

DAFTAR PUSTAKA

1. Arthur D. "Planning for General Medical and Surgical Intensive Care Units: A Techincal Assistance Document for Planning Agencies," prepared for the U.S Department of Health, Education, and Welfare, publication No (HRS) 79-14020 (Washington, DC: U.S Government Printing Offiece, 1979).
2. Cardoso LTQ, Grion CMC, Matsuo T, Anami EHT, Kauss IAM, Seko L, et al. Impact of delayed admission to intensive care units on mortality of critically ill patients: a cohort study. *J Critical Care.* 2011; 15-28.
3. Achsanuddin, H. Peranan Ruangan Perawatan ICU dalam Memberikan Pelayanan Kesehatan di Rumah Sakit [dissertation]. Medan (Indonesia): Universitas Sumatera Utara; 2007.
4. Kementerian Koordinator Bidang Kesejahteraan Rakyat. Menuju Jaminan Kesehatan Semesta. UU No.40 Tahun 2004. Sistem Jaminan Sosial Nasional. 2004. Available at: <<http://www.depkes.go.id>> [Accessed 17 August 2013].
5. Komitmen Stakeholder untuk Keberhasilan Jaminan Kesehatan Semesta [internet]. c2004. [cited 2012 September 26]; Available from: http://buk.depkes.go.id/index.php?option=com_content&view=article&id=228:komitmenstakeholderuntukkeberhasilanjaminankesehatansemesta&catid=3:newsflash

6. Putra, I.M., Pujo J.L. Rerata Waktu Penggunaan Ventilator pada Pasien Surgical ICU RS dr.Kariadi Semarang pada Bulan Januari 2010-Januari 2011 [dissertation]. Semarang (Indonesia): Universitas Diponegoro; 2011.
7. Farid, Salman, Pujo J.L. Rerata Waktu Penggunaan Ventilator pada Pasien Medical ICU RS dr.Kariadi Semarang pada Bulan Januari 2010-Januari 2011 [dissertation]. Semarang (Indonesia): Universitas Diponegoro; 2011.
8. Seidel, J., PC Whiting, DL Edbrooke. The Costs of Intensive Care. J. The Board of Management and Trustees of the British Journal of Anaesthesia. 2006; 160-164
9. Menteri Kesehatan. Keputusan Menteri Kesehatan Republik Indonesia Nomor 1778/Menkes/SK/XII/2010. Pedoman Penyelenggaraan Pelayanan Intensive Care Unit (ICU) di Rumah Sakit. Jakarta. 2010.
10. Respir, Am J. Understanding Costs and Cost-Effectiveness in Critical Care. *Second American Thoracic Society Workshop on Outcomes Research J.* 2002: 540 – 50.
11. Joint Commission International. *Joint Commission International Accreditation Standard for Hospital 4th Edition.* USA. 2011.
12. Departemen Kesehatan. Standar Pelayanan ICU. Available from: <<http://www.depkes.go.id>> [Accessed 27 September 2012]. 2008.
13. Maani, Takrouri. Intensive Care Unit [Internet]. Tanpa tahun. [cited 2012 September 12]. Available from: <http://www.ispub.com/intensivecareunit.htm>

14. Vandijck D., S. Oeyen, L. Annemans, J. Decruyenaere. Measuring Quality of Life [Internet]. c2006. [cited 2012 Oct 2]. Available from: icu_management.org./system/files/issues/org/ICU_V9_I1_web.pdf
15. MERCS. Critical Care National Working Group on Costing [Internet]. Tanpa tahun. [cited 2013 January 31]. Available from: http://www.mercks3510.fsnet.co.uk/cost_block/cost_block.html
16. Kepala Instalasi ICU. *Standar Operasional Prosedur Prioritas Pasien Masuk ICU*. Sekretariat Manajemen ICU RSUP dr Kariadi, 2013.
17. Vera, Evacuasiany Endang, Richardo Yuven. *Karakteristik Pasien Usia Lanjut di Ruang Rawat Intensif Rumah Sakit Immanuel Bandung*. 2011 Feb 2. Jurnal JKM. 10:110-119
18. Demoule A, Cracco C, Lefort, Ray P, Derenne J, Similwksi. Patients Aged 90 years or older in the Intensive Care Unit [internet]. c2005. [cited 2012 Oct 2]. Available from: <http://biomedgerontology.oxfordjournalis.org/content/60/1/129>.
19. Vosylius S., Sipylaite J., Ivaskevicius J. Determinants of outcome in elderly patient admitted to the intensive care unit. J Age and Ageing. 2005; 34:157–62.
20. Rooij S, Abu-Hanna A, Levi M, Jonge E. Factors that predict outcome of intensive care treatment in very elderly patient: a review. Critical Care. 2005; 307-14.
21. Acharya SP, Pradhan B, Marhatta MN. Application of the sequential organ failure assessment (SOFA) score in predicting outcome in ICU patients with SIRS. Kathmandu University Medcial Journal. 2007; 5: 475-83.

