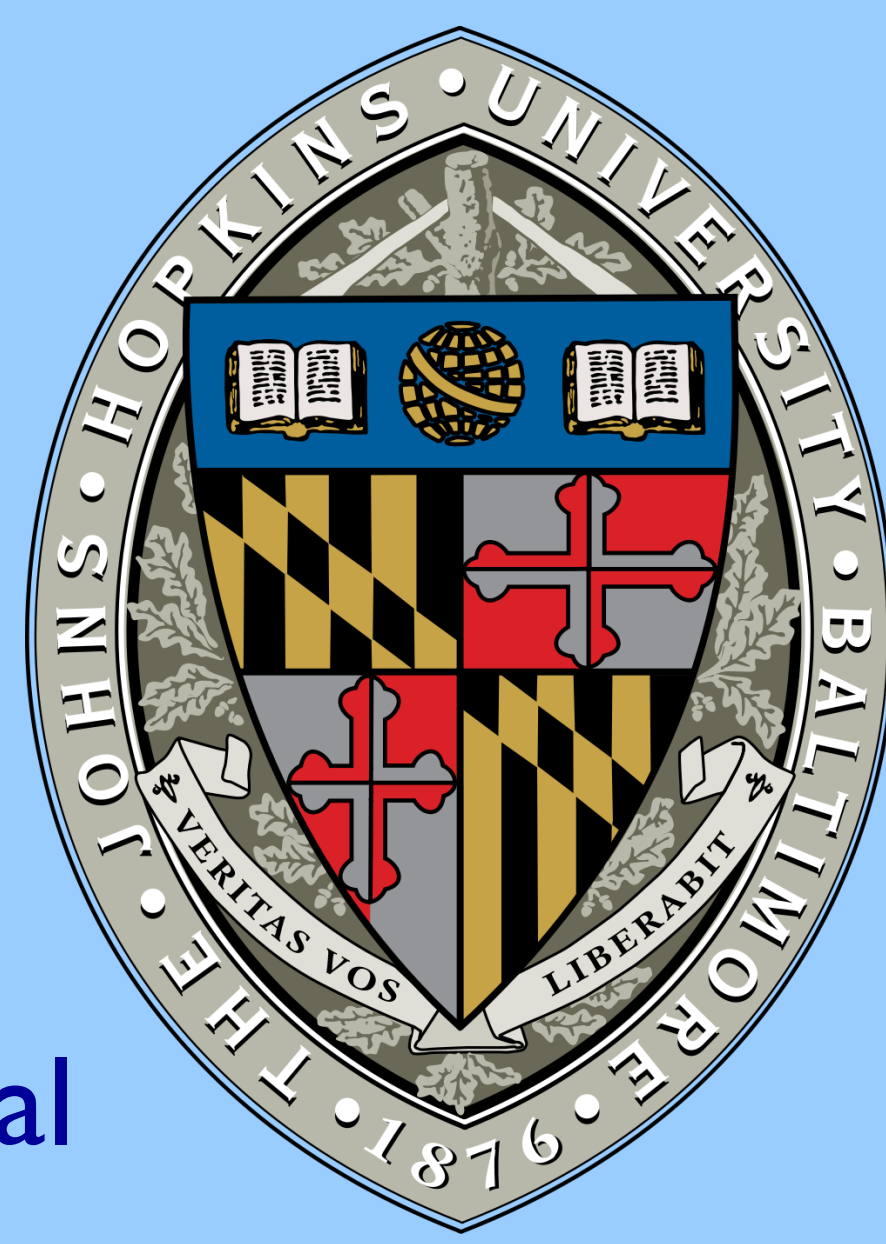


Interventional Radiology Lean Sigma: The Patient Experience and Patient Delays

Kelsi Brooks, Alison Owens, Kelvin Hong, Jenifer Dinicola, Davood Abdollahian, Monique Dawson, Susie Denker, Wowie Parduba, John Werner, Carrie Prigel, Elena Lara and Keyaera Talbert

Johns Hopkins School of Nursing and Interventional Radiology Johns Hopkins Hospital



Background

Interventional Radiology (IR) is a department in which clinician specialists perform invasive procedures for up to 700 patients each month. The procedures include PICC lines, Hickman catheters, biliary tubes, embolization procedures, etc.



