Preoperative Clinic Waiting

- This talk includes many similar slides
  - Paging through produces animation
  - Use right/ left arrow keys, → and ←
- PDF viewers
  - Adobe Acrobat will open directly into Single Page
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- Google Chrome, Microsoft Edge, Firefox, or Safari
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Updated 11/14/24

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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Most Important Preanesthesia Concerns of Patients

- Survey   % patients
  - Do not have to go to the clinic   10%
  - Waiting time in clinic is a few minutes   28%
  - ➤ Interview by the anesthesiologist who will do anesthetic   51%
  - Computer and video assisted materials   6%
  - Convenient seating, drinks, and snacks   6%

Preoperative Clinic Waiting

- As you "Record your answer," count how many of the 19 questions answered correctly
  - No credit for questions not answered

➢ Keep track of your count of correct answers

- At end of lecture, submit your count in poll
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  - All questions have 1 correct (best) answer

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*
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  - 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

- 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

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"

Preoperative Clinic Waiting Topics to be Covered

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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

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?
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➢ Record your answer for The Netherlands

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  - 40 minutes

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?

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)

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%
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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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  - 5 minutes
  - 10 minutes
  - 13 minutes
  - 16 minutes
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➢ Record your answer

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  - 13 minutes
  - ➢16 minutes
  - 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

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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

Epstein RH et al. J Clin Anesth 2017

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Dexter F. Anesth Analg 1999

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Nurse Prepopulates Chart Ahead or Entirely by Phone Call

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- 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%

Dexter F et al. Anesth Analg 2014

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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

Dexter F et al. Anesth Analg 2014

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  - ➢ 0.0% difference in cancellation rate, SE 0.1%
  - 1.5% greater cancellation rate
  - 3.0% greater cancellation rate

Results Explained by Effectiveness of Nurse Triage

- Ten item triage questionnaire completed by nurses during phone interview
  - For example, "do you suffer from diabetes?"
- Each question has one or two follow-up items
  - For example, "do you use insulin?"
- Accurately triages 98% of patients (688/705)

Di Biase M et al. Eur J Anaesthesiol 2024

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

Epstein RH, Dexter F. Anesth Analg 2015

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)

Wienhold J et al. Eur J Anaesthesiol 2021

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  - ➢98% (95 of 97)

Wienhold J et al. Eur J Anaesthesiol 2021

Patient Completes Detailed Questionnaire to Bypass Clinic

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- 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)

Van den Blink A et al. J Clin Anesth 2022

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Van den Blink A et al. J Clin Anesth 2022

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

Popivanov P et al. BMJ Open Quality 2022

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  - 2.9% virtual vs. 0.6% in-person

(Both groups' N ≥ 1398, P < 0.0001)

Popivanov P et al. BMJ Open Quality 2022

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Dexter F. Anesth Analg 1999

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- 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

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

Salzwedel C et al. Anesth Analg 2008

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

➢ Record your answer

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- Effect of video on evaluation time:
  - 50% briefer
  - 30% briefer
  - No difference
  - ➢30% *longer*
  - 50% longer

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

Kakinuma A et al. Anesth Analg 2011

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

➢ Record your answer

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

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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

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

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

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

➢ Record your answer

Predicting Mean Evaluation Time

- Which is the most accurate predictor?
  - ➢ Number of medications, $P < 0.0001$
  - – ASA physical status
  - – Surgical procedure complexity (ASA base units)
  - – Time of day (e.g., longer evaluations later)
  - – Age

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 × 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 × mean 35 minutes

Dexter F. Anesth Analg 1999
Dexter F et al. Anesth Analg 2012

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

➢ 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

Create Expectations for Preoperative Clinic Director

- Patients' principal concern – communication
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- 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