22. Holmes CL, Gregoire G, Russell JA. Assesment of severity of illness. *JB, Schmidt GA, Wood LDH, eds Principles of critical care.* USA: The Mc Graw Hill. 2005; 3:63-78.
23. Bouch DC, Thompson JP. Severtiy scoring systems in the critically ill. Continuing Education in Anaesthesia, Critical Care and Pain. 2008; 8(5):181-3.
24. Ho KM, Dobb GJ, Knuiman M, Finn J, Lee KY, Webb SAR. A comparison of admission and worst 24-hour Acute Physiology and Chronic Health Evaluation II scores in predicting hospital mortality: a retrospective cohort study. *Critical Care J.* 2006; 10: 1-8.
25. Kementerian Koordinator Bidang Kesejahteraan Rakyat. Menuju Jaminan Kesehatan Semesta [Internet]. c2010. [Cited 26 September 2012]. Available from: <http://www.menkokesra.go.id/content/menuju-jaminan-kesehatan-semesta>
26. Berenson, Robert A. Intensive Care Units Clinical Outcomes, Costs, and Decisionmaking (Health Technology Case Study 28) [Internet]. Washington D.C: Congress of The United States Olike of Technology Assesment; [cited 2012 Sept 3], Washington D.C, November 1984.
27. Sanders, C.A. Hospital Management of Critical Care,”presentation at the National Institute of Health Consensus Development Conference”. *J Critical Care Medicine,* 1983; 3: 100-10
28. Helbing, C. Medicare: Use of and Charges for Accomodation and Ancillary Services in Short-Stay Hospitals. U.S. Departement of Health and Human Services, Office of Research, Health Care Financing Administration. 1989.

29. Byrick, R.J, Mindorff, C., McKee, L., et al., Cost-Effectiveness of Intensive Care for Respiratory Failure Patients. *J Critical Care Medicine* 1980; 8(6):332, 1980.
30. Cromwell, J., Mittchell, J.B., and Windham, S.R. The Cost Dynamics of Critical Illness. Prepared by Health Economics Research, Inc., for the National Center for Health Services Research, Office of the Assistant Secretary for Health, U.S. Department of Health and Human Services, grant No. HS 04026, August 1981.
31. Sistem Manajemen Rumah Sakit. Kebijakan Bagian ICU [Internet]. Jakarta; c2012 [updated 2012 Feb 24; cited 2013 Jan 31]. Available from: www.scribd.com/mobile/doc/82688221?width=320
32. Knaus William, Draper EA, Douglass P, Jack E. "APACHE II: A severity of disease classification system. *Critical Care Medicine*. 1985; 13(10):818-29.
33. Sistem Manajemen RSUP dr. Kariadi. Kebijakan RSUP dr. Kariadi. Semarang. Februari 2013.
34. L Zubek, Szabo, Horvath, et.al. [Internet]. [Published 2012 March 20, Cited 2013 Jul 27] "Correlation between APACHE II score and quality of among patients discharged from the ICU". *Critical Care Medicine*. 2012; 16(1): 404. Available from: <http://ccforum.co/content/16/S1/P404>
35. Smith, Michael. Perelman School of Medicine, 2006. "Multiple Organ Failure Main ICU Death Cause". *Medpage Today*. Nov 3, 2006.

LAMPIRAN**Formulir Isian Pasien untuk Penelitian**

Nama :
Umur/Tempat, Tanggal Lahir:
Catatan Medik :
Diagnosis Masuk ICU :
APACHE II Score :
Lama Perawatan di ICU :
Lama penggunaan ventilator :
 a. Tanggal mulai :
 b. Tanggal dilepas :
Biaya Perawatan :
(rincian biaya berdasarkan pembayaran pasien pada sistem Manajemen ICU RSUP dr. Kariadi)
 a. Akomodasi dan konsultasi :
 b. Laboratorium Patologi Klinik :
 c. Pemeriksaan mikrobiologi :
 d. Tindakan medik :
 e. Radio diagnostic :
 f. Pemakaian alat medik :
 g. Pelayanan obat atau alat kesehatan:
 h. Obat anti rupture :
Outcome klinis pasien : Keluar ICU Hidup/Meninggal/Pulang Paksa *)

*coret salah satu

Lampiran Dokumentasi



Keterangan. Foto 1. Contoh rekam medis ICU; Foto 2. Bed pasien ICU; Foto 3. Fasilitas monitor di ICU; Foto 4. Foto peneliti bersama pembimbing dan staf ICU.; Foto 5. Foto peneliti bersama pembimbing dan staf ICU; Foto 6. ICU RSUP dr. Kariadi.

