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Is a practice-based rural research network feasible in Europe?

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TITLE: Is a practice-based rural research network feasible in Europe?

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Practice-based rural research network

ABSTRACT

Research in family medicine is a well-established entity nationally and internationally, covering all aspects of primary care including remote and isolated practices. However, due to limited capacity and resources in rural family medicine, its potential is not fully exploited yet.

An idea to foster European rural primary care research by establishing a practice-based research network has been recently put forward by several members of the European Rural and Isolated Practitioners Association (EURIPA) and the European General Practice Research Network (EGPRN). Two workshops on why and how to design a practice-based research network among rural family practices in Europe were conducted at two international meetings. This paper revisits the definition of practice-based research in family medicine, reflects on the current situation in Europe regarding the research in rural family practice, and discusses a rationale for practice-based research in rural family medicine. A SWOT analysis was used as the main tool to analyse the current situation in Europe regarding the research in rural family practice at both meetings.

The key messages gained from these meetings may be employed by the Wonca Working Party on research, the International Federation of Primary Care research Network and the EGPRN that seek to introduce a practice-based research approach. The cooperation and

collaboration between EURIPA and EGPRN creates a fertile ground to further discuss the prospect of a European practice based rural family medicine research network, and to draw on the joint experience.

Keywords: research, rural population, community network, primary health care, quality improvement

Key messages

Family medicine research has evolved to become a continuously developing global entity.

The impact of research in rural family medicine is currently not fully exploited.

The cooperation between EURIPA and EGPRN creates a fertile ground to further discuss the prospect of a European practice based rural family medicine research network.

INTRODUCTION

Background

Research, an essential part of family medicine, provides the evidence for the management of chronic diseases, as well as a way to identify high-risk groups and individuals (1, 2). It also helps to answer relevant questions, recruit representative populations, and acknowledge the diversity of contexts in which primary care practitioners serve (3). It enables the evidence-based management of patients in family medicine, facilitates the development of guidelines as well as the rational use of diagnostic tests. It contributes to quality improvement, strengthens the role of family medicine in health care systems, optimizes the effectiveness of health care systems, improves the health of the population and may lower costs of health care delivery (4-7).

Strengthening family medicine research

In 2003, the World Organization of Family Physicians (Wonca) organized an international conference on how to get family medicine research started as a global activity and responsibility. This conference put forward several recommendations for fostering research in family medicine, including the need to include remote and isolated areas into research, the importance of connecting the primary care to the prevailing local communities and to link every community-based physician with the research community (8). This means that every family practice (rural and urban) should be involved in research. As a result of this conference and especially the rural research needs featured, the ALPHA (Analysing Longitudinal Population-based HIV/AIDS data in Africa) network has been established as an example of a practice-based research network involving every community-based physician (9-11).

In 2010 and 2011, a series of papers were published in the European Journal of General Practice by the European General Practice Research Network (EGPRN) comprehensively addressing research in family medicine (12-17). These papers emphasized the need for a prioritization of spearheads to guide primary care research for the next decade: translational research, research on equity and health differences, on chronic disease and health systems research (17).

Practice-based research networks in family medicine

According to the definition by the Agency for Healthcare Research and Quality, practice-based research networks (PBRNs) *“are groups of primary care clinicians and practices working together to answer community-based health care questions and translate research findings into practice”*, while they *“engage clinicians in quality improvement activities and an evidence-based culture in primary care practice to improve the health of populations”* (18).

PBRNs have already proved to be both a place and a concept. As a place, they are laboratories for quality surveillance and research, by meeting the population health needs which assists the family physicians in their responsibility to improve frontline clinical care (19). Therefore, PBRNs are essential for continuous quality improvement in primary care.

In the last few decades, family medicine research has made notable progress, focusing on different aspects of primary care such as public health issues, quality and clinical topics (20).

