

Preoperative Clinic Waiting

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Updated 02/03/23



Waiting Times and Patient Satisfaction with Anesthesia Preoperative Evaluation Clinics

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Financial Disclosure

- I am employed by the University of Iowa, in part, to consult and analyze data for hospitals, anesthesia groups, and companies
- Department of Anesthesia bills for my time, and the income is used to fund our research
 - I receive no funds personally other than my salary and allowable expense reimbursements from the University of Iowa, and have tenure with no incentive program
 - I own no healthcare stocks (other than indirectly through mutual funds)

Preoperative Clinic Waiting

- As you “Record your answer,” count how many of the 19 questions answered correctly
 - No credit for questions not answered
- At end of lecture, submit your count in poll
- Evaluate how well you and your colleagues can predict results of management studies
 - All questions have 1 correct (best) answer



Preoperative Clinic Waiting Topics to be Covered

- Patients' principal concern – communication
- Patients' principal preventable concern
- Most patients' maximum acceptable waiting time in preoperative evaluation clinic
- Typical ratios of mean waiting time to mean evaluation time
- Two options for reducing mean waiting time
- Priorities for preoperative clinic scheduling and management with few or no drawbacks
- Predicting mean evaluation time

Most Important Preanesthesia Concerns of Patients

➤ Survey

Aust H et al. Anaesthetist 2011



Most Important Preanesthesia Concerns of Patients

- Survey
 - Do not have to go to the clinic
 - Waiting time in clinic is a few minutes
 - Interview by the anesthesiologist who will do anesthetic
 - Computer and video assisted materials
 - Convenient seating, drinks, and snacks

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% patients

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10%

28%

51%

6%

6%



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Most Important Preanesthesia Concerns of Patients

- Randomization to one of four groups
 - Time spent at evaluation was either: typical or increased by 50%, to be empathetic, to ask about anxiety, discuss concerns, etc.
 - Same or different anesthesiologist evaluated patient in clinic and cared for them in OR
 - No saying “nice to see you again,” etc.

Soltner C et al. Br J Anaesth 2011



Most Important Preanesthesia Concerns of Patients

- Difference in satisfaction achieved by more time with patient and an empathetic attitude
 - 20% more satisfied
 - 15% more satisfied
 - 10% more satisfied
 - 5% more satisfied
 - No difference (+/- 2%)
 - 5% less satisfied



Most Important Preanesthesia Concerns of Patients

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Most Important Preanesthesia Concerns of Patients

- Difference in satisfaction from having *same anesthesiologist*
 - 20% more satisfied
 - 15% more satisfied
 - 10% more satisfied
 - 5% more satisfied
 - No difference (+/- 2%)
 - 5% less satisfied



Most Important Preanesthesia Concerns of Patients

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Most Important Preanesthesia Concerns of Patients

- Difference in satisfaction from having same anesthesiologist
 - 20% more satisfied
 - 15% more satisfied
 - 10% more satisfied
 - 5% more satisfied
 - No difference (+/- 2%)
 - 5% less satisfied
- Thus, greatest concern in observational study and substantive effect in randomized trial

Most Important Preanesthesia Concerns of Patients

- % patients who correctly identified whether anesthesiologist in clinic was the same or different from the one in OR?
 - 50%
 - 60%
 - 70%
 - 80%
 - 90%
 - 95%



Most Important Preanesthesia Concerns of Patients

- % patients who correctly identified whether anesthesiologist in clinic was the same or different from the one in OR?
 - 50%
 - 60%
 - 70%
 - 80%
 - 90%
 - 95%

➤ Record your answer



Most Important Preanesthesia Concerns of Patients

- % patients who correctly identified whether anesthesiologist in clinic was the same or different from the one in OR?
 - 50%
 - 60%
 - 70%
 - 80%
 - 90%
 - 95%



Most Important Preanesthesia Concerns of Patients

- Same anesthesiologist important to 40% of patients (193/479)
- Among those patients, when continuity of care not received versus received, >3-fold greater dissatisfaction with overall anesthetic ($P < .001$)

