Κατανέμοντας τους πόρους βάσει των αναγκών υγείας: μια περιήγηση στην RAWP FORMULA

Άρης Σισσούρας

2018

Rawp formula: Resource Allocation Working Party (1976)

Η Αγγλία εισήγαγε για πρώτη φορά:

“a weighted capitation formula”

On the basis of: “*equal access for equal need*”

Η φόρμουλα έκανε χρήση:

- Age structure
- Mortality
- Input costs
- Movements of patients across regional areas

Revisions of RAWP FORMULA

Η φόρμουλα άρχισε να χρησιμοποιείται ευρέως και από άλλες χώρες, είχε όμως αρκετές αναθεωρήσεις (revisions) με τη πιο σημαντική από την Ομάδα του YORK (1994).

Η τελευταία revision έγινε το 2005 με 4 τομείς για κατανομή της χρηματοδότησης:

- Hospital & Community health services (77,4%)
- Prescribing (13,2%)
- Primary medical services (8,8%)
- HIV/AIDS (0,6%)

Αξιοσημείωτες χρήσεις της Capitation Formula είναι: Πορτογαλία, Φιλανδία, Σουηδία, Ιταλία και Γαλλία.

Αρχές στη χρήση της RAWP FORMULA

A. Risk adjustment in Health Care

A specified budget – Global budget

Λαμβάνοντας υπόψη τα διαφορετικά συστήματα υγείας π.χ.:

- An insurance pool (US)
- A regional or geographical area (UK, Sweden)
- A sickness fund (Germany, Netherlands)

The purpose of capitation

- To secure allocation according to needs
- To secure control of expenditure

Αρχές στη χρήση της RAWP FORMULA

B. The equity principals

There are various possible definitions (Le Grand, Mooney, Donalson etc)

The most usually applied definitions are:

- Equal access for equal needs
- Equal utilization for equal need – focus on health provision
- Equal health – focus on equality of health status between individuals

The first definition is widely used for budget allocation (notable examples UK, Italy and Portugal)

Ελλάδα

Η (πρώτη) προσπάθεια παραγωγής της capitation προσέγγισης έγινε:

- Πανεπιστήμιο Πατρών (Μητρόπουλος, Σισσούρας 1994)
- Πάντειο Πανεπιστήμιο (Αδαμόπουλος, Σισσούρας 2015)

Ανάπτυξη της formula στη βάση της Νοσοκομειακής και ΠΦΥ ως ξεχωριστές μεταβλητές και με την θεώρηση 3 κριτηρίων:

- *Demand of healthcare services based on age-related groups*
- *Health status of population measured mainly by SMRs*
- *The health services supplied (coverage of care)*

Budget allocation in EU-15 countries operating under tax-financed healthcare systems: the stalemate of the Greek NHS

Vasileios Vaskantiras*, Nikolaos Mastrogiannis and Panagiotis Mitropoulos

Department of Business Planning and Information Systems
Laboratory of Decision Making and Business Planning
Technological Education Institute of Patras
Great Alexander 1, 263 34 Patras, Greece
E-mail: bvaskantiras@hotmail.com
E-mail: nmastro@upatras.gr
E-mail: pmitro@upatras.gr
*Corresponding author

Aris Sissouras

Department of Mechanical Engineering
University of Patras
26500 Patras, Greece
E-mail: asisour@mech.upatras.gr

Yiannis Mitropoulos

Department of Business Planning and Information Systems
Laboratory of Decision Making and Business Planning
Technological Education Institute of Patras
Great Alexander 1, 263 34 Patras, Greece
E-mail: mitro@teipat.gr

Managing productivity of public health insurance services

Ioannis Mitropoulos* and Panagiotis Mitropoulos

Department of Business Planning and Information Systems,
Technological Education Institute of Patras,
GR-26500 Patras, Greece
E-mail: mitro@teipat.gr
E-mail: pmitro@upatras.gr
*Corresponding author

Aris Sissouras

Department of Mechanical Engineering,
University of Patras,
26500 Patras, Greece
E-mail: asisou@gmail.com

Abstract: In recent years, considerable emphasis has been given to the determination of the efficiency of public organisations and public service units using the data envelopment analysis method (DEA), which evaluates the relative efficiency of the units under examination. The ability to model both quantitative and qualitative factors in its structure extends the usefulness of the method. Moreover since DEA was initially developed as an efficient measurement tool for non-for-profit situation and since such situations commonly exhibit 'soft factors', the capability to handle such factors becomes a necessity in the field of healthcare system. In this study, we assess the efficiency of the primary healthcare units of the principal Greek public insurance provider the Social Security Institute (IKA).

