Background

- Multidisciplinary tumor boards at Academic Medical Centers (AMC) create treatment plans that maximize cancer outcomes.
- Guideline based care pathways are alternatives to expert multidisciplinary teams to determine standard of care and maximize outcomes when AMCs are not available.
- NAVYA is a validated online cancer informatics solution that combines artificial intelligence (AI) and rapid review (2 mins/case) by multi-disciplinary tumor board experts at Academic Medical Centers (AMC) to deliver multidisciplinary expert treatment plan to patients within 24 hours.
- Since 2015, 300 AMC cancer experts in USA and India use NAVYA, to scale low cost access to multidisciplinary expertise.

Methodology

- 1300 GI patients who used NAVYA between 5/1/2015 to 8/31/2019 were analyzed.
- Actionable treatment plans generated by NAVYA were compared to NCCN treatment plans.
- In-actionable treatment plans that were just at specialty level (Chemo-radiotherapy vs Surgery) were deemed to lack specificity.
- NAVYA recommendations that did not map with NCCN are reported in detail.
- In 82.9% (3814/4600) decisions, NAVYA added value beyond NCCN.
- In 4.57% (210/4600), NAVYA recommended a patient specific treatment plan that was not a part of NCCN.
- Specific substitutions such as Capecitabine for 5-FU, carboplatin for Cisplatin and Paclitaxel for Docetaxel that were not part of NCCN were made to for patient tolerance of therapy.
- In 2.5% (115/4600), NAVYA recommended treatment plan for clinical scenarios not covered by NCCN such as 2nd line therapy for metastatic biliary tract tumors, 3rd line treatments for patients with good ECOG, lack of clarity in diagnosis or conflicting diagnostic report.
- In 75.85%(3489/4600), Navya used patient specific criteria including resource constraints and patient preference to choose a treatment plan among the multiple pathways provided by NCCN and added actionable treatment details.
- Only in 17.09%(786/4600) decisions was NCCN based CDSS directly actionable without further expert input through NAVYA.

Results

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Conclusion

- Guideline based CDSS are insufficient to make the vast majority of actionable treatment decisions.
- Scaling rapid access to multidisciplinary experts is critical.
- Leapfrogging existing guidelines based CDSS, NAVYA online tumor board makes actionable expert treatment plans possible at a large scale.
- Expanding the reach and impact of such services to USA and globally, can maximize outcomes for patients.