

Clinical Audit Case Example: Tibial Plateau Levelling Osteotomy (TPLO+) QI initiative

Name of the initiative:	Tibial Plateau Levelling Osteotomy (TPLO+) QI initiative
Initiative start date:	May 2018
Submitted by:	Roundhouse Referrals

Introduction

Roundhouse Referrals launched in September 2017 and is based at The Roundhouse Veterinary Hospital, Glasgow, a Tier 3 RCVS Practice Standards Scheme Accredited Hospital, and part of The Pets'n'Vets Family.

TPLO+ surgery has been performed for canine cruciate disease since May 2018, with three key objectives listed on marketing materials:

- Personal Service
- Perfect Contact
- Great Outcome.

Quality Improvement (QI) was seen as a way of differentiating Roundhouse Referrals from other local referral service providers: to back up clinical claims with evidence of the care provided.

Aims of the clinical audit

The aim of developing a QI programme was to devise a means of objectively assessing clinical and customer service. The objective is to validate their service externally to referring vets/clients and internally to the first opinion team and directly to the referral team members.

In summary, the TPLO+ QI initiative sought to process audits and identify means of improving two overlapping areas:

1. Customer Service
 - **Personal Service:** Did clients 'know the team' and have good continuity of care throughout the referral 'journey'?
 - **Perfect Contact:** Did clients feel informed and supported as to the surgery performed – could they claim 'informed consent'?
2. Clinical Outcome
 - **Clinical Auditing:** The TPLO+ surgeries performed.
 - **Benchmarking:** Our TPLO surgical outcomes.
 - **Continuous Improvement:** Seeking to identify areas to enhance our clinical and customer service.

The QI initiative also sought to assess the impact of initiatives implemented between December 2019 and July 2020:

- a) **Printed Material Changes:** These were enhanced to detail the TPLO+ surgery and patient recovery.
- b) **Continuity of Care:** The impact of the referral clinic getting busier on clients' perception of continuity.
- c) **Clinical Outcome:** Has this improved as the surgical team's experience has increased?
 - o **Staffing Changes:** This assesses the impact of steps taken to maintain consistency of client care through staff changes.

Actions

Data Recording:

The QI initiative used data from each patient that underwent TPLO+ surgery to treat cruciate disease.

To assist in data analysis, a code was embedded in the TPLO+ 'composite' on the Practice Management System (PMS), allowing all patients for which it was used to be easily recalled from the database.

An Excel spreadsheet was created to record each patient's key physical and clinical details required for the QI project to occur, as well as other potential future studies.

All clients gave permission to be involved in the initiative, contacted about their pet's recovery and agreed to the use of their feedback and pets' information for the purposes of the QI initiative.

Questionnaire Design:

It was felt to be most appropriate to use a previously published questionnaire as the basis for the clinical element of the QI Questionnaire.

A literature review was performed and one suitable paper was identified "A comparison of outcomes following tibial plateau levelling osteotomy and cranial tibial wedge osteotomy procedures" (Corr & Brown, 2007) which described the use of a post-surgical questionnaire to assess owner's impression of patients clinical outcome following two cruciate surgery techniques: one of which was TPLO.

There were potential concerns in drawing direct comparisons between the results of the Corr & Brown (2007) paper and Roundhouse Referral's owner questionnaire: notably relating to the patient groups and surgical implants used.

The Corr and Brown group had a mean body weight of 47.9kgs (+/-16.5kgs) and a 3.5mm TPLO non-locking plate was used for all patients. The QI performed however included all of Roundhouse Referral's TPLO+ patients (no weight limitations, range: 6.6kgs – 55.9kgs), TPLO surgical implants from 2.0mm to 3.5mm 'Broad' in size and using a locking/non-locking TPLO plate (Synthes GmBH, Oberdorf).

These differences in inpatient group and implant are note-worthy, but it was still felt appropriate to choose the Corr & Brown paper as the basis of the initial QI initiative for two reasons:

1. To outcome audit the TPLO+ surgeries being performed.
2. With the plan to repeat the study thereby meaning there was scope for 'self-benchmarking' as the QI programme developed.

The Corr and Brown (2007) questionnaire was digitised using Survey Monkey and expanded to include a 'Client Feedback' customer experience (CX) element. The questions in this section were based on standard customer feedback questions that would help assess the CX objectives.