Practice-based research in family medicine is an important tool and vehicle to gain new knowledge by means and by outcomes of the family medicine practice (21). It offers the essential information for evidence-based family medicine (22) and as such represents the impetus for quality improvement. Practice-based research in family medicine started in the 1970's in Europe and Australia and provided evidence that family physicians could generate clinically significant and scientifically sound data (22). In Europe, PBRNs in primary care

emerged in the 90s in Belgium (23) and extensively continued in the United Kingdom and the Netherlands (24, 25). Moreover, there are primary care PBRNs that have been set up in some other European countries (26-30). There are some positive examples of practice-based research networks in rural areas of selected European countries (31-34). These enable the study of primary care problems as well as the process of continuing quality improvement within primary care settings (29). It enables every family physician to take a proactive role in developing the overall discipline of family medicine (22).

Practice-based research networks in rural family medicine

All presented good practices of PBRNs and success in international primary care research point to the need to translating them to rural family medicine research. As already shown above, the rural research is already a part of research in family medicine. However, it is mostly unstructured and dispersed. (35). Namely, rural areas have received limited financial support, which is further escalated by the current financial austerity that now more than ever has reduced research capacity in family practice and primary care (36). The place of residence and geographical factors play a role in the assessment of health status, health care utilization, and health service deficits, adequacy of health care and health-related behaviours (37). As expected, residents of rural areas are being increasingly identified as people at risk of health disparities (38). Rural family medicine provides the need for a broader and deeper clinical knowledge, including many clinical skills; the necessity to develop a different way of thinking and organising knowledge; a more socially oriented, patient-centred model of care; community expectations of social roles; and the personal cost of being a rural physician (39). By studying these topics, the research in rural areas would provide a unique and deeper insight into family medicine practice and therefore rural family medicine cannot be left behind. High quality practice-based rural primary care

research is crucial to improving health outcomes in rural communities (40). It would enable us to fully exploit the potentials of rural family medicine research and provide high quality research results relevant for clinical practice.

Therefore, the aim of this article was to present one approach based on consensus meetings to research in rural family medicine which would foster its greater visibility and enrich the overall research in family medicine. First, we reflected on the current situation in Europe in regards to the research in rural family practice with a focus on PBRNs. A SWOT analysis was utilised to highlight the rationale for the practice-based research in rural family medicine in Europe, while experiences and networking activities gained in certain European rural family medicine settings have been used as examples of best practices in order to gain certain insights on that subject. Finally, a perspective on why and how to design a practice-based research network among rural family practices in Europe is outlined.

ASSESSING THE NEED OF PRACTICE-BASED RESEARCH IN RURAL FAMILY MEDICINE IN EUROPE

EURIPA (European Rural and Isolated Practitioners Association) is a Wonca Europe network that promotes development, research, education, quality improvement and dissemination of good practice in rural health (41). EURIPA considers research as an essential element of rural practice to close the gaps in knowledge, meet and cover the population health care needs and promote future rural health policies. EGPRN is also a Wonca Europe network aimed at promoting and uniting primary care practice, family medicine clinical research, and academic family medicine (42). It published the aforementioned series of publications on research in family medicine (12-17). Based on the efforts and suggestion by EGPRN and on the recommendation from Wonca (8), strengthening the practice-based research in rural family medicine was the focus of both European networks as they decided to explore this subject in two joint meetings, the first in Malta (October 2013) and the last at the Wonca Europe conference in Lisbon (July 2014). Their main purpose was to discuss current opportunities and means to establish a practice-based research network covering rural family practices in Europe.

At the joint meeting of EURIPA and EGPRN in October 2013 in Malta, a workshop entitled “Reporting Rural Health Care Research: a focus on content and research methods” was held. Family medicine experts representing EURIPA and EGPRN participated in this workshop. The key questions discussed during this workshop were presenting health care research priorities in rural settings, suggestions on overcoming barriers in implementing family practice research in rural settings and exploring funding and intersectional collaboration in rural family practice research. The workshop’s main aim was to discuss and answer the question

“do we need practice-based research in rural family medicine in Europe”. The workshop’s participants addressed this question with SWOT methodology and finally agreed that practice-based research in rural family medicine in Europe is needed (Box 1).