Resource allocation and purchasing in the health sector: the English experience

Peter C Smith[a]

Abstract The United Kingdom of Great Britain and Northern Ireland has extensive experience in allocating health service funds to regions and localities using funding formulae. This paper focuses on England. Special attention is given to recent policy concerns to reduce avoidable health inequalities by broadening the remit of the resource allocation formulae. The paper also examines the issues that arise when seeking to allocate funds to very small organizational units, such as general practices. The English example is relevant to less-developed health systems, especially for those governments seeking to decentralize, to improve accountability and to promote equity.

Bulletin of the World Health Organization 2008;86:884–888.

Informing the development of a resource allocation framework in the German healthcare system

Ellen Nolte, Martin Roland, Cheryl L. Damberg, Soeren Mattke, Mirella Cacace, Simo Goshev, Laura Brereton, Annalijn Conklin, Liisa Hiatt, Denise D. Quigley, Susan L. Lovejoy

Sponsored by the Kassenärztliche Bundesvereinigung (KBV)

Regional disparities in resource allocation of hospital care in Greece (2015)

Athanasios D. Adamopoulos[1]

Olga Gioti-Papadaki[2]

Aris Sissouras[3]

Περιφερειακές ανισότητες ως προς την κατανομή των πόρων της δημόσιας νοσοκομειακής περίθαλψης στην Ελλάδα (2015)

Θάνος Αδαμόπουλος[1]

Όλγα Γιώτη - Παπαδάκη[2]

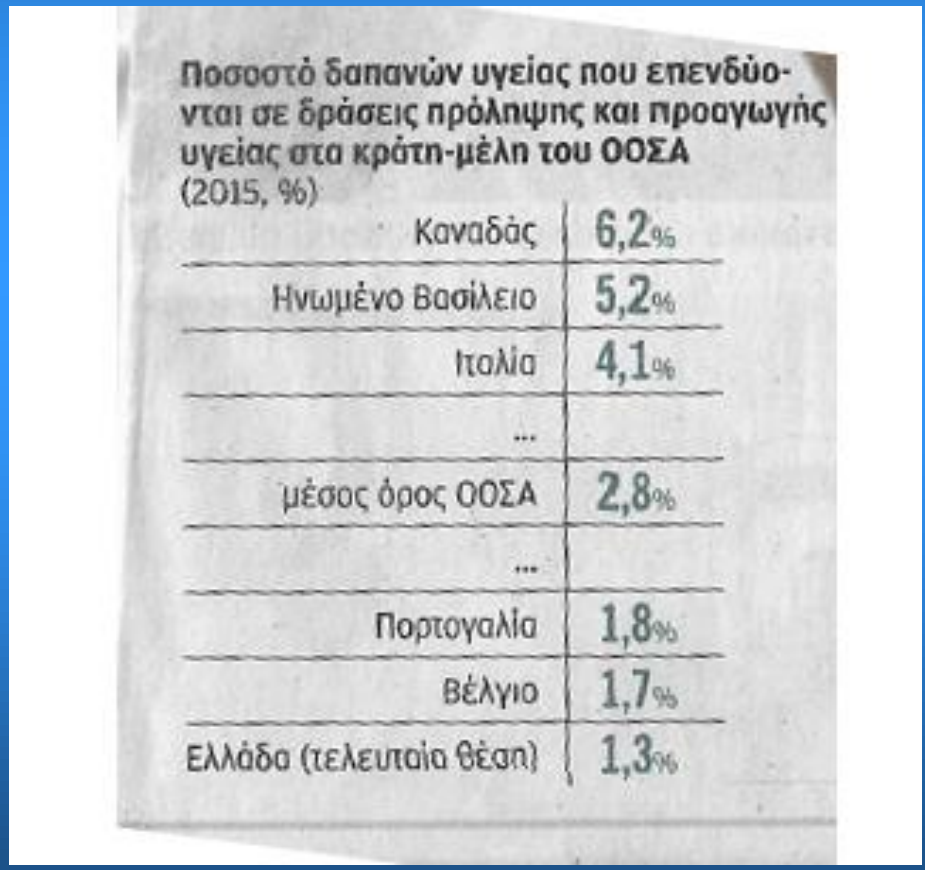
Άρης Σισσούρας[3]

