

The Economic Burden of Hospitalization for Cardiac Arrhythmias Requiring Implantable Cardioverter-Defibrillator and Radiofrequency Ablation Among Adult Filipinos—Its Clinical and Equity Implications and Budget Impact Analysis of Proposed Revised PhilHealth Case Rates for Cardioverter-Defibrillator Implantation and Radiofrequency Ablation

Bernadette A. Tumanan-Mendoza MD MSc MHE^{1,2} | Victor L. Mendoza MD MSc^{3,4} | Eden A. Gabriel MD^{5,6} | Giselle G. Gervacio MD^{1,5,7} | Erdie C. Fadreguilan MD⁵ | Michael-Joseph F. Agbayani MD^{1,5,7} | Gladys Ruth S. David MD^{5,6} | Luigi Pierre S. Segundo MD⁸ | Carlos E. De Las Llagas MD⁹ | Magdalena J. Lagamayo MD¹⁰ | Felix Eduardo R. Punzalan MD MSc^{1,7} | April Ann A. Bermudez-delos Santos MD¹ | Noemi S. Pestaño MD¹

¹Section of Cardiology, Department of Internal Medicine, Manila Doctors Hospital; ²Department of Clinical Epidemiology, University of the Philippines College of Medicine; ³Section of Cardiology, Department of Internal Medicine, De La Salle University Medical Center, Dasmariñas, Cavite; ⁴Department of Physiology, De La Salle Medical and Health Sciences Institute, Dasmariñas, Cavite; ⁵Division of Electrophysiology, Philippine Heart Center; ⁶Cardinal Santos Medical Center; ⁷Division of Cardiovascular Medicine, Department of Medicine, Philippine General Hospital, University of the Philippines College of Medicine; ⁸The Medical City, Asian Hospital and Medical Center; ⁹St Luke's Medical Center-Global City, Daniel Mercado Medical Center Tanauan City; ¹⁰Our Lady of Lourdes Hospital

Abstract

BACKGROUND: Radiofrequency ablation (RFA) is the recommended treatment of choice for supraventricular tachycardia (SVT), whereas implantable cardioverter-defibrillator (ICD) is recommended for patients at high risk for sudden death due to ventricular tachycardia/fibrillation. Radiofrequency ablation has been proven to improve the quality of life of patients with SVT, whereas an ICD has been shown to reduce mortality among patients at risk for sudden cardiac death. Both procedures are expensive and usually beyond the reach of the average Filipino patient.

OBJECTIVES: The objectives are to (1) determine the cost of hospitalization for cardiac arrhythmias that require RFA and cardioverter-defibrillator implantation in the Philippines, (2) propose revised Philippine Health Insurance Corporation (PhilHealth) benefit packages for both procedures, and (3) determine the budget impact of the proposed revised packages.

METHODS: Hospitalization costs were obtained for both RFA and cardioverter-defibrillator implantation from two government tertiary care hospitals. A range of hospitalization costs involving possible lower and higher cost scenarios was estimated. Based on these estimates and the yearly number of arrhythmias that require these procedures, revised benefit packages for both RFA and cardioverter-defibrillator implantation were proposed to PhilHealth. The budget impact analysis for the first 3 and 5 years of implementation of these revised packages was subsequently calculated.

RESULTS: The estimated hospitalization costs for RFA ranged from Philippine pesos (PHP) 248,485 to 310,480, whereas for cardioverter-defibrillator implantation, the costs ranged from PHP 509,122 to 581,940. These amounts are greatly disparate from the present PhilHealth coverages, which are PHP 9700 and 18,000 for RFA and cardioverter-defibrillator implantation, respectively. Based on these hospitalization costs, the proposed RFA benefit package is PHP 275,000 to 310,000, whereas for an ICD benefit package, PHP 513,000 to 576,000 is proposed. The incremental cost of more than PHP 300 million for RFA and more than PHP 700 million for an ICD is distributed for the next 3 or 5 years of implementation for these benefit packages, respectively.