EXPERIENCES GAINED FROM SELECTED RURAL EUROPEAN REGIONS – LESSONS LEARNED AND THE JOINT ROLE OF EURIPA AND EGPRN

At the Wonca Europe conference in Lisbon in 2014, a second joint EURIPA/EGPRN workshop entitled “Developing practice-based research networks in rural Europe: the joint work between EURIPA/EGPRN” has been carried-out. During this workshop, additional issues relevant to PBRN have been highlighted and certain experiences gained from several European settings in terms of rural practice-based research were presented. The key issues discussed in this workshop are shortly presented below.

A rural setting is well suited to study selected Wonca competencies including community orientation, person-centred care and a holistic approach (43). Models of after-hours services are changing leaving remote physicians alone with the burden of these services (34), especially in periods of financial austerity as is the case today, and it is a challenging topic when practice-based research is discussed. New models of an interdisciplinary collaborative practice approach to healthcare delivery that are emerging in rural areas (44) were also discussed during this workshop. Rural residence itself has proven to be a risk factor for obesity (45), diabetes (46), and cardiovascular diseases (47). Rural family medicine also presents a good opportunity to explore equity of care and the effects of an economic crisis on patient management.

An efficient way to translate the research into practice in rural settings should be found in order to ensure that the evidence-based medicine is practiced in patients’ everyday care, and the PBRNs would provide an ideal opportunity for this. In the USA and in Australia, there are many examples of rural PBRNs (29, 48). It seems that PBRNs provide an important laboratory to encourage collaborative research partnerships between academicians and

practices or communities to improve population health, conduct comparative effectiveness and patient-centred outcomes research, and study health policy reform (48).

In Europe, no international PBRNs in rural family medicine have been established yet. One national successful example is the Cretan Practice Based Research Network. It consists of 18 family physicians working in primary health care settings in rural areas on Crete, Greece. The network has monthly meetings and was recently endorsed by the 7th Health Region of Crete. The network is very active and has produced many research results (31-33, 49). In many European countries, research in rural family medicine is quickly developing. The research examples from Crete, Greece prove that practice-based research in rural settings is both possible and feasible. For example, studies on anaemia (32), upper gastrointestinal endoscopy for dyspepsia (31), and herpes zoster (33) have been conducted and published in respected scientific journals. In Italy, a study on the most frequent reasons for encounters for flu-like symptoms in family practice is currently being conducted. In Slovenia, the studies on rural family physician profiles, on self-medication in rural areas and on the use of ultrasound in after-hours care are currently being conducted. In France, the following projects are being conducted in rural settings: transmitting photos of retina from family physicians to ophthalmologist to analyse and prevent diabetic retinopathy use of echography by rural family physicians, with new materials that are less expensive and can transmit findings, and trainees in rural practice sponsored by regional authorities. In Poland, researchers focused on quality of life and health behaviour of chronically ill rural patients (50, 51) and health care quality in rural settings (patient satisfaction and quality as well as quantity of health care services) (52).

Following the success story from Crete, this may be the time to focus our energy on developing a European practice based rural family medicine research network. There are

two successful organizations (networks) which could take the leading role: EGPRN and EURIPA. Both are well positioned to establish such a network. Its purpose could be to share best practices, demonstrate the current state of the matter, improve rural health care equity between countries, standardise terminology, use of common electronic platforms etc. However, the establishment of such a network requires a lot of preparation and careful consideration. For this purpose, the aforementioned second joint EURIPA/EGPRN workshop in Lisbon attempted to respond to the question *“to what extent a PBRN in family medicine is feasible in Europe and which is the role of EURIPA and EGPRN”*. The consensus of the participants in this workshop as a SWOT format is illustrated in the Box 2.

For implementing a successful PBRN in a rural setting, the workshop’s participants approved the five core features model known as the “5C wheel”: common purpose, cooperative structure, critical mass, collective intelligence and community building (53).