The Un-Rational Facets of the Greek Health Care System (In terms of Allocation of Recourses)

- Health Regions are formally instituted
- Regional Allocation of recourses: Empirical but mainly a matter of political pressures
- Epidemiology & Morbidity Profiles of regions non existing
- Only Isolated Studies on “need“ of health care but never on the basis of the regional epidemiology profile

Expenditure by Level of Care (%)

Level of Care	Public Expenditures	Private Expenditures
Hospital Care	64	15
Primary Health Care	14	68
Pharmaceutical Care	22	17

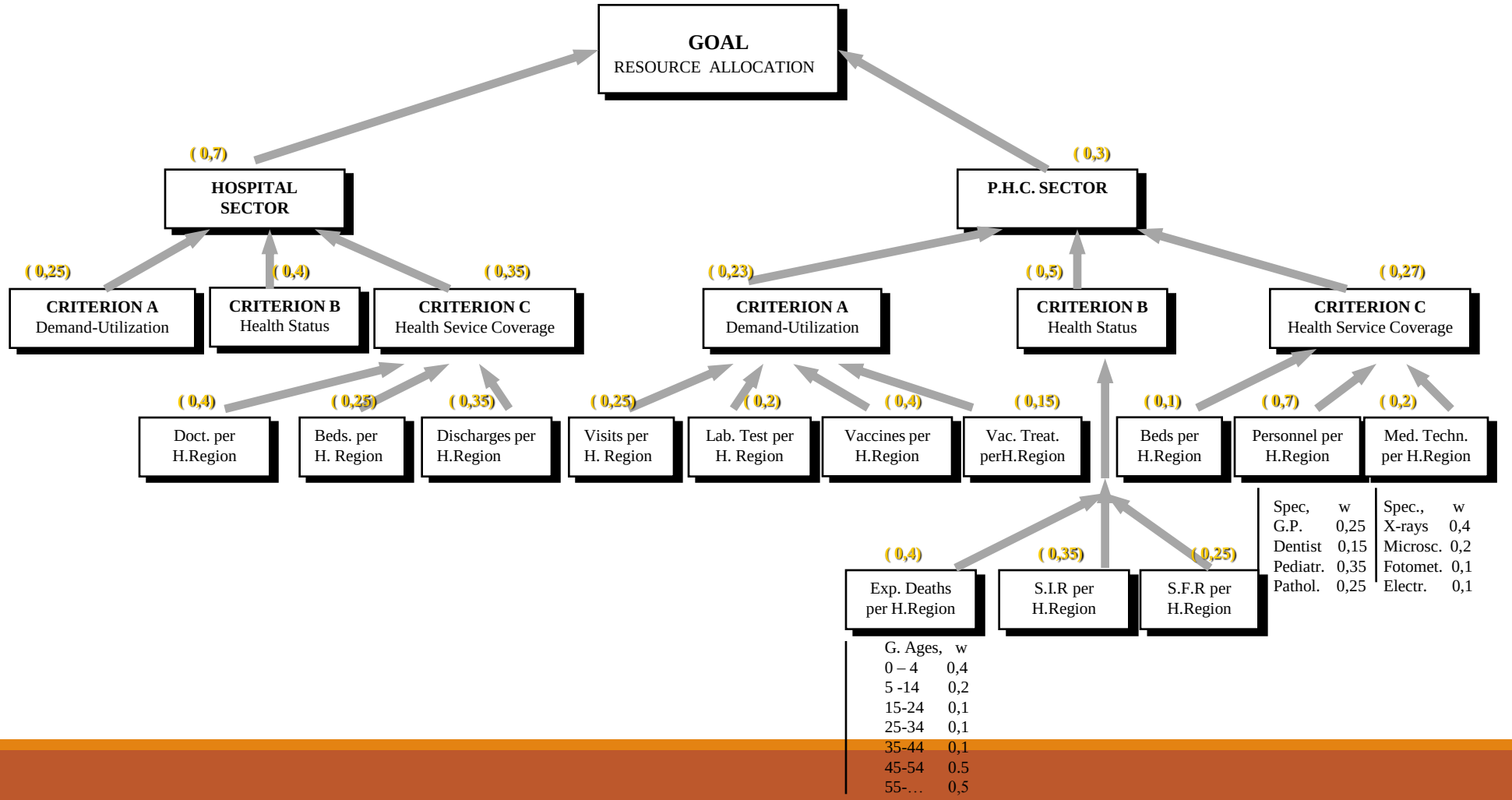


Ποσοστό δαπανών υγείας που επενδύονται σε δράσεις πρόληψης και προαγωγής υγείας στα κράτη-μέλη του ΟΟΣΑ
(2015, %)

Καναδάς	6,2%
Ηνωμένο Βασίλειο	5,2%
Ιταλία	4,1%
...	
μέσος όρος ΟΟΣΑ	2,8%
...	
Πορτογαλία	1,8%
Βέλγιο	1,7%
Ελλάδα (τελευταία θέση)	1,3%

Background Information

The Proposed Model



Demand – Utilization Criterion

- The criterion is based on utilization rates by sex and age groups, at national level, applied at district level in order to estimate the demand foreseen at that level:

$$Exp.BD_{.r=st} = \left[\frac{\sum_i \sum_j \sum_k RP_{jk}^{r=st} \cdot \frac{MLS_{ijk}.NoP_{ijk}}{NP_{jk}}}{\sum_r \sum_i \sum_j \sum_k RP_{rjk} \cdot \frac{MLS_{ijk}.No\,P_{ijk}}{NP_{jk}}} \right]$$