Koster KL et al. Die Anaesthesiologie 2023



Preoperative Clinic Waiting Topics to be Covered

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- Predicting mean evaluation time

Preoperative Evaluation Clinic Survey Findings

- Survey sent to patients after visit
- Which was their priority for improvement?
 - Reception (e.g., addressed in pleasant manner)
 - Waiting (e.g., waiting time)
 - Nurse (e.g., understandable answers)
 - Anesthesiologist (e.g., explanation of risks)
 - Other (e.g., brochure)

Edward GM et al. Br J Anaesth 2008



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Preoperative Evaluation Clinic Survey Findings

- Survey was also completed by residents and anesthesiologists working at the clinic
- Which was their priority for improvement?
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Preoperative Evaluation Clinic Survey Findings

- Waiting time as construct can be highly correlated with “how clearly ... receptionist explain[s] what happens during the visit”

Stoddard DR et al. 2016 Mil Med



Preoperative Evaluation Clinic Survey Findings

- Waiting time as construct can be highly correlated with “how clearly ... receptionist explain[s] what happens during the visit”
- Upon arrival, even if there will be substantial waiting, do prepare the patient for “what to expect during their visit”



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Waiting Times that Patients Consider Acceptable

Edward GM et al. Eur J Anaesthesiol 2010



Waiting Times that Patients Consider Acceptable

- Measure each patient's waiting time and ask the patient if the wait was acceptable
- What is maximum minutes of waiting that most ($> 50\%$) patients consider acceptable?
 - 5 minutes
 - 10 minutes
 - 15 minutes
 - 20 minutes
 - 30 minutes
 - 40 minutes



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 - 20 minutes
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 - 40 minutes
- [Record your answer for The Netherlands](#)



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Waiting Times that Patients Consider Acceptable

- Measure each patient's waiting time and ask the patient if the wait was acceptable
- What percentage of the patients considered waiting > 15 minutes to be acceptable?
 - 9%
 - 19%
 - 29%
 - 39%
 - 49%



Waiting Times that Patients Consider Acceptable

- Measure each patient's waiting time and ask the patient if the wait was acceptable
 - What percentage of the patients considered waiting > 15 minutes to be acceptable?
 - 9%
 - 19%
 - 29%
 - 39%
 - 49%
- Record your answer (Europe, not USA)



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What Meant by "Waiting" from Scheduled Start Time

- Patient shows up 1.5 hours early and is seen 1.0 hours after arrival
 - Waiting ("tardiness") = 0 minutes
- Scenario shows definition is not a limitation
 - Patients are scheduled to be seen by a provider at 8:00 AM, 8:30 AM, ...
 - However, every patient arrives at 8:00 AM
 - If measure of waiting starts at 8:00 AM, then same as having 100% walk in clinic



What Meant by “Waiting” from Scheduled Start Time

- Patient scheduled for 10:00 AM appointment
- Patient arrives at 9:55 AM
- Chart is reviewed starting at 9:56 AM
- Patient is seen starting at 10:45 AM
- Waiting (tardiness) from patient perspective is 45 minutes



Rule of Thumb (Heuristic) on Clinic Waiting Time

- Mean waiting time $>$ mean consultation time
 - For scheduled appointments
 - Actual ratios 1.5, 1.8, and 1.9
 - For unscheduled appointments
 - Ratios larger than 2.0
 - Important issue is not the ratio, but that the waiting time $>$ consultation time

Dexter F. Anesth Analg 1999



Mean Waiting Times and Mean Evaluation Times

- Mean preoperative evaluation time was 13 minutes
- What was the clinic's mean waiting time?
 - 5 minutes
 - 10 minutes
 - 13 minutes
 - 16 minutes
 - 25 minutes

Edward GM et al. Eur J Anaesthesiol 2010



Mean Waiting Times and Mean Evaluation Times

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 - 10 minutes
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 - 16 minutes
 - 25 minutes

➤ Record your answer



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 - 25 minutes



Rule of Thumb (Heuristic) on Clinic Waiting Time

- Ratio is consequence of the coefficient of variation of evaluation times and perceptions of reasonable patient and staffing idle times
- Applies to tasks that do not stop in middle
 - However, reasonable also for amusement park rides balancing duration and walkup rate
 - Does not apply to time with counselor



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Options to Meet Most Patients' Expectations for Waiting



Options to Meet Most Patients' Expectations for Waiting

- Preoperative evaluation first on day of surgery?