CONCLUSIONS

The cooperation and collaboration between EURIPA and EGPRN outlined the strengths, weaknesses, opportunities and threats to developing a PBRN in a rural setting in Europe. The rural PBRN could serve not only as a research network but also as peer group stimulating continuous professional development on the basis of research results and quality improvement. Finally, rural PBRN could present a possibility to advocate for family medicine thus stimulating rural health policy.

The close working relationship between the two European networks creates a fertile ground from which to discuss the prospect of a European practice based rural family medicine research network, and to draw upon that joint experience. This document comes to add to the EGPRN Research Agenda and the commentaries that have been published in series in the EJGP (12-17) and they show future directions for primary care research. It may have also an impact on the work that it is undertaking by the WONCA Working Party on research and the International Federation of Primary Care Research Network. It also endorses the epilogue of the Series Papers that also rural family medicine research needs «... *the development and maintenance of a solid research infrastructure: easily maintained and accessed observational databases, helpful information technology, strategies and techniques for patient involvement, advanced research training possibilities, and the development and validation of appropriate research instruments and outcome measures to capture the different challenges.*» (17).

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REFERENCES

1. Starfield B. A framework for primary care research. *J Fam Pract* 1996;42:181-5.
2. Hummers-Pradier E, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al., editors. *Research Agenda for General Practice / Family Medicine and Primary Health Care in Europe*. Maastricht: EGPRN; 2009.
3. Pinnock H, Thomas M, Tsiligianni I, Lisspers K, Østrem A, Ställberg B, et al. The International Primary Care Respiratory Group (IPCRG) Research Needs Statement 2010. *Prim Care Respir J* 2010;19 Suppl 1:S1-20.
4. Starfield B. Health systems' effects on health status - financing vs the organization of services. *Am J Public Health* 1995;85:1350-1.
5. Beasley JW, Starfield B, van Weel C, Rosser WW, Haq CL. Global health and primary care research. *J Am Board Fam Med* 2007;20:518-26.
6. Miller J, Maclean LB, Coward P, Broemeling AM. Developing strategies to enhance health services research capacity in a predominantly rural Canadian health authority. *Rural Remote Health* 2009;9:1266-.
7. Svab I, Van Weel C. Research challenges for family medicine in a changing Europe. Reflections after an EGPRN conference on multimorbidity (Dubrovnik, 2009). *Eur J Gen Pract* 2011;17:233-7.
8. van Weel C, Rosser WW. Improving health care globally: a critical review of the necessity of family medicine research and recommendations to build research capacity. *Annals of Family Medicine* 2004;2 Suppl 2:S5-16.
9. Hallett TB, Zaba B, Todd J, Lopman B, Mwita W, Biraro S, et al. Estimating incidence from prevalence in generalised HIV epidemics: methods and validation. *PLoS Med* 2008;5:e80-e.
10. Reniers G, Slaymaker E, Nakiyingi-Miiró J, Nyamukapa C, Crampin AC, Herbst K, et al. Mortality trends in the era of antiretroviral therapy: evidence from the Network for Analysing Longitudinal Population based HIV/AIDS data on Africa (ALPHA). *AIDS* 2014;28 Suppl 4:S533-S42.