CONCLUSION: The present PhilHealth case rates for both RFA and cardioverter-defibrillator implantation are greatly underestimated, which probably is the reason for their underutilization. There is a need to revise these case rates with due consideration of their actual hospitalization costs to lessen inequity in accessing these procedures.

KEYWORDS: radiofrequency ablation, implantable cardioverter-defibrillator, PhilHealth

INTRODUCTION

Supraventricular tachycardia (SVT) is commonly seen in clinical practice. It is generally a form of any paroxysmal narrow-complex tachycardia originating at or above the level of the atrioventricular junction. The most common forms of SVT include atrioventricular nodal reentrant tachycardia (AVNRT), atrioventricular reciprocating tachycardia, and atrial tachycardia. Pharmacologic treatment of these arrhythmias has varying success rates and has important potential adverse effects and concomitant drug–drug interactions. Also, compliance is problematic due to prolonged treatment.^{1–3} Given these problems, nonpharmacologic interventions such as catheter ablation were introduced.

Radiofrequency ablation (RFA) had been used since 1989. It uses thermal energy delivered through electrode catheter tips to destroy the pathogenic “myocardial tissue or conduction system, or both, that are critical to the initiation or maintenance of cardiac arrhythmias.”^{1,2} High success rates have been reported for catheter ablation for the different types of SVT mentioned previously.¹ Recent guidelines recommend catheter ablation as the first-line therapy for the treatment of symptomatic AVNRT based on previous registry studies and a randomized trial.^{3–5} Moreover, the 2019 guidelines from the European Society of Cardiology states that “catheter ablation for SVT in general, and AVNRT in particular, is the current treatment of choice for symptomatic patients because it substantially improves the quality of life and reduces costs.”⁵

On the other hand, among patients at high risk of sudden cardiac death (SCD) due to ventricular tachycardia/fibrillation, implantable cardioverter-defibrillator (ICD) is the treatment of choice for both the primary and secondary prevention of SCD.⁶ This is due to its effectiveness in terminating ventricular tachycardia/fibrillation and improving survival. Also, ICD is recommended (class I recommendation) for patients with primary inherited arrhythmia syndromes, such as Brugada syndrome, who survived sudden cardiac arrest.⁶

The present study found that there were more than a thousand hospitalization claims annually for SVT for the years 2017 and 2018. However, RFA was performed in approximately only 7% of these patients for the same years. Hospitalization claims for arrhythmias that require ICD, on the other hand, were more than 1200 and approximately 1500 in 2017 and 2018, respectively. However, implantation of the cardioverter-defibrillator was done in approximately only 3% to 4% of these patients. The implication of these data deserves a thorough evaluation.

The Philippine Health Insurance Corporation (PhilHealth) implements the National Health Insurance of the country.⁷ It claims coverage of 93% and 98% of the population for 2017 and 2018, respectively.^{8,9} Based on PhilHealth’s case rates for specific procedures (Relative Value Scale codes), coverage for RFA amounts to Philippine pesos (PHP) 9800, whereas PHP 18,000 is allotted for ICD.¹⁰ Considering that these amounts are most probably low relative to the total

cost of these procedures, it is worthwhile to reassess these case rates as RFA and ICD procedures are fundamental cardiac electrophysiologic interventions that offer cure (RFA) and prevent SCD (ICD). Given the importance of preventing mortalities and improving the quality of life through the use of these two proven interventions, this study was undertaken.

The objectives of this study were to

- (1) determine the cost of hospitalization for cardiac arrhythmias that require RFA;
- (2) determine the cost of hospitalization for cardiac arrhythmias that require ICD;
- (3) determine the economic burden of RFA and cardioverter-defibrillator implantation in the Philippines;
- (4) propose revised PhilHealth case rates or benefit packages for (a) RFA and (b) cardioverter-defibrillator implantation, and
- (5) determine the budget impact of the proposed revised PhilHealth packages for (a) RFA and (b) cardioverter-defibrillator implantation.

