The patient experience of the care delivered by an outpatient intravenous antibiotic service.

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Objective

- To survey patients' experience of the care provided by the outpatient intravenous antibiotic (OPIVA) service at Auckland City Hospital.

Background

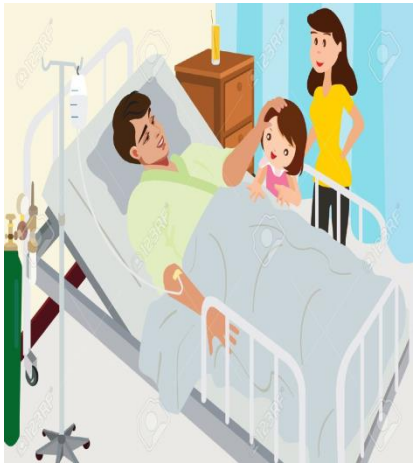
- OPIVA- 1st introduced in 1974 to treat patients with cystic fibrosis & exacerbation of pneumonia in the USA
- 1st introduced at ACH in 1979 but formally introduced in 2000 allowing many patients to receive treatment at home
- 2001- introduction of elastomeric pump bottles

Introduction

- OPIVA service allow patients, who require prolonged intravenous antibiotic treatment, to receive some or all of their treatment at home.[1-3]
- OPAT, HITH or COPAT
- Widely available due to their utility in the treatment of patients with a wide range of infectious diseases.[12]

Models of OPIVA administration

1) Infusion centre or clinic
2) Community nursing services for daily home visits
3) Patient and/or their family members to administer intravenous antibiotics at home



ADHB OPIVA Service

- 150-200 patients annually
- 3958 beds days saved in 2016
- Approximate cost saving of over $5millon

Purpose

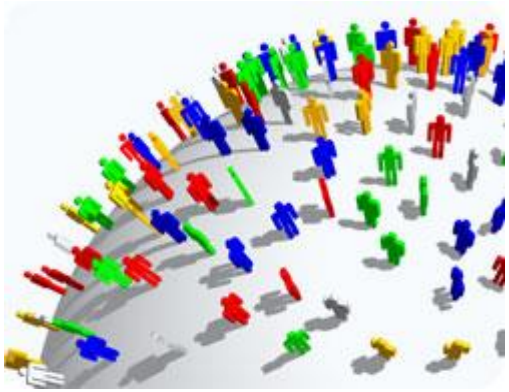
- To understand patients' experiences of the OPIVA service
- To identify areas for potential improvement.

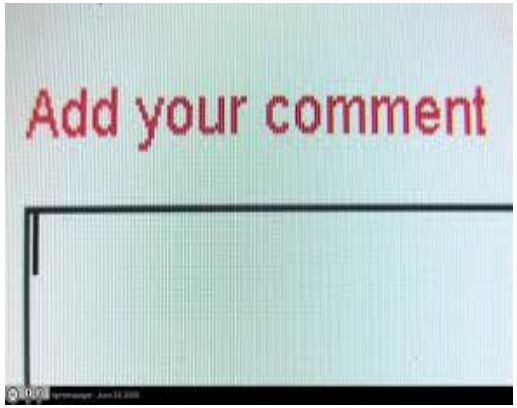
Materials & methods

- Participants were consenting adults (≥15 years of age)
- All patients cared for by the service between 1st of January and 30th of June 2016 were invited to participate in the survey.
- No exclusion criteria were applied.

Survey

- A self-administered questionnaire, which consisted of 35 questions across three sections, was designed for this study.





Data Analysis

- SPSS software v16.0 (Likert scale findings)
- Nvivo version 10 (in text comments)