Data Collection:

The digital questionnaire was emailed to clients whose pets had TPLO+ surgery performed at Roundhouse Referrals a minimum of 6 months post-surgery, as this aligned with the Corr and Brown (2007) questionnaire being completed by owners between seven months to 3.25 years post-surgery.

It was sent to 'groups' of around 50 TPLO consecutive TPLO+ patients. One group being sent the questionnaire in December 2019 the more recently in July 2020. This enabled Quality Improvement initiatives to be performed based on the results of the December 2019 Clinical Outcome and Customer Service questionnaire.

Results

As of November 2020, two sets of questionnaire results have been returned for a total of 108 consecutive TPLO+ patients.

The results of the questionnaire are as follows:

Questions 1-3:

Survey Question	Result in Corr and Brown (2007)	2019 Answers	2020 Answers
1. How active was your dog before he/she had a problem?	9/10	8.3/10	8.2/10
2. How would you grade the overall disabling effect of your dog's cruciate injury BEFORE surgery?	6.9/10	6.58/10	6.88/10
3. Did your dog suffer from stiffness after resting before surgery?	5.9/10	5.82/10	5.6/10

Key Findings:

- Each group assessed had similar lameness present before surgery.

There was no significant difference in results between groups, validating the wish to compare our cohorts with each other and the Corr and Brown results.

Questions 4-11:

Survey Question	Result in Corr and Brown (2007)	2019 Answers	2020 Answers
<i>4. How soon after the operation did your dog start to consistently put his/her foot on the ground?</i>	93% said < 21 days	91.1% said < 21 days	96.83% said < 21 days
<i>5. Approximately how long did it take for your dog to regain what you would consider being satisfactory use of his/her leg?</i>	78.5% said < 3 months	89% said < 3 months	87.5% said < 3 months
<i>6. Were there any complications following surgery?</i>	33.3% complications	26.47% complications	29.17% complications
<i>7. How active is your pet now, post-op?</i>	7.82/10	7.52/10	7.92/10
<i>8. How lame is your pet now, following their cruciate injury and TPLO Surgery?</i>	3/10	3.12/10	2.26/10
<i>9. Does your pet currently receive any anti-inflammatory/painkiller medication now?</i>	76.9% said no 15.4% said yes – intermittent 7.7% said yes – constant	83.35% said no 2.94% said yes – intermittent 14.71% said yes – constant	70.83% said no 12.5% said yes – intermittent 16.67% said yes – constant
<i>10. How would you rate the overall success of the TPLO surgery in treating your pet's problem?</i>	69.2% said excellent 23.1% said good 7.7% said satisfactory 0% said poor	85.2% said excellent 11.7% said good 2.94% said satisfactory 0% said poor	87.5% said excellent 12.5% said good 0% said satisfactory 0% said poor
<i>11. If you had a pet with the same problem, would you have the TPLO surgery done again?</i>	84.6% said yes 0% said no 15.4% said not sure	94.12% said yes 2% said no 0% said not sure	100% said yes 0% said no 0% said not sure

Key Findings:

- The December 2019 results show that the initial TPLO+ clinical outcomes were similar to those previously published by Corr and Brown (2007).
- The July 2020 results showed many of the clinical outcomes improved upon the December 2019 results. Of note was earlier use of the operated leg following surgery and lower lameness score at follow-up.
- **Questions 10:** Showed an improvement in owners' opinions of the effectiveness of TPLO+ in treating their pet's problem. It rose from 85.2% to 87.5% of owner's feeling their pets had an excellent outcome. In July 2020 the additional 12.5% of owners felt that their pet had a good outcome.
- **Question 11:** An improvement in the percentage of owners who, if faced with the same problem, would have the TPLO+ surgery performed again. In the Corr and Brown paper, this was 84.6%, while Roundhouse Referrals results rose from 94.12% in December 2019 to 100% in July 2020.