Options to Meet Most Patients' Expectations for Waiting

- Preoperative evaluation first on day of surgery?
- Not wise choice since consequent increase mean turnover time among the 88% of all patients who were ASA Physical Status 2 or 3:
 - 2 minutes
 - 5 minutes
 - 8 minutes
 - 12 minutes
 - 16 minutes



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Dexter F. Anesth Analg 1999



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Nurse Prepopulates Chart Ahead or Entirely by Phone Call



Nurse Prepopulates Chart Ahead or Entirely by Phone Call

- 21 facilities of US non-academic health system
 - Includes 5 (large) referral (tertiary) hospitals
- What % scheduled OR minutes cancelled after 7:00 PM of workday before surgery?
 - 1.6%
 - 3.6%
 - 5.6%
 - 7.6%
 - 9.6%



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Nurse Prepopulates Chart Ahead or Entirely by Phone Call

- Each 10% increase in facility's use of physical preoperative clinic visit (within 8 weeks of surgery) instead of phone call associated with what absolute change in % cases cancelled?
 - 3.0% lesser cancellation rate
 - 1.5% lesser cancellation rate
 - 0.0% difference in cancellation rate
 - 1.5% greater cancellation rate
 - 3.0% greater cancellation rate



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Results Explained by Cancellations among Inpatients

Dexter F et al. Anesth Analg 2014
Epstein RH, Dexter F. Anesth Analg 2015



Results Explained by Cancellations among Inpatients

- What % total cancelled minutes of OR time attributable to patients who were inpatient preoperatively: nonacademic and academic?
 - 4% and 25%
 - 19% and 40%
 - 34% and 55%
 - 49% and 70%
 - 64% and 85%

Dexter F et al. Anesth Analg 2014



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 - 49% and 70%, SE 2%
 - 64% and 85%



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- What % total cancelled minutes of OR time attributable to patients who were inpatient preoperatively: nonacademic and academic?
 - 4% and 25%
 - 19% and 40%
 - 34% and 55%
 - 49% and 70%, SE 2%
 - 64% and 85%

26.8% cancellation rate among the cases of patients who are inpatient preoperatively



Anesthesiologist Evaluation Using Telemedicine Software



Anesthesiologist Evaluation Using Telemedicine Software

- Among German patients from large metropolitan area, what percentage would choose video telephony again, the alternative being preoperative clinic visit?
 - 12% (12 of 97)
 - 25% (24 of 97)
 - 50% (48 of 97)
 - 74% (72 of 97)
 - 98% (95 of 97)



Anesthesiologist Evaluation Using Telemedicine Software

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Patient Completes Detailed Questionnaire to Bypass Clinic



Patient Completes Detailed Questionnaire to Bypass Clinic

- Among adult patients from the Netherlands, what percentage using web application with detailed tree of questions are approved for surgery by electronic screening?
 - 12% (167 of 1395)
 - 29% (409 of 1395)
 - 48% (670 of 1395)
 - 71% (990 of 1395)
 - 92% (1283 of 1395)



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Percentage Patients Show-up at Virtual or In-person Clinic



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- Among gynecology patients in Ireland, what percentages fail to show-up for virtual versus in-person preoperative appointments?
 - 1.8% virtual vs. 8.7% in-person
 - 8.7% virtual vs. 1.8% in-person
 - 0.6% virtual vs. 2.9% in-person
 - 2.9% virtual vs. 0.6% in-person



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(Both groups' N \geq 1398, P < 0.0001)