Lampiran Hasil SPSS

Data Deskriptif

Jenis Kelamin

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	laki-laki	14	42.4	42.4	42.4
	perempuan	19	57.6	57.6	100.0
	Total	33	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Usia Pasien	33	22	84	52.88	15.650
Valid N (listwise)	33				

Kelompok Usia Pasien

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	kurang dari 44 tahun	13	39.4	39.4	39.4
	>= 44 tahun	20	60.6	60.6	100.0
	Total	33	100.0	100.0	

Skor APACHE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	skor apache tinggi (>24)	11	33.3	33.3	33.3
	skor apache sedang (= <24)	22	66.7	66.7	100.0
	Total	33	100.0	100.0	

Diagnosis Masuk ICU

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	gagal 2 sistem atau kurang	20	60.6	60.6	60.6
	gagal tiga sistem atau lebih	13	39.4	39.4	100.0
	Total	33	100.0	100.0	

Penggunaan Ventilator

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid pakai	19	57.6	57.6	57.6
tidak pakai	14	42.4	42.4	100.0
Total	33	100.0	100.0	

lamarawatedit

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid lama rawat normal	16	48.5	48.5	48.5
lama rawat diperpanjang	17	51.5	51.5	100.0
Total	33	100.0	100.0	

Kelompok Biaya Perawatan

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid rendah (<20juta)	14	42.4	42.4	42.4
tinggi (>20juta)	19	57.6	57.6	100.0
Total	33	100.0	100.0	

Hasil Perawatan

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid hidup	17	51.5	51.5	51.5
meninggal	16	48.5	48.5	100.0
Total	33	100.0	100.0	

Data Analistik

- Analisis Pemakaian Ventilator dengan Hasil Perawatan

Penggunaan Ventilator * Hasil Perawatan Crosstabulation

			Hasil Perawatan		Total
			hidup	meninggal	
Penggunaan Ventilator	pakai	Count	5	14	19
		Expected Count	9.8	9.2	19.0

	tidak pakai	Count	12	2	14
		Expected Count	7.2	6.8	14.0
Total		Count	17	16	33
		Expected Count	17.0	16.0	33.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.386 ^a	1	.001		
Continuity Correction ^b	9.132	1	.003		
Likelihood Ratio	12.333	1	.000		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	11.041	1	.001		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.79.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Penggunaan Ventilator (pakai / tidak pakai)	.060	.010	.364
For cohort Hasil Perawatan = hidup	.307	.140	.671
For cohort Hasil Perawatan = meninggal	5.158	1.390	19.134
N of Valid Cases	33		

2. Analisis Skor APACHE II dengan Hasil Perawatan

Skor APACHE * Hasil Perawatan Crosstabulation

		Hasil Perawatan		Total
		hidup	meninggal	
Skor APACHE	skor apache tinggi (>24)	Count	1	10
		Expected Count	5.7	5.3
	skor apache rendah (<24)	Count	16	6
		Expected Count	11.3	10.7
Total		Count	17	16
		Expected Count	17.0	16.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.890 ^a	1	.001		
Continuity Correction ^b	9.478	1	.002		
Likelihood Ratio	13.233	1	.000		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	11.529	1	.001		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.33.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Skor APACHE (skor apache tinggi (>24) / skor apache rendah (<24))	.038	.004	.359
For cohort Hasil Perawatan = hidup	.125	.019	.824
For cohort Hasil Perawatan = meninggal	3.333	1.643	6.763
N of Valid Cases	33		