METHODOLOGY

Cost of Hospitalization and Economic Burden

The cost of hospitalization for the arrhythmia-related conditions was determined using the payer’s, that is, PhilHealth’s perspective. This refers to all healthcare-related items during the hospitalization period—all expenses incurred from the time the patient entered the hospital to the day of discharge. In this study, reference to cost is deemed synonymous with charges. This is because of the prevailing scenario in terms of healthcare delivery in the country, which is usually through out-of-pocket payments (OOPs).

In a cost-of-illness study, identification, measurement, and valuation of the essential cost items incurred during hospitalization for the cardiac arrhythmias mentioned earlier were performed. Furthermore, this study did away from using the terms direct and indirect costs as recommended by Drummond et al.¹¹

The identification and measurement of the cost items were done through consultations (virtual meetings because of the community quarantine related to COVID-19) with the experts—cardiac electrophysiologists who are current board members of the Philippine Heart Rhythm Society. Cardiac electrophysiologists usually see patients with complex arrhythmias and perform ablation procedures and implant cardiac electronic devices.

The hospitalization cost included the costs of diagnostic examinations, accommodation, professional fees, and the costs entailed in the actual performance of RFA or implantation of the cardioverter-defibrillator (charges incurred in the catheterization laboratory and cost of the device). On the other hand, the cost of the laboratory or ancillary examinations essential to the diagnosis of the condition and ascertainment of the need for RFA or an ICD (done during the outpatient consultation or previous hospitalization) were excluded. Likewise, the costs of

treatment of concomitant conditions, such as hypertension and diabetes, and screening coronary angiogram (with or without percutaneous coronary intervention) for patients older than 60 years who will undergo RFA were also excluded.

Sources of valuation depend on the resource used. For the laboratory and other ancillary procedures such as the 12-lead electrocardiogram and chest radiograph, charges from two government hospitals were used. These two institutions are both equipped with the necessary facilities where the two arrhythmia-related procedures can be undertaken. The costs of accommodations (small private room and special care unit where patients stay overnight after the cardiac procedure) were likewise obtained from these two hospitals. The type of accommodation influenced the charges for both laboratory examinations and ancillary procedures, for example, higher charge if the examination is done in the coronary care or special care unit.

The cost of the device and approximate charges for the catheterization laboratory were discussed among the electrophysiologists, and a range of costs, that is, lower to higher costs, was agreed upon via consensus. Likewise, the professional fees (lower to higher range) were obtained via consensus among them.

Based on the costs enumerated, lower- and higher-cost scenarios for the total hospitalization cost were estimated for the hospitalization cost of ablation or cardioverter-defibrillator implantation in either of the two government facilities mentioned earlier.

The economic burden was determined by multiplying the hospitalization cost of RFA and implantation of the cardioverter-defibrillator (lower to higher range) with the estimated number of the specific arrhythmias for which these two interventions were indicated. This estimate, in turn, was based on the prevalence of these arrhythmias in 2017 and 2018.

Proposed Revised PhilHealth Case Rates and Budget Impact Analysis

Another meeting was held with the cardiac electrophysiologists whereby the estimated hospitalization costs were presented. Based on the estimated lower–higher range of hospitalization

costs of RFA and implantation of the cardioverter-defibrillator, revised PhilHealth case rates or benefit packages for these procedures were proposed. The corresponding impact on the budget was determined using the simple static model or cost-calculator method.¹² Budget impact analysis was estimated for the next 3 years using 30%, 70%, and 100% coverage of the required total budget for the first, second, and third year of implementation. Budget impact analysis for the next 5 years was also calculated using 20%, 40%, 60%, 80%, and 100% coverage for the next 5 years of implementation.

RESULTS

Hospitalization Costs

The following examinations were done before either RFA or implantation of the cardioverter-defibrillator. For laboratory examinations, it included complete blood count (with platelet count), creatinine, prothrombin, and partial thromboplastin time determinations. A 12-lead electrocardiogram was obtained after both RFA and cardioverter-defibrillator implantation procedures. A chest radiograph was obtained after implantation of the cardioverter-defibrillator.