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Dexter F. Anesth Analg 1999



Options to Meet Most Patients' Expectations for Waiting

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 - Example: When I was resident, patients waited on ward for my preoperative visit, but they thought there was medical need

Dexter F. Anesth Analg 1999



Options to Meet Most Patients' Expectations for Waiting

- Reduce mean by completing much of the evaluation before patient arrives at the clinic
- Provide patient activity instead of waiting
 - Example: When I was resident, patients waited on ward for my preoperative visit, but they thought there was medical need
 - Example: Watch video but duration of video experience adapted to providers' availability



Effect of Informational Video on Evaluation Time

- Patients are assigned at random to view or not to view an informational video before interview for anesthesia evaluation
- Effect of video on evaluation time:
 - 50% briefer
 - 30% briefer
 - No difference
 - 30% longer
 - 50% longer



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Effect of Informational Video on Evaluation Time

- Patients are assigned at random to view or not to view interactive computer program before interview for anesthesia evaluation
- Effect of program on evaluation time:
 - 50% briefer
 - 30% briefer
 - No difference
 - 30% longer
 - 50% longer



Effect of Informational Video on Evaluation Time

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Clinic Scheduling Approaches to Reduce Mean Waiting Time

- Assure providers start working on time
- If cannot adjust provider availability hourly to match walk-in demand, schedule patients
 - Achieves near even workload among hours of day, even if many patients arrive earlier or later than appointment

Dexter F. Anesth Analg 1999



Clinic Management Approaches to Reduce Mean Waiting Time

- Do not schedule patients to specific provider
 - Each provider is busy when patient(s) is waiting
 - If prepopulate record before patient arrives, any provider can complete the evaluation
- Do not assign patients to specific providers based on the relative speeds of the providers
 - Focus attention on having a sufficient total number of providers available to see patients

Dexter F. Anesth Analg 1999

Zonderland ME et al. Anesth Analg 2009

Dexter F et al. Anesth Analg 2013



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Predicting Mean Evaluation Time

- Which is the most accurate predictor?
 - Number of medications
 - ASA physical status
 - Surgical procedure complexity (ASA base units)
 - Time of day (e.g., longer evaluations later)
 - Age

Dexter F et al. Anesth Analg 2012



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Using Medication List from Electronic Medical Record

- Updated since component of “meaningful use”
- When scheduling appointment, look at the list
- Obtain corresponding appointment duration from two column table
 - Example: printed and kept at computer

Smallman B, Dexter F. Anesth Analg 2010



Using Medication List from Electronic Medical Record

- Patients with 0 to 2 medications could be scheduled for 25 minutes
 - 25 minutes = $1.21 \times$ mean 20 minutes
 - Value of 1.21 compensates for factors that tend to increase patient waiting
- Patients with 12 to 20 medications could be scheduled for 45 minutes
 - 45 minutes = $1.21 \times$ mean 35 minutes

Dexter F. Anesth Analg 1999

Dexter F et al. Anesth Analg 2012



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- As you “Record your answer,” count how many of the 19 questions answered correctly
 - No credit for questions not answered
- At end of lecture, submit your count in poll
 - Submit your count using Zoom poll
- Evaluate how well you and your colleagues can predict results of management studies
 - All questions have 1 correct (best) answer

Review – Summarize the Facts of the Talk

Create Expectations for Preoperative Clinic Director

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- Typical ratios of mean waiting time to mean evaluation time
- Two options for reducing mean waiting time
- Priorities for preoperative clinic scheduling and management with few or no drawbacks
- Predicting mean evaluation time

Value of Learning Science of Operating Room Management

- www.FranklinDexter.net/education.htm
 - Example reports with calculations
 - Lectures on day of surgery decision making, PACU staffing, OR allocation and staffing, turnover times, anesthesia staffing, financial analysis, comparing surgical services among hospitals, and strategic decision making
- www.FranklinDexter.net
 - Comprehensive bibliography of peer reviewed articles in operating room and anesthesia group management