Where:

NP = national population
RP = regional population
MLS= mean length of stay
NoP= Number of discharges
i = diagnostic categories (i=1,...,17)
j = age group
k = sex
r = region

- In P.H.C. the criterion takes into account Health Care Services indicators (preventive, curative etc)

(Maria do Rosario Giraldes, Health Policy 1990), RAWP formula

Health Status Criterion

- The criterion is based on mortality indicators (such as S.M.R.) for each region and estimates the expected number of bed days (Exp.BD) for each category of disease (a good proxy to morbidity)

$$Exp.BD_{ir} = NoD_{ir} \,.\, MLS_i \,.\, \frac{SMR_{ir}}{100} \,.\, RP_r$$

Where:

ND = number of deaths

RP = regional population

MLS= mean length of stay

i = diagnostic categories (i=1,...,17)

r = region

- In P.H.C. is based on combination of indicators of S.M.R. (by age), Standardized Income Ratio (S.I.R.), Standardized Fertility Ratio (S.F.R.)

Health Service Coverage Criterion

- The criterion is based on operational capacity of the Health System for the provision of care (indicators: beds, personnel, discharges)

$$CD = \sum_i a_i \,.\, SCD_i$$

Where:

CD = criterion distribution

SCD= sub-criterion distribution

a = weight

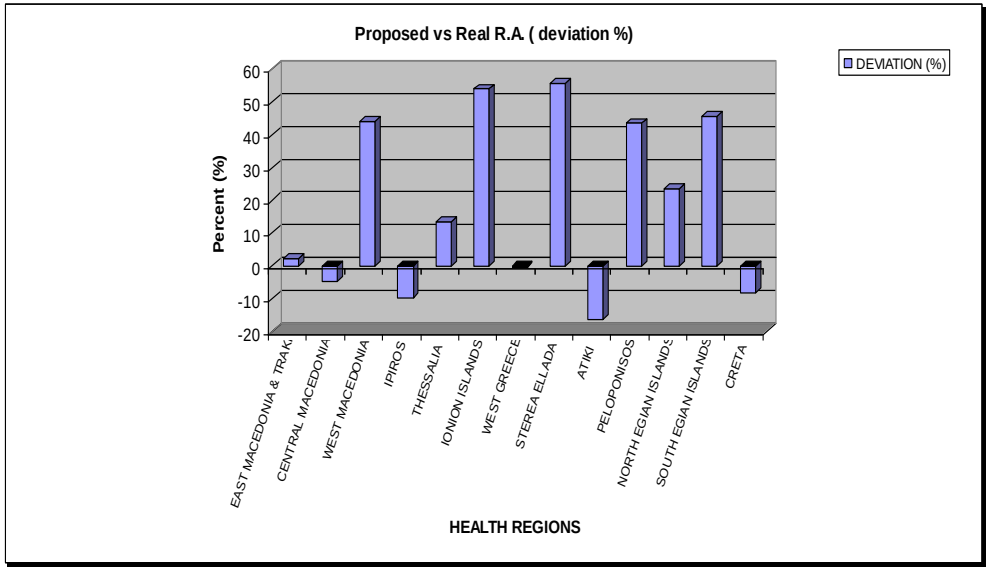
i = 1...3 (sub-criteria)