In terms of accommodation, the estimate included 2 to 3 days in a small private room (before the procedure and after transfer from the special care unit) and 1 day in the coronary care or special care unit (immediately after the procedure). The shorter duration of stay in the private room (2 days) and the longer duration (3 days) were used for the lower and higher cost scenarios, respectively.

Table 1 shows the hospitalization cost for RFA. Estimates for both the catheterization laboratory charges and the professional fees were the same for both hospitals as these were obtained through the consensus meeting with the electrophysiologists. The professional fees listed in the table are the estimated total fees for the cardiac electrophysiologists. A minimum of two cardiac electrophysiologists, one “stimulator” and one in the “field or operator,” is required during the ablation procedure.

On the other hand, Table 2 shows the hospitalization cost for implantation of the cardioverter-defibrillator. As can be seen in the table, the two major determinants of the hospitalization cost are the cost of the ICD device and the professional fees. These costs were also obtained through the consensus meeting of the

Table 1. Hospitalization Cost for Radiofrequency Ablation

Cost Items	Hospital A	Hospital B
Laboratory and ancillary procedures	PHP 1985	PHP 2780
Accommodations	PHP 6500–8500	PHP 13,500–18,000
Catheterization laboratory charges	PHP 90,000–130,000	PHP 90,000–130,000
Professional fees ^a	PHP 150,000–160,000	PHP 150,000–160,000
Total	PHP 248,485–300,485	PHP 256,280–310,480

^aTotal fees for the team of electrophysiologists (minimum of two).

Table 2. Hospitalization Cost for Cardioverter-Defibrillator Implantation

Cost Items	Hospital A	Hospital B
Laboratory and ancillary procedures	PHP 2897.50	PHP 3940
Accommodations	PHP 6500–8500	PHP 13,500–18,000
Catheterization laboratory charges	PHP 45,000–60,000	PHP 45,000–60,000
ICD device	PHP 300,000	PHP 300,000
Professional fees		
(1) Implanter	PHP 95,000–110,000	PHP 95,000–110,000
(2) Cardiac anesthesiologist	PHP 35,000–50,000	PHP 35,000–50,000
(3) Attending physician	PHP 25,000–40,000	PHP 25,000–40,000
Total	PHP 509,122.50–571,397.50	PHP 517,060–581,940

experts (cardiac electrophysiologists). The cost of the device was pegged at PHP 300,000. This cost represents the lowest possible cost for an ICD device with an estimated longevity of 5 to 7 years. In contrast, the longevity of the more expensive ICD devices is estimated at 10 to 11 years. On the other hand, the total PF is an aggregate PF from three physicians, namely, the electrophysiologist who implants the device, the anesthesiologist, and the main attending physician who is considered the primary physician of the patient. The attending physician is the one who first sees the patient, orders the initial diagnostic examinations, comes up with the diagnosis, and then refers the patient to the cardiac electrophysiologist for evaluation and assessment for the indication of an ICD and subsequent implantation.

Proposed Revised PhilHealth Coverage and Budget Impact Analysis

Based on the above hospitalization costs, the proposed revised case rate or benefit package for RFA is PHP 275,000 to 310,000. The lower amount represents the approximate mean of the low- and high-cost scenarios from the two hospitals (rounded-off to the nearest thousand). For the implantation of the cardioverter-defibrillator, the proposed revised benefit package amounts to PHP 513,000 to 576,000. These are based on the estimated mean (rounded-off) lowest and highest hospitalization costs from the two hospitals.

For the years 2017 and 2018, there were 1121 and 1149 PhilHealth hospitalization claims for SVT, respectively. As mentioned earlier, ablation is indicated for this type of arrhythmia. Based on these recent annual admissions, there will be approximately 1200 hospitalizations for SVT annually in subsequent years. Using this yearly admission number and the estimated hospitalization cost cited previously, the budget impact for the first 3 and 5 years of implementation was determined. The results shown in Tables 3 and 4 represent the total amount needed in the budget with and without the savings incurred by preventing the readmissions for SVT. These tables also show the incremental costs between the amounts required in the future budget and the current annual cost based on the present PhilHealth coverage of RFA (PHP 9700) and the current

limited annual number of patients with SVT who undergo RFA (25 RFA, or 2.1% of the number of recommended RFA based on hospitalization claims of SVT).