Questions 12-16:

Survey Question	2019 Answers	2020 Answers
<i>12. How easy was it to arrange an appointment with the Roundhouse Referrals team?</i>	72.73% said very easy 21.21 said easy 6.06% said neither difficult nor easy 0% said difficult 0% said very difficult	66% said very easy 20.83% easy 4.17% said neither difficult nor easy 8.33% said difficult 0% said very difficult
<i>13. Did you feel supported throughout the referral process?</i>	100% said yes 0% said no	96% said yes 4% said no
<i>14. Do you feel the plan for managing your dog's recovery following their TPLO surgery plan was adequately explained to you?</i>	96.97% said yes 3.03% said no	100% said yes 0% said no
<i>15. Were you satisfied with the 'continuity of care' received throughout your pet's treatment? i.e. did you see the clinical person you expected at each visit?</i>	90.91% said yes 9.09% said no	95.8% said yes 4.17% said no
<i>16. How likely is it that you would recommend Roundhouse Referrals to a friend or colleague? (NPS Healthcare upper quartile is >77.6)</i>	100.00	88.0

Key Findings:

Question 12: Between December 2019 and July 2020 there was a slight decrease in ease of appointment making, but still over 86% of clients state it was easy, or very easy to make a referral appointment.

Question 13 and 14: Clients felt informed before surgery and supported throughout the referral process. The improvement between December 2019 and July 2020 likely due in part to improved literature informing owners of the surgical procedure.

Question 15: There was an improvement in the continuity of care during between both groups.

Question 16: While this has decreased slightly, a high Net Promotor Score for TPLO+ has been sustained despite an increasing surgical caseload.

Impact

The QI programme has been beneficial to Roundhouse Referrals: clinically, professionally, and commercially.

Improved Clinical Performance:

- **Clinical Audit Results:** Whilst direct parallels cannot be drawn with previous studies, the clinical audit exercise allowed Roundhouse Referrals to meaningfully assess their clinical outcome. The results validated Roundhouse Referrals performance as being acceptable, enabling this to be communicated both to internal and external stakeholders.
- **Ongoing Benchmarking:** Continuous collection of clinical and patient details, as well as repeated use of the identical questionnaire, allowed 'self-benchmarking' and QI by comparing July 2020 to December 2019 results. This enabled the clinical team to provide evidence demonstrating that with increasing experience and refinement of surgical technique their clinical outcome has improved.

Customer Service Validation and Improvement:

- **Improved Client Contact:** Measuring the client's perception of 'informed consent' for the procedure and the impact of the addition of enhanced printed materials has enabled Roundhouse Referrals to be confident that they are successfully getting the message across to clients in an effective, clear and concise manner.
- **Personal Service:** Assessing and reviewing clients' perception of the continuity of care throughout their pets' surgical and recovery journey has been important to Roundhouse Referrals, especially with increasing caseload and the frequent challenges encountered in clinical practice.
- **Perfect Contact:** Measuring factors that underpin 'informed consent' has enabled Roundhouse Referrals to know that the team has successfully maintained standards and enhanced this through the addition of new printed materials relating to the TPLO+ procedure.

Commercial Performance:

- **Marketing Materials:** By clinically auditing and benchmarking performance, Roundhouse Referrals have been able to make strong statements about Roundhouse Referrals clinical performance and customer experience. These have been included in marketing materials and formed a key component of the Roundhouse Referrals marketing campaign.
- **Enhanced Performance:** By having a QI programme that measures Clinical Outcome and Customer Service, Roundhouse Referrals has been able to assess the impact of steps taken to further refine and enhance the TPLO+ service.
- **Additional Clinical Services:** While this QI programme has been based around one specific surgery; it has been of direct benefit to other clinical services due to many elements being reflected in client and patient management across the referral service.

The over-arching aim of the Roundhouse Referral team is achieving the best possible outcome for patient and owner throughout the entire surgical journey and adapting to challenges as they arise.

All of the Roundhouse Referrals Team have directly contributed to the various elements of the QI initiative and understand the projects aims and objectives.

The reasons for starting the QI programme within a comparatively 'young' referral team and a 'new' procedure have also been clear. The results validate the approach taken by all team members: surgical and non-surgical. This has been beneficial for the team's confidence and performance. An important factor in maintaining standards as clinical caseload has increased and expanded.

The results of the questionnaire and the trends in clinical and customer service feedback have been openly discussed by the team. Everyone's feedback has been sought for ideas to continue to improve and refine the performance of TPLO+ as well as other referral services.

Feedback on client communication and how best to maintain continuity of care has come largely from within the team, and formed the basis of refinements to the service that have occurred as the TPLO+ service has developed.

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