Figure 1: Interventional Radiology Procedure Room

Methods

- Lean Sigma Methodology (DMAIC)
 - Define, Measure, Analyze, Improve and Control
- Observation data collected through Value Stream Mapping (VSM)
 - Follow the flow of the patient experience throughout the IR process (Martin, 2014).

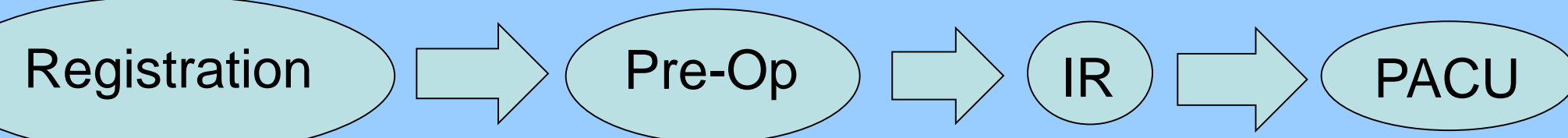


Figure 2: The Patient Progression through IR

- Patient experience surveys using Bivarus Surveys
- Data Analysis through department developed program using ORMIS data
 - Program used to calculate delay minutes

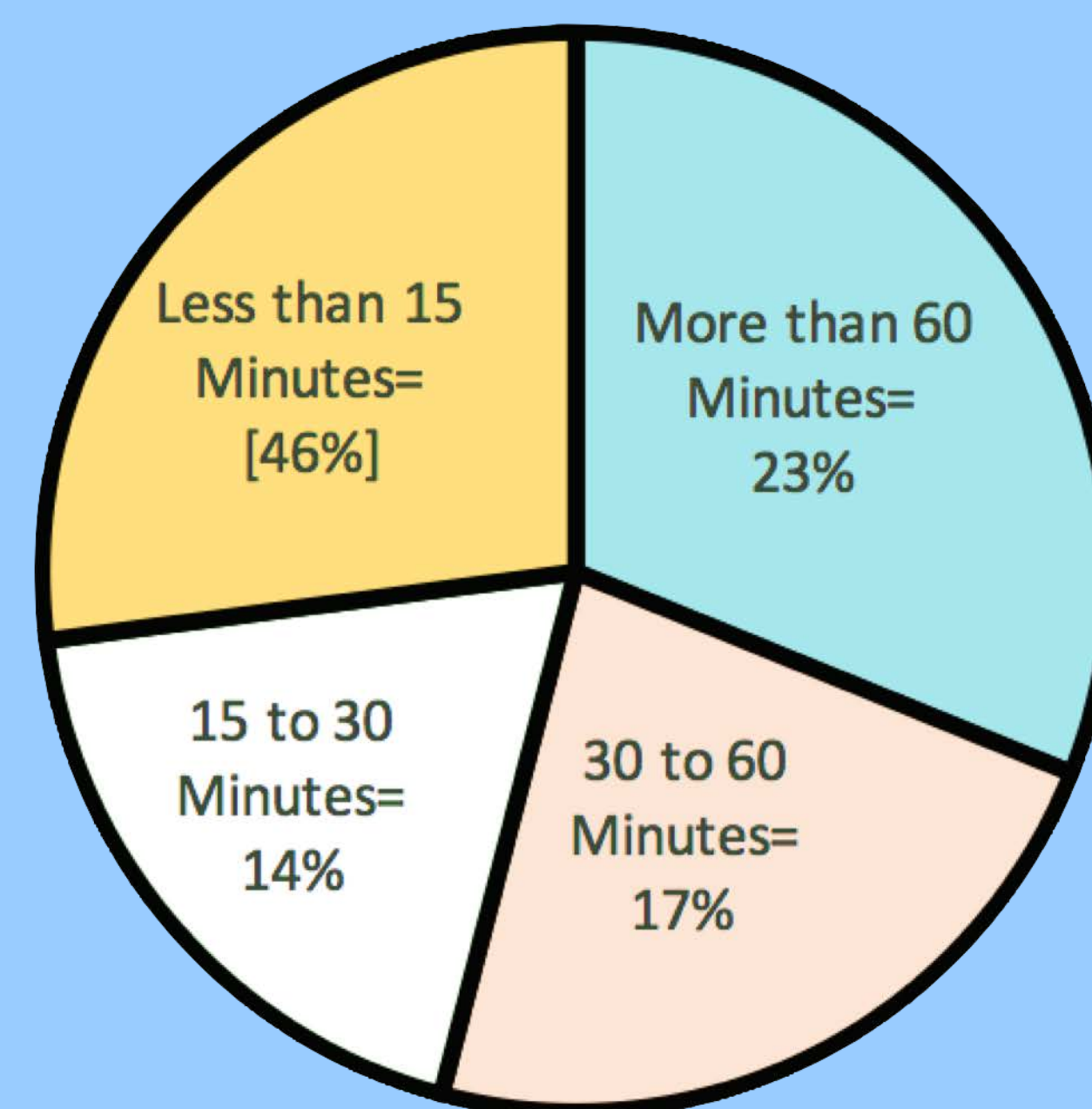
Key Metric: Patient Delay Times

Benefits to reducing patient delay times:

- Improved patient experience
 - Reduced denied days
- Prevent delay of patient discharge
 - Reduced cost
 - Reduced PACU holds

Results

Data Analysis from department developed program using ORMIS data



Additionally, 40% of patients are delayed more than 30 minutes.

Figure 3: Delay Times

Observation Data from VSM

Registration:

- Average amount of time for check-in, registration, and waiting room= 28 minutes.
- 50% of the time staff smiled & 73% of the time staff made eye contact with patients.

Pre-Op:

- Average amount of time in pre-op: 116 minutes with a range of 42-236 minutes.
- 75% of staff introduced themselves, 73% of staff introduced their role, 80% of staff smiled & 93% of staff made eye contact with the patient.

IR:

- 27% of staff introduced themselves & 7% of staff introduced their role to the patient.
- 11.5% of staff asked the patient if they had questions.
- The majority of patients were minimally exposed.

PACU:

- 100% of RNs asked about comfort & pain.
- 86% of RNs asked to bring family back.

FC Observations:

- Outpatient cases are most delayed by waiting for labs, difficult IV sticks, clinically complex patients & improper scheduling for length of case.
- Efficiency recommendations: IR transport team, blood work in advance for outpatients, more communication about delays, schedule anesthesia to one room, fill morning procedure slots & no difficult lines in PA room.

Bivarus Survey Data

- 25% of patients rated the amount of arrival time fair to poor or very poor.
- 42% of patients strongly agree or agree their procedure started later than the scheduled procedure time.
- 86% of patients agree that staff kept them informed if there were delays in their care.
- 95% of patients strongly agree or agree that they were satisfied with their overall IR experience.

Conclusions

Goal: Reduce >60 minute delay times by 50%.

The Lean Sigma Team identified and implemented preliminary interventions and sure hits to achieve this goal.