3. Analisis Lama Perawatan dengan Hasil Perawatan lamarawatedit * Hasil Perawatan Crosstabulation

		Hasil Perawatan		Total
		hidup	meninggal	
Lama rawat	lama rawat normal	Count	13	3
		Expected Count	8.2	7.8
	lama rawat diperpanjang	Count	4	13
		Expected Count	8.8	8.2
Total		Count	17	16
		Expected Count	17.0	16.0
				33
				33.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.994 ^a	1	.001		
Continuity Correction ^b	8.805	1	.003		
Likelihood Ratio	11.725	1	.001		
Fisher's Exact Test				.002	.001
Linear-by-Linear Association	10.661	1	.001		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.76.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for lamarawat (lama rawat normal / lama rawat diperpanjang)	14.083	2.617	75.777
For cohort Hasil Perawatan = hidup	3.453	1.420	8.398
For cohort Hasil Perawatan = meninggal	.245	.085	.703
N of Valid Cases	33		

4. Analisis Biaya Perawatan dengan Hasil Perawatan

biayarawatinterval * Hasil Perawatan Crosstabulation

			Hasil Perawatan		Total	
			hidup	meninggal		
biayarawatinterval	rendah (<20juta)	Count	11	3	14	
		Expected Count	7.2	6.8	14.0	
	tinggi (>20juta)	Count	6	13	19	
		Expected Count	9.8	9.2	19.0	
Total		Count	17	16	33	
		Expected Count	17.0	16.0	33.0	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.127 ^a	1	.008		
Continuity Correction ^b	5.369	1	.020		
Likelihood Ratio	7.470	1	.006		
Fisher's Exact Test				.013	.009
Linear-by-Linear Association	6.911	1	.009		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.79.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Kelompok Biaya Perawatan (rendah (<20juta) / tinggi (>20juta))	7.944	1.601	39.416
For cohort Hasil Perawatan = hidup	2.488	1.216	5.092
For cohort Hasil Perawatan = meninggal	.313	.110	.894
N of Valid Cases	33		

5. Analisis Usia Pasien dengan Hasil Perawatan

usia44atobukan * Hasil Perawatan Crosstabulation

usia44atobukan	kurang dari44 tahun		Hasil Perawatan		Total	
			hidup	meninggal		
usia44atobukan	kurang dari44 tahun	Count	11	2	13	
		Expected Count	6.7	6.3	13.0	
	>= 44 tahun	Count	6	14	20	
		Expected Count	10.3	9.7	20.0	
Total		Count	17	16	33	
		Expected Count	17.0	16.0	33.0	

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.409 ^a	1	.002		
Continuity Correction ^b	7.350	1	.007		
Likelihood Ratio	10.120	1	.001		
Fisher's Exact Test				.004	.003
Linear-by-Linear Association	9.124	1	.003		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.30.

b. Computed only for a 2x2 table

Symmetric Measures

		Value	Asymp. Std. Error ^a	Approx. T ^b	Approx. Sig.
Interval by Interval	Pearson's R	.534	.141	3.516	.001 ^c
Ordinal by Ordinal	Spearman Correlation	.534	.141	3.516	.001 ^c
N of Valid Cases		33			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

c. Based on normal approximation.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Kelompok Usia Pasien (kurang dari 44 tahun / >= 44 tahun)	12.833	2.154	76.446
For cohort Hasil Perawatan = hidup	2.821	1.389	5.728
For cohort Hasil Perawatan = meninggal	.220	.059	.812
N of Valid Cases	33		

6. Analisis Diagnosis dengan Hasil Perawatan

Diagnosis Masuk ICU * Hasil Perawatan Crosstabulation

			Hasil Perawatan		Total
			hidup	meninggal	
Diagnosis Masuk ICU	gagal 2 sistem atau kurang		Count	15	5
			Expected Count	10.3	9.7
	gagal tiga sistem atau lebih		Count	2	11
			Expected Count	6.7	6.3
Total		Count	17	16	33
		Expected Count	17.0	16.0	33.0

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.211 ^a	1	.001		
Continuity Correction ^b	8.951	1	.003		
Likelihood Ratio	12.062	1	.001		
Fisher's Exact Test				.001	.001
Linear-by-Linear Association	10.871	1	.001		
N of Valid Cases	33				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.30.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for Diagnosis Masuk ICU (gagal 2 sistem atau kurang / gagal tiga sistem atau lebih)	16.500	2.687	101.331
For cohort Hasil Perawatan = hidup	4.875	1.329	17.883
For cohort Hasil Perawatan = meninggal	.295	.134	.653
N of Valid Cases	33		