11. Maher D, Biraro S, Hosegood V, Isingo R, Lutalo T, Mushati P, et al. Translating global health research aims into action: the example of the ALPHA network. *Trop Med Int Health* 2010;15:321-8.
12. Hummers-Pradier E, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. The Research Agenda for General Practice/Family Medicine and Primary Health Care in Europe. Part 1. Background and methodology. *Eur J Gen Pract* 2009;15:243-50.
13. Hummers-Pradier E, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. Series: The research agenda for general practice/family medicine and primary health care in Europe. Part 2. Results: Primary care management and community orientation. *Eur J Gen Pract* 2010;16:42-50.
14. Van Royen P, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. The research agenda for general practice/family medicine and primary health care in Europe. Part 3. Results: person centred care, comprehensive and holistic approach. *Eur J Gen Pract* 2010;16:113-9.
15. Hummers-Pradier E, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. Series: The research agenda for general practice/family medicine and primary health care in Europe. Part 4. Results: specific problem solving skills. *Eur J Gen Pract* 2010;16:174-81.
16. van Royen P, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. Series: The research agenda for general practice/family medicine and primary health care in Europe. Part 5: Needs and implications for future research and policy. *Eur J Gen Pract* 2010;16:244-8.
17. Van Royen P, Beyer M, Chevallier P, Eilat-Tsanani S, Lionis C, Peremans L, et al. Series: The research agenda for general practice/family medicine and primary health care in Europe. Part 6: reaction on commentaries - how to continue with the Research Agenda? *Eur J Gen Pract* 2011;17:58-61.
18. Anon. Primary Care Practice-Based Research Networks. Rockville: Agency for Healthcare Research and Quality; 2014 [cited 2014 August 12th]; Available from: <http://pbrn.ahrq.gov/>.
19. Green LA, Hickner J. A short history of primary care practice-based research networks: from concept to essential research laboratories. *J Am Board Fam Med* 2006;19:1-10.

20. Jelercic S, Lingard H, Spiegel W, Pichlhöfer O, Maier M. Assessment of publication output in the field of general practice and family medicine and by general practitioners and general practice institutions. *Fam Pract* 2010;27:582-9.
21. de Maeseneer JM, van Driel ML, Green LA, van Weel C. The need for research in primary care. *Lancet* 2003;362:1314-9.
22. Stewart EE. Practice-Based Research: A Vital Part of the Transformation of Family Medicine2008 [cited 2014 19th August]: Available from:
<https://www.transformed.com/workingPapers/PracticeBasedResearch.pdf>.
23. van Casteren V, Leurquin P. Eurosentinel: development of an international sentinel network of general practitioners. *Methods Inf Med* 1992;31:147-52.
24. van Weel C, de Grauw W. Family practices registration networks contributed to primary care research. *J Clin Epidemiol* 2006;59:779-83.
25. van Weel C, Smith H, Beasley JW. Family practice research networks. Experiences from 3 countries. *J Fam Pract* 2000;49:938-43.
26. Deckers JGM, Paget WJ, Schellevis FG, Fleming DM. European primary care surveillance networks: their structure and operation. *Fam Pract* 2006;23:151-8.
27. Sullivan F, Hinds A, Pitkethly M, Treweek S, Wilson P, Wyke S. Primary care research network progress in Scotland. *Eur J Gen Pract* 2014.
28. Genel M, Dobs A. Translating clinical research into practice: practice-based research networks - a promising solution. *J Investig Med* 2003;51:64-71.
29. Laurence CO, Beilby JJ, Marley JE, Newbury J, Wilkinson D, Symon B. Establishing a practice based primary care research network. The University Family Practice Network in South Australia. *Aust Fam Physician* 2001;30:508-12.
30. Lindbloom EJ, Ewigman BG, Hickner JM. Practice-based research networks: the laboratories of primary care research. *Med Care* 2004;42:III45-III9.