Proposed Allocation

Health Regions	Real Distribution	Criteria Distibutions								
		Demand – Utilization Criterion			Health Status Criterion			Health System Coverage		
		Proposed Distribution	Difference	(%) D	Proposed Distribution	Difference	(%) D	Proposed Distribution	Difference	(%) D
EAST MACED. & THRAKI	29.673.413.484	32.194.340.647	2.520.927.163	8,5	33.087.169.017	3.413.755.534	11,5	26.154.619.318	-3.518.794.165	-12
CENTRAL MACEDONIA	92.854.150.511	97.790.966.206	4.936.815.695	5,3	71.846.424.151	-21.007.726.360	-23	105.668.863.591	12.814.713.080	13,8
WEST MACEDONIA	11.186.614.287	16.438.545.877	5.251.931.590	46,9	18.171.683.301	6.985.069.015	62,4	12.289.519.921	1.102.905.634	9,9
IPIROS	23.423.614.891	21.165.284.308	-2.258.330.584	-9,7	23.003.460.364	-420.154.527	-1,9	18.014.125.354	-5.409.489.538	-23
THESSALIA	31.406.550.908	44.588.899.199	13.182.348.291	41,9	34.977.864.389	3.571.313.481	11,3	31.459.070.224	52.519.316	0,1
IONION ISLANDS	9.400.957.546	9.243.399.598	-157.557.948	-1,9	19.694.743.463	10.293.785.916	109	9.558.515.494	157.557.948	1,4
WEST GREECE	35.082.903.021	34.085.036.019	-997.867.002	-2,8	39.021.851.714	3.938.948.693	11,2	30.618.761.170	-4.464.141.852	-13
STEREA ELLADA	18.749.395.776	34.137.555.335	15.388.159.559	82,2	33.664.881.492	14.915.485.716	79,7	20.272.455.937	1.523.060.161	8,2
ATIKI	197.315.069.836	137.022.895.183	-60.292.174.653	-31	154.301.750.114	-43.013.319.722	-22	191.800.541.667	-5.514.528.170	-2,8
PELOPONISOS	23.003.460.364	36.973.598.394	13.970.138.029	60,6	38.234.061.975	15.230.601.611	66	26.574.773.845	3.571.313.481	15,4
NORTH EGIAN ISLANDS	8.823.245.071	12.657.155.132	3.833.910.061	43,7	13.917.618.714	5.094.373.642	58	6.880.030.383	-1.943.214.688	-22
SOUTH EGIAN ISLANDS	10.818.979.075	17.541.451.511	6.722.472.435	62	14.022.657.345	3.203.678.270	29,5	17.121.296.983	6.302.317.908	58,1
CRETA	33.402.284.912	31.511.589.540	-1.890.695.372	-5,6	30.513.722.538	-2.888.562.375	-8,6	29.148.220.325	-4.254.064.588	-13
TOTAL	525.193.159.000	525.193.159.000	0	0	525.193.159.000	0	0	525.193.159.000	0	0