Ethical Approval

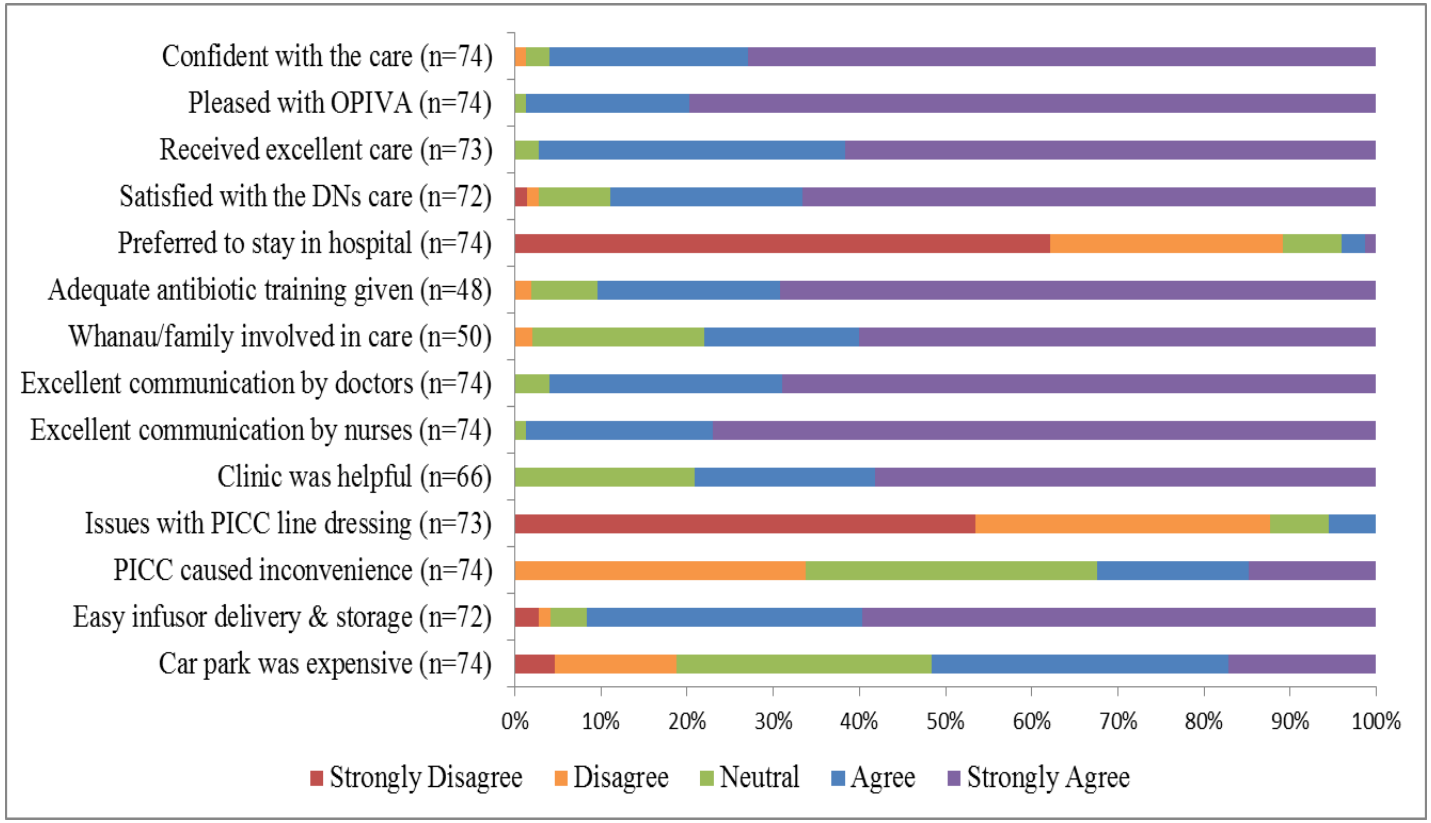
- Obtained from the University of Auckland Human Participants Ethics committee on 14th of December, 2015

Results: Section A

Table: Demographic and clinical features of the OPIVA participants.

Characteristic	Number (%)
Mean Age (std dev)	58.2 (19)
Gender	
Male	49 (65)
Female	26 (35)
Ethnicity	
NZ European	48 (64)
NZ Maori	8 (11)
Pacific People	10 (13)
Asian	7 (9)
Other	2 (3)
English as first language	
Yes	60 (80)
No	12 (17)
Missing data	2 (3)
Lives alone	
Yes	11 (15)
No	60 (81)
Missing data	3 (4)
Central Venous Access Device	
Peripherally-inserted central catheter	71 (95)
Tunnelled central venous catheter	1 (1)
Missing	3 (4)
Person responsible for antibiotic administration	
Patient & District Nurse (DN)	6 (8)
DN	35 (47)
Patient	31 (41)
Missing	3 (4)

SECTION B: LIKERT SCALE RESULTS



Section C: Patient comments
Theme 1: Inconsistent care

- *"The district nurses were inconsistent. The last nurse took PICC line out too early - much inconvenience to myself"*
- *"More regular PICC line dressing changes would have been good as I struggled to keep them on for a week, however the district nurses seemed reluctant."*
- *"PICC line dressing sometimes caused skin allergy. Not all the nurses had good experience in change* [sic] *the dressing."*

