Baseline Assessment of COPD Management at Dhulikhel Hospital Emergency Department in Nepal

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Background

Chronic Obstructive Lung Disease (COPD) is an extremely common problem worldwide, but especially in Nepal.[1]

COPD exacerbations are typically treated in emergency departments in Nepal.[2] It may be a diagnostic challenge for emergency physicians (EP) as there are many other competing diagnoses.

Little is known about the frequency of COPD admissions to the emergency rooms of Nepal, and little is known about the optimal diagnostic approach, treatment modalities, or outcomes in their emergency department (ED).

Specific Aims

1. Understand the baseline characteristics of COPD patients and the service they receive in a Nepali hospital emergency department
2. Identify key areas for quality improvement
3. Implement a quality improvement intervention through a Plan Do Study Act model (PDSA)

Methods

This research was approved by Kathmandu University Institutional Review Committee.
After meeting with local partners to specify areas of potential improvement, we worked to apply quality principles for the long-term benefit of patients.

Repeated PDSA cycles are planned so that continued improvements can be maintained, and successful improvements can be brought into standard care. Data was collected via the electronic data system and paper collection tools at Dhulikhel Hospital for adult COPD patients presenting to the ED in July 2019.

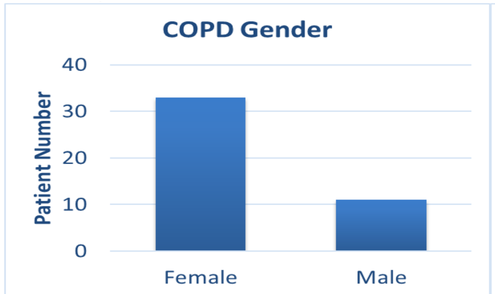
Methods

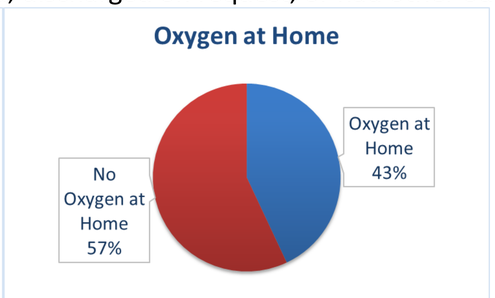
Participants included males and females, >18 years and older, presenting to Dhulikhel Hospital's Emergency Department with COPD exacerbation.

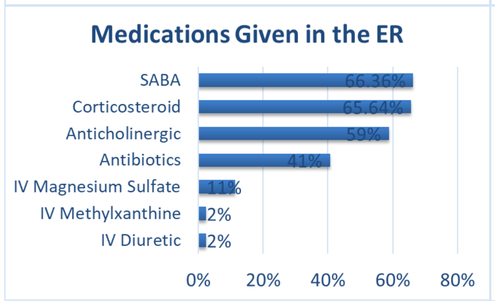
Most of the data was obtained in the electronic data system of Dhulikhel hospital. Key data fields were downloaded into Excel spreadsheets. Any data not in the computerized record was gathered by trained project team members initially on paper data collection tools and entered into an Excel spreadsheet on a password protected device.

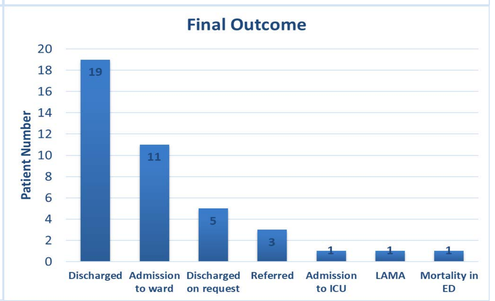
Results

- 44 patients with a known case of COPD (female (n=33); male (n=11)) with a mean age of 69 years were seen
- 55% were hypoxic on presentation (average 77%, range: 44-79%); of these patients, 43% of patients had oxygen access at home
- 47% of patients were reported to have lung crepitations
- 93% of patients were past or present smokers, and 93% of patients were exposed to pollution from open unvented cooking fires
- Three fourths of the patients previously reported visiting ED due to COPD exacerbation; out of 22 patients who were directly interviewed, seven had previously visited the ED within one month
- On clinical assessment, most COPD patients had chronic bronchitis rather than emphysema
- The course of treatment provided in the ED followed closely with guide-based treatments
- Final outcomes were also surveyed and 46% of patients were discharged, 27% were admitted, and others were either referred, discharged on request, or had other outcomes









Discussion

Hypoxia is quite common in this population and oxygen access is not readily available, suggesting this may be a target for further QI studies.

Out of the patients that presented with COPD, females were 3 times more likely to present to the ED suggesting there may be a gender disparity issue.

Of the patients interviewed, one third had visited the ED within the last month likely due to lack of oxygen availability, or severity of disease.

Only a minority of patients were deemed well enough to be sent home indicating that the population presenting to the ED were more sick COPD patients.

Future Work

This baseline has provided important information on targets for quality improvement in cooperation with local leaders. For example:

- Providing a written COPD action plan
- Increasing the access or utilization of oxygen
- Education on pulse oxygen
- Utilizing peak flow for risk stratification and diagnosis may be next steps for providing long-term benefits for COPD patients

Acknowledgements

Dr. Elaine Kohler Summer Academy of Global Health Research for funding and colleagues at Dhulikhel Hospital, Dhulikhel, Nepal

Citations

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