Figures 1 and 2 illustrate the difference between the total costs using the present PhilHealth case rates and future total costs using the estimated hospitalization cost for the first 3 and 5 years of implementation of the proposed revised benefit package, respectively. It was assumed that the present cost and the number of procedures done per year will not change in the future. These figures illustrate the great disparity between the two.

On the other hand, arrhythmias, such as reentry ventricular arrhythmia, ventricular tachycardia, ventricular fibrillation/flutter, and Brugada syndrome, are indications for implantation of a cardioverter-defibrillator. The projected annual number of patients who will require an ICD is 1500. This is based on the reported annual hospitalization claims for arrhythmias that require an ICD. These were 1282 and 1480 for 2017 and 2018, respectively. The estimated required number of cardioverter-defibrillator implantations per year multiplied by the hospitalization cost resulted in the required budget for the ICD. The proposed revised benefit package and the concomitant impact in the budget in the first 3 and 5 years of implementation are shown in Tables 5 and 6. Similar to RFA, the tables also show the total budget with and without the projected savings in terms of prevention of readmissions due to the above arrhythmias if a cardioverter-defibrillator would be implanted. The incremental cost is also shown in these tables (determined in the same manner as that of RFA).

Figures 3 and 4 show the difference between the total costs of the cardioverter-defibrillator implantations using the present PhilHealth case rates and the future costs using the proposed revised benefit package in its first 3 and 5 years of implementation, respectively. For the present total cost, it was assumed that the present PhilHealth case rate and the number of the implantations per year will not change. Similar to Figures 1 and 2 for RFA, these figures also illustrate the big difference between the two.

Table 3. Budget Impact Analysis for the First 3 Years for the Revised Radiofrequency Ablation Benefit Package

	1st Year of Implementation (30%)	2nd Year of Implementation (70%)	3rd Year of Implementation (100%)
Estimated required RFA per year = 1200	360	840	1200
Present cost: Present PHIC case rate for ablation = PHP 9700 No. of RFAs = 25	PHP 242,500	PHP 242,500	PHP 242,500
Future cost: Total for RFA Package cost = 275,000–310,000 No. of annual RFAs = 1200	PHP 99,000,000– 111,600,000	PHP 231,000,000– 260,400,000	PHP 330,000,000– 372,000,000
Less: <u>Savings</u> due to readmissions; PhilHealth case rate for SVT = PHP 12,200; no. of readmissions = 18	PHP 219,600	PHP 219,600	PHP 219,600
Total cost less savings (from readmissions)	PHP 98,780,400– 111,380,400	PHP 230,780,400– 260,180,400	PHP 329,780,400– 371,780,400
Incremental cost (based on proposed package rate and estimated required annual RFA less present cost)	PHP 98,537,900– 111,137,900	PHP 230,537,900– 259,937,500	PHP 329,537,900– 371,537,900

Table 4. Budget Impact Analysis for the First 5 Years for the Proposed Revised Radiofrequency Ablation Benefit Package

	1st Year of Implementation (20%)	2nd Year of Implementation (40%)	3rd Year of Implementation (60%)	4th Year of Implementation (80%)	5th Year of Implementation (100%)
Estimated required RFA per year = 1200	240	240	240	240	240
Present cost: Present PHIC case rate for ablation = PHP 9700 No. of RFAs = 25	PHP 242,500	PHP 242,500	PHP 242,500	PHP 242,500	PHP 242,500
Future cost: Total for RFA package cost = 275,000– 310,000 No. of annual RFAs = 1200	PHP 66,000,000– 74,400,000	PHP 132,000,000– 148,800,000	PHP 198,000,000– 223,200,000	PHP 264,000,000– 297,600,000	PHP 330,000,000– 372,000,000
Less: <u>Savings</u> due to readmissions; PhilHealth case rate for SVT = PHP 12,200; PhilHealth case rate for SVT = PHP 12,200; no. of readmissions = 18	PHP 219,600	PHP 219,600	PHP 219,600	PHP 219,600	PHP 219,600
Total cost less savings (from readmissions)	PHP 65,780,400– 74,180,400	PHP 131,780,400– 148,580,400	PHP 197,780,400– 222,980,400	PHP 263,780,400– 297,380,400	PHP 329,780,400– 371,780,400
Incremental cost (based on proposed package rate and estimated required annual RFA less present cost)	PHP 65,537,900– 73,937,900	PHP 131,537,900– 148,337,900	PHP 197,537,900– 222,737,900	PHP 263,537,900– 297,137,900	PHP 329,537,900– 371,537,900