CONTINUED

- *"Tape was not placed above the thin part of the tube and it kinked and did not work. I had to go to ED after discharge to get it working … also after hours staff do not know about PICC lines."*
- *"I found that trying to receive this treatment which I desperately needed was difficult to say the least! Had it not been for another specialist involvement, I do not believe would have received it … This was all due to a lack of knowledge by doctors in the areas of my infection."*

Theme 2: Inconvenience associated with health care delivery

- *"No problems at all except for the inconvenience of having to carry antibiotics around in bag but cannot be avoided … Maybe something provided to cover PICC line to enable showering as this proved difficult, like where to place bag to keep dry and to keep PICC dressing dry."*

- *"Not given enough information or help with managing to get to appointments from the team, and parking costs was a disappointment."*

- *"General complaint that all outpatients … should not have to pay for parking because sometimes you can be waiting up to 6 hours. Not affordable."*

- *"On call OPIVA service for weekends would be helpful"*

Discussion

- Widely used in many countries
- Avoids or reduces period of hospitalisation
- Improves patients' quality of life and gives them the option of being treated at home
- Reduces inpatient costs
- Fewer incidence of HAI
- Several patient satisfaction surveys found OPIVA to be safe, acceptable, efficient and patient centred.

Strengths/Limitations

- Small number of participants. Given that the OPIVA service treats 150-200 patients per annum, the response rate represented about 40-50% of those treated over a year, although it was 75% for the six month period.
- The possibility of memory recall bias.
- Lastly, the thematic analysis focussed on the negative comments only which relied on a very limited number of comments from participants.

Conclusion

- Majority of the patients were satisfied with the way the OPIVA team communicated, provided training on antibiotic administration, gave information, and coordinated care.
- The survey identified a requirement for more focussed information in regards to clinic appointments, location and car parking availability and costs.

Recommendations

- Increased consideration of the patient's choice for the method of intravenous antibiotic delivery,
- Improved standardisation of education for antibiotic administration,
- Increased information provision about PICC line and cares,
- Increased whanau/family involvement,
- Improved provider training, coordination and teamwork,
- Extending the availability of OPIVA resources, including creation of an OPIVA website and improving access to the OPIVA team members during overnight and during weekends.

Clinical implications for future studies.

- Our study only focussed on adult patients cared for by the OPIVA service. For future research, it will be important to study the experiences of those patients who were declined by the OPIVA service and learn if we can meet some of the needs of this patient population

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References

- Candel, F. J., Julián-Jiménez, A., & González-Del Castillo, J. (2016). Current status in outpatient parenteral antimicrobial therapy: A practical view. *Revista Espanola De Quimioterapia : Publicación Oficial De La Sociedad Española De Quimioterapia, 29*(2), 55.
- Abusalem, S., Myers, J. A., & Aljeesh, Y. (2013). Patient satisfaction in home health care. *Journal of Clinical Nursing, 22*(17-18), 2426-2435. doi:10.1111/j.1365-2702.2012.04211.x
- Kieran, J., O'Reilly, A., Parker, J., Clarke, S., & Bergin, C. (2009). Self- administered outpatient parenteral antimicrobial therapy: A report of three years experience in the irish healthcare setting. *European Journal of Clinical Microbiology & Infectious Diseases, 28*(11), 1369-1374. doi:10.1007/s10096-009-0794-5
- Leff, B., Burton, L., Mader, S., Naughton, B., Burl, J., Clark, R., Burton, J. R. (2006). Satisfaction with hospital at home care. *Journal of the American Geriatrics Society, 54*(9), 1355-1363. doi:10.1111/j.1532-5415.2006.00855.
- Sims, A. L., Baker, P., Bellamy, R., & Mcmurtry, I. A. (2013). Outpatient parenteral antibiotic therapy in primary hip and knee arthroplasty infection managed with debridement and retention of prosthesis: A retrospective cohort study. *Surgical Infections, 14*(3), 293-296. doi:10.1089/sur.2012.078
- Ansari, A. A. (2013). Outpatient parenteral antimicrobial therapy (OPAT) in the Kingdom of Bahrain: Efficacy, patient satisfaction and cost effectiveness. *The Open Infectious Diseases Journal, 7*(1), 90-95. doi:10.2174/1874279301307010090
- Goodfellow, A. F., Wai, A. O., Frighetto, L., Marra, C. A., Ferreira, B. M., Chase, M. L., Jewesson, P. J. (2002). Quality-of- life assessment in an outpatient parenteral antibiotic program. *The Annals of Pharmacotherapy, 36*(12), 1851.
- Wilson, A., Wynn, A., & Parker, H. (2002). Patient and carer satisfaction with 'hospital at home': Quantitative and qualitative results from a randomised controlled trial. *The British Journal of General Practice : The Journal of the Royal College of General Practitioners, 52*(474), 9-13.

