are indicated if monitoring is not done or involves only senior staff (WMS 2009).

Section H. Documentation of Patients' Medical Records

Providers' complete documentation in patients' medical records is important for delivering

clinical care and receiving appropriate payment for services. The data collected in this section would support the development of an index measuring the management of multiple objectives, both clinical and financial. All questions are needed for constructing a valid index.

38. In 2019 and 2020, what actions were taken at this hospital in response to PROVIDERS' incomplete documentation of patients' medical records?

Select all that apply	2020	2019
Required provider to meet with hospital senior managers or supervisors.....		
Required provider to meet with compliance office		
Required provider to undergo peer review		
Required provider to meet with other staff not listed above		
Required provider to receive additional training		
Provider was reassigned or dismissed		
Provider was penalized financially		
No actions were taken for providers' incomplete documentation of patients' medical records		
There was no issue with providers' incomplete documentation of patients' medical records		

In question 38, responses indicating the hospital takes actions to incentivize continuous improvement in documentation are associated with more structured management practices (Bloom and Van Reenen, 2007).

39. In 2019 and 2020, what actions were taken at this hospital to recognize a PROVIDER fully completing their documentation of patients' medical records?

Select all that apply	2020	2019
This hospital used NON-FINANCIAL incentives for complete documentation of patients' medical records		
This hospital used FINANCIAL incentives for complete documentation of patients' medical records		
This hospital used NO incentives for complete documentation of patients' medical records, financial or non-financial		

The use of incentives, financial or non-financial, indicates more structured management practices (Bloom and Van Reenen, 2007).

References

- Bloom, N., E. Brynjolfsson, L. Foster, R. Jarmin, M. Patnaik, I. Saporta Eksten and J. Van Reenen. 2020a. “What Drives Differences in Management Practices?” *American Economic Review*.
- Bloom, N., R. Lemos, R. Sadun and J. Van Reenen. 2020b. “Healthy Business? Managerial Education and Management in Healthcare.” *Review of Economics and Statistics*, forthcoming.
- Bloom, N., S. R. and V. R. J. 2016. Management as a Technology. *NBER Working Paper 22327*.
- Bloom, N., C. Propper, S. Seiler and J. Van Reenen. 2015. “The Impact of Competition on Management Quality: Evidence from Public Hospitals.” *The Review of Economic Studies* 82(2): 457–489.
- Bloom, N., R. Lemos, R. Sadun, D. Scur and J. Van Reenen. 2019. “The New Empirical Economics of Management.” *Journal of the European Economic Association*.
- Bloom, N. and J. Van Reenen. 2007. “Measuring and Explaining Management Practices Across Firms and Countries.” *The Quarterly Journal of Economics* 122(4): 1351–1408.
- Bradley, E. H., L. A. Curry, E. S. Spatz, J. Herrin, E. J. Cherlin, J. P. Curtis, J. W. Thompson, H. H. Ting, Y. Wang and H. M. Krumholz. 2012. “Hospital Strategies for Reducing Risk-standardized Mortality Rates in Acute Myocardial Infarction.” *Annals of Internal Medicine* 156(9): 618-626.
- Bradley, E. H., E. S. Holmboe and J. A. Mattera. 2001. “A Qualitative Study of Increasing β -Blocker Use after Myocardial Infarction.” *JAMA* 285(20): 2604-2611.
- Buffington, C., L. Foster, R. Jarmin, and S. Ohlmacher. 2017. “The Management and Organizational Practices Survey (MOPS): An Overview.” *Journal of Economic and Social Measurement*, 42(1), 1-26.
- Buffington, C., A. Hennessy, and S. Ohlmacher. 2018. “The Management and Organizational Practices Survey (MOPS): Collection and Processing.” U.S. Census Bureau’s Center for Economic Studies Working Paper Series CES 18-51.
- Chan, D. 2016. “Teamwork and Moral Hazard: Evidence from the Emergency Department.” *Journal of Political Economy* 124.
- Clark, J. and R. Huckman. 2012. “Broadening Focus: Spillovers, Complementarities and Specialization in the Hospital Industry.” *Management Science* 58(4): 708–722.

Edmondson, A. 2018. *The Fearless Organization: Creating Psychological Safety in the Workplace for Learning, Innovation, and Growth*, John Wiley & Sons.

Haynes, A. B., T. G. Weiser, W. R. Berry, S. R. Lipsitz, A. H. Breizat, E. P. Dellinger, T. Herbosa, S. Joseph, P. L. Kibatala, M. C. Lapitan, A. F. Merry, K. Moorthy, R. K. Reznick, B. Taylor, A. A. Gawande for the Safe Surgery Saves Lives Study. 2009. "A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population." *New England Journal of Medicine* 360(5): 491-499.

Pronovost, P., D. Needham, S. Berenholtz, D. Sinopoli, H. Chu, S. Cosgrove, B. Sexton, R. Hyzy, R. Welsh, G. Roth, J. Bander, J. Kepros and C. Goeschel. 2006. "An Intervention to Decrease Catheter-Related Bloodstream Infections in the ICU." *New England Journal of Medicine* 355(26): 2725-2732.

World Management Survey. 2009. Healthcare Instrument.

https://cdnstatic8.com/worldmanagementsurvey.org/wp-content/images/2011/01/Healthcare_Survey_Instrument_20110110.pdf