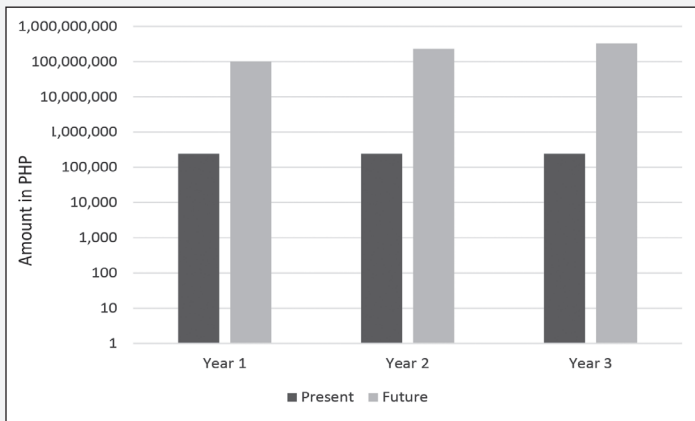


Figure 1. Costs and budget impact analysis for the proposed radiofrequency ablation benefit package (3 years).

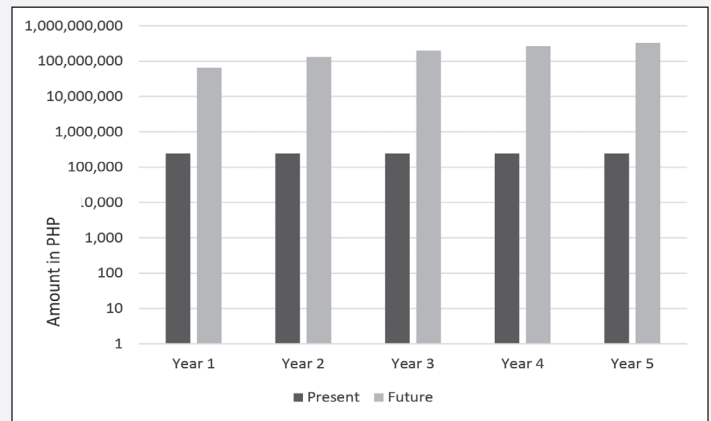


Figure 2. Costs and budget impact analysis for the proposed radiofrequency ablation benefit package (5 years).

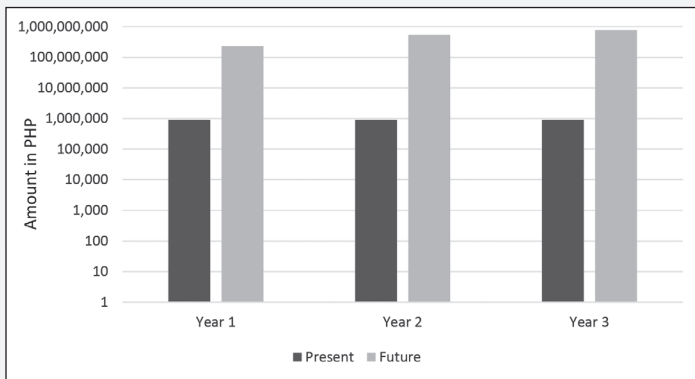


Figure 3. Costs and budget impact analysis for the proposed cardioverter-defibrillator implantation benefit package (3 years).