References

- Upton, A., Ellis-Pegler, R. B., & Woodhouse, A. F. (2004). Outpatient parenteral antimicrobial therapy (OPAT) : A review of experience at Auckland Hospital. *New Zealand Medical Journal, 117*(1200)
- Seaton, R. A., & Barr, D. A. (2013). Outpatient parenteral antibiotic therapy: Principles and practice. *European Journal of Internal Medicine, 24*(7), 617-623. doi:10.1016/j.ejim.2013.03.014
- Rucker, R. W., & Harrison, G. M. (1974). Outpatient intravenous medications in the management of cystic fibrosis. *Pediatrics, 54*(3), 358.
- Baker, M. G., Barnard, L. T., Kvalsvig, A., Verrall, A., Zhang, J., Keall, M., Howden-Chapman, P. (2012). Increasing incidence of serious infectious diseases and inequalities in new zealand: A national epidemiological study. *The Lancet, 379*(9821), 1112-1119. doi:10.1016/S0140-6736(11)61780-7
- Marra, C. A., Frighetto, L., Goodfellow, A. F., Wai, A. O., Chase, M. L., Nicol, R. E., Jewesson, P. J. (2005). Willingness to pay to assess patient preferences for therapy in a canadian setting. *BMC Health Services Research, 5*, 43-43. doi:10.1186/1472-6963-5-43
- Corwin, P., Toop, L., Mcgeoch, G., Than, M., Wynn-Thomas, S., Wells, J. E., Richards, D. (2005). Randomised controlled trial of intravenous antibiotic treatment for cellulitis at home compared with hospital. *BMJ: British Medical Journal, 330*(7483), 129-132. doi:10.1136/bmj.38309.447975.EB
- Hitchcock, J., Jepson, A. P., Main, J., & Wickens, H. J. (2009). Establishment of an outpatient and home parenteral antimicrobial therapy service at a london teaching hospital: A case series. *The Journal of Antimicrobial Chemotherapy, 64*(3), 630-634. doi:10.1093/jac/dkp212

References

- Dubois, A., & Santos-Eggimann, B. (2001). Evaluation of patients' satisfaction with hospital-at- home care. *Evaluation & the Health Professions, 24*(1), 84.
- Montalto, M. (1996). Patients' and carers' satisfaction with hospital-in-the- home care. *International Journal for Quality in Health Care : Journal of the International Society for Quality in Health Care / ISQua, 8*(3), 243.
- Eron, L. J., & Passos, S. (2001). Early discharge of infected patients through appropriate antibiotic use. *Archives of Internal Medicine, 161*(1), 61.
- Davis, G., & Woodhead, J. (2016). Setting up a unique outpatient parenteral antimicrobial therapy (OPAT) service. *Journal of Community Nursing, 30*(3), 61-65.
- Richards, D. A., Toop, L. J., Epton, M. J., Mcgeoch, G. R. B., Town, G. I., Wynn-Thomas, S., Abernethy, P. D. (2005). Home management of mild to moderately severe community-acquired pneumonia: A randomised controlled trial. *The Medical Journal of Australia, 183*(5), 235.
- Lemelin, J., Hogg, W. E., Dahrouge, S., Armstrong, C. D., Martin, C. M., Zhang, W., Viner, G. (2007). Patient, informal caregiver and care provider acceptance of a hospital in the home program in ontario, canada. *BMC Health Services Research, 7*, 130.
- Gorski, L. A., & Grothman, L. (1996). Home infusion therapy. *Seminars in Oncology Nursing, 12*(3), 193-201. doi:10.1016/S0749-2081(96)80037-4
- Evans, J. M., Qiu, M., Mackinnon, M., Green, E., Peterson, K., & Kaizer, L. (2016). A multi-method review of home- based chemotherapy. *European Journal of Cancer Care, 25*(5), 883-902. doi:10.1111/ecc.12408
- Auckland District Health Board. (2016). *Report on outpatient experience.*. (No. 7). Auckland, New Zealand: Author.