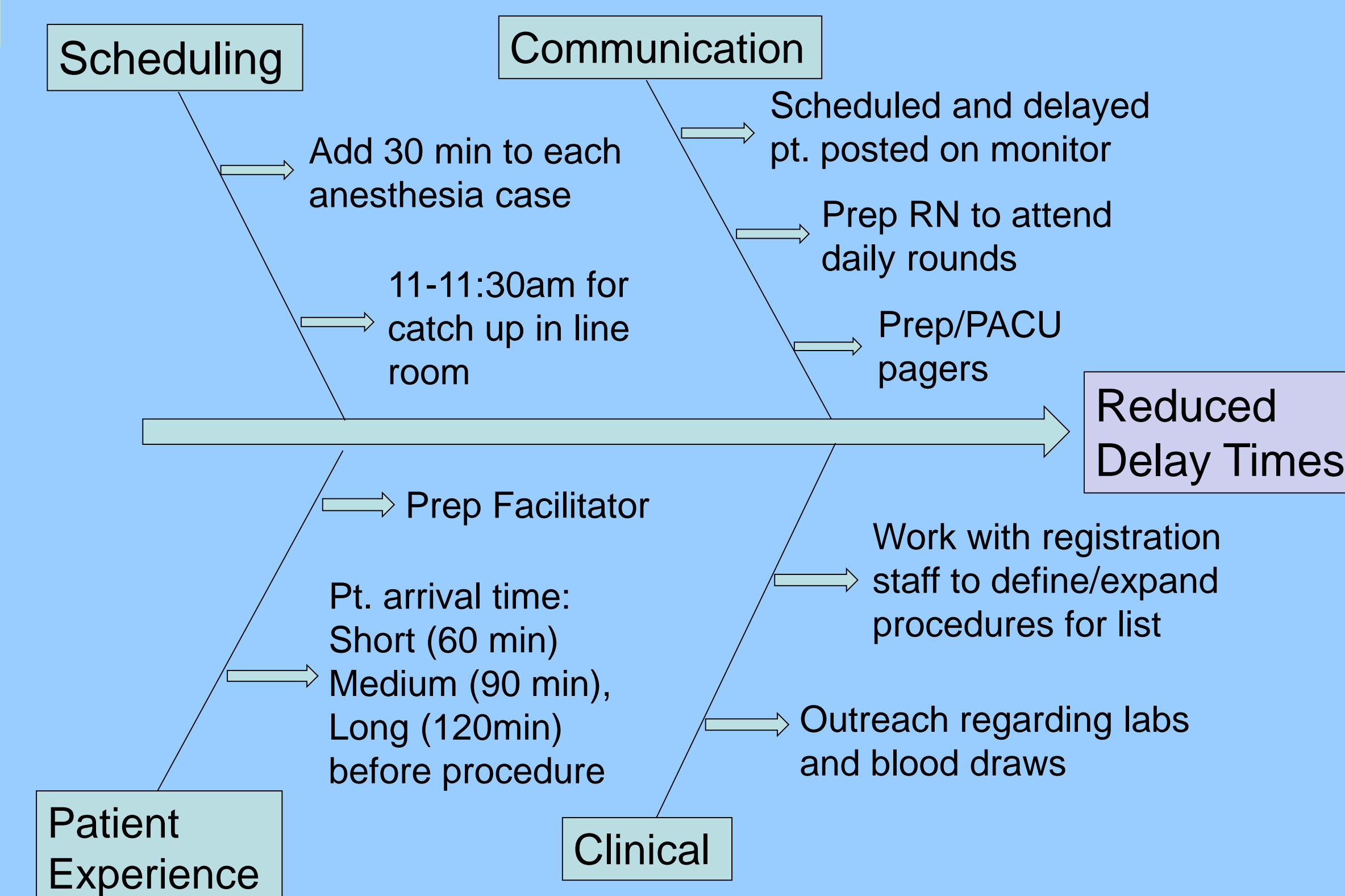


Figure 4: Preliminary Interventions

Future Directions

This project is still in progress and we have developed opportunities for future interventions.

Next steps:

- Transition data into Epic → Validate data
- Identify and implement interventions
- Evaluate for improvement
- Identify and obtain data for additional metrics such as inpatient denied days & PACU/IR holds
- Control plan to maintain improvements

Continue to grow the high investment of the lean sigma team members through:

- Weekly meetings
- Published research papers/posters

References

Martin, C. (2014). Maximized Value Stream Mapping. *APICS*. Retrieved from: http://apics.org/downloads/APICS_2013_Conference_Presentation_Materials__Operational_Efficiency/maximized_value_stream_mapping.pdf.

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