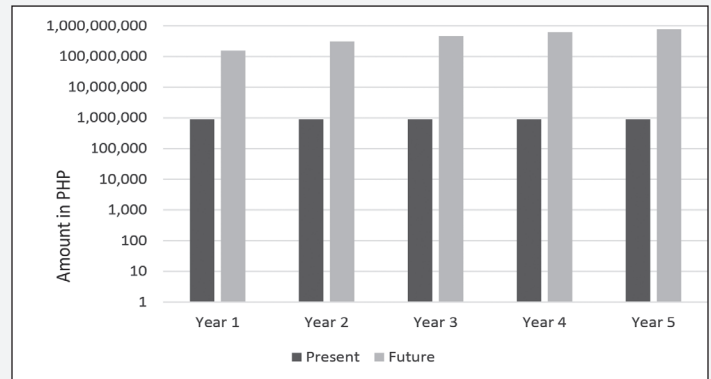


Figure 4. Costs and budget impact analysis for the proposed cardioverter-defibrillator implantation benefit package (5 years).

Table 5. Budget Impact Analysis for the First 3 Years for the Proposed Revised Benefit Package for Implantation of a Cardioverter-Defibrillator

	1st Year of Implementation (30%)	2nd Year of Implementation (70%)	3rd Year of Implementation (100%)
Estimated required ICD Implantation per year = 1500	450	1050	1500
Present cost: Present PHIC case rate for ICD implantation = PHP 18,000 No. of ICD implantations per year = 50	PHP 900,000	PHP 900,000	PHP 900,000
Future cost: Total for ICD implantation Package cost = PHP 513,000–576,000 No. of annual ICD implantations = 1,500	PHP 230,850,000 – 259,200,000	PHP 538,650,000 – 604,800,000	PHP 769,500,000 – 864,000,000
Less: <u>Savings</u> due to readmissions; PhilHealth case rate for ventricular tachycardia and Brugada syndrome = PHP 12,200; no. of readmissions = 5	PHP 61,000	PHP 61,000	PHP 61,000
Total budget for ICD implantation less savings (from readmissions)	PHP 230,789,000–259,139,000	PHP 538,589,000–604,739,000	PHP 769,439,000–863,939,000
Incremental cost (based on proposed package rate and estimated required annual ICD implantation less present cost)	PHP 229,889,000–258,239,000	PHP 537,689,000–603,839,000	PHP 768,539,000–863,039,000

DISCUSSION

Radiofrequency ablation and cardioverter-defibrillator implantation have been proven to improve quality of life or save a patient's life.^{5,6}

The estimated cost of hospitalization for both RFA and implantation of a cardioverter-defibrillator demonstrated the tremendous difference between the actual hospitalization cost and the present PhilHealth case rates for the two procedures. For RFA, the amount of coverage (PHP 9700) is just enough to pay for the minimum laboratory examinations and accommodation during hospitalization. It should be noted that the patient already spent a considerable amount on the more expensive diagnostic procedures before the actual diagnosis and assessment of the need for either RFA or an ICD. These expenses could have been incurred during outpatient evaluations or during previous hospitalizations for SVT or arrhythmias that require an ICD (more expensive as the patient has to stay in an intensive care unit).

For the cardioverter-defibrillator implantation, a big chunk of the cost comes from the cost of the ICD device. To decrease the hospitalization cost, the cost of the single-chamber ICD device was pegged at PHP 300,000. This estimate is lower than the existing lowest market price of PHP 350,000. This lower cost was estimated because of the possible increase in the number of devices that will be used; negotiations with the manufacturers can be done to lower their price to this level. However, it should be noted that this lower-priced device has shorter longevity (5–7 years) as compared with the more expensive models with possible longevity of 10 to 11 years. On the other hand, PhilHealth's coverage (PHP 18,000) does not even come up to half of the catheterization laboratory charges for the cardioverter-defibrillator implantation (listed in Table 2).