Results

HEALTH REGIONS	DEVIATION (%)
EAST MACEDONIA & TRAKI	2,3
CENTRAL MACEDONIA	-4,8
WEST MACEDONIA	44,1
IPIROS	-9,7
THESSALIA	13,5
IONION ISLANDS	53,8
WEST GREECE	-0,4
STEREA ELLADA	55,6
ATIKI	-16,3
PELOPONISOS	43,4
NORTH EGIAN ISLANDS	23,4
SOUTH EGIAN ISLANDS	45,5
CRETA	-8,3



ΥΓΕΙΟΝΟΜΙΚΕΣ ΠΕΡΙΦΕΡΕΙΕΣ	ΚΑΤΑΝΟΜΕΣ		
	Πραγματική	Πρόταση	Απόκλιση(%)
ΑΝ. ΜΑΚ. & ΘΡΑΚΗ	29.681.417	30.356.165	2,3
ΚΕΝ. ΜΑΚΕΔΟΝΙΑ	92.845.439	88.390.009	-4,8
ΔΥΤ. ΜΑΚΕΔΟΝΙΑ	11.186.942	16.123.430	44,1
ΗΠΕΙΡΟΣ	23.439.244	21.165.284	-9,7
ΘΕΣΣΑΛΙΑ	31.428.938	35.660.615	13,5
ΙΟΝΙΑ ΝΗΣΙΑ	9.424.771	14.495.331	53,8
ΔΥΤΙΚΗ ΕΛΛΑΔΑ	35.076.826	34.925.345	-0,4
ΣΤΕΡΕΑ ΕΛΛΑΔΑ	18.732.846	29.148.220	55,6
ΑΤΤΙΚΗ	197.327.254	165.120.729	-16,3
ΠΕΛΟΠΟΝΝΗΣΟΣ	23.028.872	33.034.650	43,4
ΒΟΡΕΙΟ ΑΙΓΑΙΟ	8.807.010	10.871.498	23,4
ΝΟΤΙΟ ΑΙΓΑΙΟ	10.828.304	15.755.795	45,5
ΚΡΗΤΗ	33.385.291	30.618.761	-8,3
ΑΘΡΟΙΣΤΙΚΟ ΣΥΝΟΛΟ	525.193.159		

Πίνακας 5: Σύγκριση βέλτιστης κατανομής πόρων με τη σημερινή κατανομή χρηματοδότησης ανά περιφέρεια (2011)					
Διοικητική Περιφέρεια	Συνολικό κόστος λειτουργίας νοσοκομείων (2011)	% Κατανομή Πόρων	Βέλτιστη % Κατανομή Πόρων βάσει πολ/κού μοντέλου	Βέλτιστη χρημα-τοδότηση βάσει πολυκριτηριακού μοντέλου	Απόκλιση βέλτιστης χρηματοδότησης
Αν. Μακεδονίας & Θράκης	278.574.675	5,59%	4,36%	217.329.062 €	61.245.613 €
Κ. Μακεδονίας	893.196.164	17,92%	17,19%	856.854.723€	36.341.441 €
Δυτ. Μακεδονίας	88.533.013	1,78%	1,57%	78.258.401€	10.274.612 €
Ηπείρου	240.364.512	4,82%	2,80%	139.569.123€	100.795.389 €
Θεσσαλίας	293.692.900	5,89%	5,30%	264.184.411€	29.508.489 €
Στ. Ελλάδας	144.108.470	2,89%	3,12%	155.519.879€	**-11.411.409 €**
Ιονίων Νήσων	75.778.728	1,52%	1,13%	56.326.110€	19.452.618 €
Δυτ. Ελλάδας	324.875.613	6,52%	4,69%	233.778.281€	91.097.332 €
Πελοποννήσου	169.656.408	3,40%	3,71%	184.929.087€	**-15.272.679 €**
Αττικής	1.943.181.384	38,98%	49,00%	2.442.459.652€	**-499.278.268 €**
Β. Αιγαίου	95.333.097	1,91%	1,20%	59.815.338€	35.517.759 €
Ν. Αιγαίου	90.309.724	1,81%	1,45%	72.276.867€	18.032.857 €
Κρήτης	347.006.849	6,96%	4,49%	223.809.057€	123.197.792 €
Σύνολο	4.984.611.536	100,00%	100,00%		

Σας ευχαριστώ θερμά για την προσοχή σας

Με αγάπη από την Λευκάδα...