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In search of excellence: A program, protocols and software for a total joint center with outcomes

Background: Joint replacements (JRs) constitute the greatest single cost to Medicare. The majority of JRs in the U.S. are performed by low volume surgeons with a wide variability in clinical and financial outcomes. Joint Replacement Centers of Excellence (JRC) are proliferating, their mission: to provide best/predictable clinical outcomes while reducing cost through efficient/standardized care. It is generally accepted that high volume institutions and surgeons have superior outcomes; however, less is known about the outcomes of participants in JRC. We quantified the effects of surgeon case volume and/or compliance within a JRC program on key hip/knee replacement outcomes with significant financial impact.

Materials and Methods: During the 2012 calendar year, data of key outcomes for cases performed by two orthopedic surgeon groups performing total hip/or knee replacements at one large community hospital were analyzed: Group I (JRC) includes surgeons who joined the JRC program and Group II (non-JRC) those who did not. Group I was divided into Group IA (JRC >50) and Group IB (JRC <50) based on surgeons' case volume being more or less than 50 annually. Group I was also divided into Group IC (JRC-Active), comprised of surgeons who regularly attended JRC meetings (>90% attendance) and Group ID (JRC-Passive; <10% attendance). No surgeons in Group II performed more than 50 annual cases. To compare the groups, we chose key outcome variables which have major clinical and financial impacts: blood transfusion rate, discharge to rehabilitation facility versus home, hospital bed days, complications, 30-day readmission, and mortality.

Results: There was a significant decrease in blood transfusion, discharge to rehabilitation facility, and hospital bed days when comparing Group I (N=499) versus Group II (N=96) ($p<.001$; $p<.001$; $p<.001$). Group IA (N=341) versus Group IB (N=158) ($p=.001$; $p<.001$; $p=.005$), Group IC (N=202) versus Group ID (N=297) ($p=.007$; $p=.003$; $p<.001$), and Group IB (N=341) versus Group II ($p<.001$; $p=.004$; $p<.001$). Rates of complications, 30-day readmission, and mortality did not significantly differ among all groups.

Conclusion: Participation in JRC was the major determinant for reduction in blood transfusion, discharge to rehabilitation facility versus home, and hospital bed days. Active/high volume JRC surgeons had the best outcomes. JRC/low volume JRC surgeons far outperformed non-JRC/low volume surgeons. This study is particularly revealing in that low volume surgeons (who perform the majority of joint replacements in the U.S.) can significantly improve certain clinical outcomes and cost savings to the hospital by participating in a well-functioning JRC program.

Biography

Garland received his medical degree from Creighton University (1969) and orthopedic surgery residency at Tulane University (1976). He serves on the editorial board of Orthopedics Today, and has been on the clinical faculty at the University of Southern California for over 35 years. Dr. Garland has published more than 100 peer-reviewed scientific articles and chapters. He is an internationally recognized expert in bone metabolism and his fracture surveys of locations, treatments, and outcomes within orthopedics are considered benchmarks in the field today. Since 2011, Dr. Garland has been the Medical Director for the Joint Replacement Center at Long Beach Memorial.

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