Healthcare delivery in the country is usually obtained through OOP as evidenced by its percentage in health spending or current health expenditures. In 2017 and 2018, OOP represented 54.5% and 53.9% of current health expenditures,

Table 6. Budget Impact Analysis for the First 5 Years for the Proposed Revised Benefit Package for Implantation of a Cardioverter-Defibrillator

	1st Year of Implementation (20%)	2nd Year of Implementation (40%)	3rd Year of Implementation (60%)	4th Year of Implementation (80%)	5th Year of Implementation (100%)
Estimated required ICD Implantation per year = 1500	300	600	900	1200	1500
Present cost: Present PHIC case rate for ICD implantation = PHP 18,000 No. of ICD implantations per year = 50	PHP 900,000	PHP 900,000	PHP 900,000	PHP 900,000	PHP 900,000
Future cost: Total for ICD implantation Package cost = 513,000–576,000	PHP 153,900,000–172,800,000	PHP 307,800,000–345,600,000	PHP 461,700,000–518,400,000	PHP 615,600,000–691,200,000	PHP 769,500,000–864,000,000
Less: <u>Savings</u> due to readmissions; PhilHealth case rate for ventricular tachycardia and Brugada syndrome = PHP 12,200; no. of readmissions = 5	PHP 61,000	PHP 61,000	PHP 61,000	PHP 61,000	PHP 61,000
Total budget for ICD implantation less savings (from readmissions)	PHP 153,839,000–172,739,000	PHP 307,739,000–345,539,000	PHP 461,639,000–518,339,000	PHP 615,539,000–691,139,000	PHP 769,439,000–863,939,000
Incremental cost (based on proposed package rate and estimated required annual ICD implantation less present cost)	PHP 152,939,000–171,839,000	PHP 306,939,000–344,639,000	PHP 460,739,000–517,439,000	PHP 614,639,000–690,239,000	PHP 768,539,000–863,039,000

respectively.^{13,14} On the other hand, the average annual family income was reported to be PHP 313,348 in 2018.¹⁵ Considering that PhilHealth's coverage of RFA and cardioverter-defibrillator implantation is less than 4% of the estimated hospitalization costs for these interventions, one could easily understand the huge financial burden that the patient and his/her family need to shoulder to avail of these procedures. Because these arrhythmias, especially ventricular tachycardia/fibrillation, can be life-threatening, the patient's family is faced with a dilemma. Moreover, Brugada syndrome had been linked to the occurrence of sudden unexplained death during sleep, and a local study reported that it is common in the general population.¹⁶ Likewise, it was also found to be common among young individuals, particularly males.¹⁷ Considering that these patients can lead a productive life after the implantation, the importance of this lifesaving device cannot be overemphasized. However, because of its high cost, only a few can avail of this procedure as evidenced by the prevalence of the arrhythmias that require an ICD versus the actual number of the implantations performed. This demonstrates inequity in terms of access to healthcare delivery, specifically access to this lifesaving procedure.

On the other hand, access to RFA is also very limited. Although mortality due to SVT is low as compared with arrhythmias that require ICD, its expected recurrence, despite the use of maintenance drugs, impacts a patient's quality of life and productivity and results in repeated hospitalization costs. Because of the inequity in access to these procedures, there is a need to look into policies that will enable the average Filipino patient to undergo these therapeutic interventions.

This study demonstrated the disparities between the prevailing utilization and need for both RFA and cardioverter-defibrillator implantation. This disparity is also seen in the current PhilHealth case rates and estimated hospitalization costs for both procedures; thus, it is expected that the budget requirement and incremental costs for performing these procedures based on the need and actual hospitalization cost would be enormous.

CONCLUSION AND RECOMMENDATIONS

The present PhilHealth case rates for both RFA and cardioverter-defibrillator implantation are greatly underestimated, which most probably are the reasons for their underutilization. In this regard, there is a need to review the current PhilHealth case rates for these procedures vis-à-vis their actual hospitalization costs. Revision of the present case rates or benefit packages for these procedures must reflect a more realistic estimate of their true hospitalization cost. Furthermore, PhilHealth must aim to lessen the tremendous burden of these conditions by providing access to these procedures to the average Filipino patient. In this way, inequity in terms of provision of these important interventions (which could be lifesaving) will be markedly decreased.

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