7. Analisis Skor APACHE II dengan Biaya Perawatan

Skor APACHE * Kelompok Biaya Perawatan Crosstabulation

			Kelompok Biaya Perawatan	
			rendah (<20juta)	tinggi (>20juta)
Skor APACHE	skor apache tinggi (>24)	Count	3	8
		% within Skor APACHE	27.3%	72.7%
		% within Kelompok Biaya Perawatan	21.4%	42.1%
		% of Total	9.1%	24.2%
	skor apache rendah (<24)	Count	11	11
		% within Skor APACHE	50.0%	50.0%
		% within Kelompok Biaya Perawatan	78.6%	57.9%
		% of Total	33.3%	33.3%
Total		Count	14	19
		% within Skor APACHE	42.4%	57.6%
		% within Kelompok Biaya Perawatan	100.0%	100.0%
		% of Total	42.4%	57.6%
				100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.551 ^a	1	.213		
Continuity Correction ^b	.760	1	.383		
Likelihood Ratio	1.598	1	.206		
Fisher's Exact Test				.278	.193
Linear-by-Linear Association	1.504	1	.220		
N of Valid Cases	33				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 4.67.

b. Computed only for a 2x2 table

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper

Odds Ratio for Skor APACHE (skor apache tinggi (>24) / skor apache rendah (<24))	.375	.078	1.799
For cohort Kelompok Biaya Perawatan = rendah (<20juta)	.545	.191	1.561
For cohort Kelompok Biaya Perawatan = tinggi (>20juta)	1.455	.837	2.528
N of Valid Cases	33		

3. Analisis Regresi

Model if Term Removed

Variable		Model Log Likelihood	Change in -2 Log Likelihood	df	Sig. of the Change
Step 1	Diagnosedit	-5.476	7.133	1	.008
	lamarawat	-1.910	.000	1	1.000
	biayarawatinterval	-1.910	.000	1	1.000
	usia44atobukan	-5.161	6.504	1	.011
	ventilator	-2.773	1.726	1	.189
Step 2	skorAPACHE	-5.004	6.189	1	.013
	Diagnosedit	-5.476	7.133	1	.008
	lamarawat	-1.910	.000	1	1.000
	usia44atobukan	-5.161	6.504	1	.011
	ventilator	-2.773	1.726	1	.189
Step 3	skorAPACHE	-5.004	6.189	1	.013
	Diagnosedit	-7.316	10.813	1	.001
	usia44atobukan	-7.507	11.195	1	.001
	ventilator	-4.499	5.178	1	.023
	skorAPACHE	-5.205	6.592	1	.010

Variables not in the Equation

		Score	df	Sig.
Step 2 ^a	Variables biayarawatinterval(1)	.000	1	1.000
	Overall Statistics	.000	1	1.000
Step 3 ^b	Variables lamarawat(1)	.000	1	1.000
	biayarawatinterval(1)	.000	1	1.000
	Overall Statistics	.000	2	1.000

a. Variable(s) removed on step 2: biayarawatinterval.

b. Variable(s) removed on step 3: lamarawat.

Biodata mahasiswa

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Riwayat Pendidikan Formal

TK Kristen Laboratorium Satya Wacana Salatiga	1995 - 1997
SD Kristen 2 Laboratorium Satya Wacana Salatiga	1997 - 2003
SMP Negeri 1 Salatiga	2003 - 2006
SMA Taruna Nusantara Magelang	2006 - 2009
Fakultas Kedokteran Universitas Diponegoro Semarang	2009 - sekarang

Keanggotaan Organisasi

1. Koordinator Seksi Dana Usaha Scientific Fair Nasional 2011
2. Seksi Acara PORSENI Universitas Diponegoro 2011
3. Hipnoterapist sebagai *Member of The Indonesian Board of Hypnotherapy*
2012 – sekarang
4. Leader Organizer of Nation Building Djarum Foundation 2012

5. Bendahara Khitan Bersama Ceria Komunitas Medik Katolik Indonesia

Tahun 2011, 2012, 2013

Karya Ilmiah yang Pernah Dibuat

1. Potensi Batang Tanaman Bratawali dalam Mencegah Infeksi Filariasis (Lolos seleksi nasional PKM-GT tahun 2010)
2. Analisis Spasiotemporal dan Faktor Risiko Kasus Demam Berdarah Dengue di Kota Semarang (Usulan PKM-P 2011)
3. Pengaruh Jenis dan Pola Musik Tertentu untuk Motivasi Belajar Anak (Usulan Lomba Esai Ilmiah Djarum Beasiswa Plus)
4. Analisis Biaya Perawatan dan Hasil Perawatan Pasien ICU (Usulan PKM-P 2012)
5. Analisis Biaya Perawatan dan Hasil Perawatan Pasien Medikal ICU RSUP dr Kariadi (Karya Tulis Ilmiah syarat kelulusan S-1)