31. Oikonomidou E, Anastasiou F, Pilpilidis I, Kouroumalis E, Lionis C. Upper gastrointestinal endoscopy for dyspepsia: exploratory study of factors influencing patient compliance in Greece. *BMC Gastroenterology* 2011;11:11.
32. Lionis C, Symvoulakis EK, Duijker G, Anastasiou F, Dimitrakopoulos S, Kladou C, et al. Reporting new cases of anaemia in primary care settings in Crete, Greece: a rural practice study. *Asia Pac Fam Med* 2012;11:4.
33. Lionis CD, Vardavas CI, Symvoulakis EK, Papadakaki MG, Anastasiou FS, Antonopoulou MD, et al. Measuring the burden of herpes zoster and post herpetic neuralgia within primary care in rural Crete, Greece. *BMC Family Practice* 2011;12:136.
34. Huibers LAMJ, Moth G, Bondevik GT, Kersnik J, Huber CA, Christensen MB, et al. Diagnostic scope in out-of-hours primary care services in eight European countries: an observational study. *BMC Family Practice* 2011;12:30.
35. Christos L, Emmanouil KS, Constantine IV. Implementing family practice research in countries with limited resources: a stepwise model experienced in Crete, Greece. *Fam Pract* 2010;27:48-54.
36. Tsiligianni I, Anastasiou F, Antonopoulou M, Chliveros K, Dimitrakopoulos S, Duijker G, et al. Greek rural GPs' opinions on how financial crisis influences health, quality of care and health equity. *Rural Remote Health* 2013;13:2528.
37. Cummins S, Curtis S, Diez-Roux AV, Macintyre S. Understanding and representing 'place' in health research: A relational approach. *Soc Sci Med* 2007;65:1825-38.
38. WHO. The world health report 2008 : primary health care now more than ever. Geneva: WHO; 2008.
39. Denz-Penhey H, Campbell Murdoch J. A student view of the difference between general practice and rural and remote medicine. *Rural Remote Health* 2007;7:641-.
40. Lionis C, Tatsioni A. Conducting research in rural primary care medicine: do we need more experimental research or guidance? *Rural Remote Health* 2012;12:2267.

41. Lopez-Abuin J. EURIPA: the European Rural and Isolated Practitioners Association. *Eur J Gen Pract* 2013;19:271-2.
42. Buono N, Thulesius H, Petrazzuoli F, Van Merode T, Koskela T, Le Reste JY, et al. 40 years of biannual family medicine research meetings--the European General Practice Research Network (EGPRN). *Scand J Prim Health Care* 2013;31:185-7.
43. Allen J, Gay B, Crebolder H, Heyrman J, Svab I, Ram P. The European definition of general practice/family medicine. Evans P, editor: Wonca Europe; 2011.
44. Poplas-Susic T, Svab I, Kersnik J. The project of model practices in family medicine in Slovenia. *Zdrav Vestn* 2013;82:635-47.
45. Lutfiyya MN, Lipsky MS, Wisdom-Behounek J, Inpanbutr-Martinkus M. Is rural residency a risk factor for overweight and obesity for U.S. children? *Obesity (Silver Spring)* 2007;15:2348-56.
46. Krishna S, Gillespie KN, McBride TM. Diabetes burden and access to preventive care in the rural United States. *J Rural Health* 2010;26:3-11.
47. Schwartz F, Ruhil A, Denham S, Shubrook J, Simpson C, Boyd SL. High self-reported prevalence of diabetes mellitus, heart disease, and stroke in 11 counties of rural Appalachian Ohio. *J Rural Health* 2009;25:226-30.
48. Davis M, Keller S, DeVoe J, Cohen DJ. Characteristics and Lessons Learned from Practice-based Research Networks (PBRNs) in the United States. *J Health Care Leadership* 2012;4:107-16.
49. Markaki A, Alegakis A, Antonakis N, Kalokerinou-Anagnostopoulou A, Lionis C. Exploring training needs of nursing staff in rural Cretan primary care settings. *Appl Nurs Res* 2009;22:138-43.
50. Kurpas D, Mroczek B, Bielska D. Rural and urban disparities in quality of life and health-related behaviors among chronically ill patients. *Rural Remote Health* 2014;14:2485.
51. Kurpas D, Mroczek B, Bielska D. The correlation between quality of life, acceptance of illness and health behaviors of advanced age patients. *Arch Gerontol Geriatr* 2013;56:448-56.

52. Kurpas D, Church J, Mroczek B, Hans-Wytrychowska A, Nitsch-Osuch A, Kassolik K, et al. The quality of primary health care for chronically ill patients: a cross-sectional study. *Adv Clin Exp Med* 2013;22:501-11.
53. Anon. *Effective networks for improvement*. London: the Health Foundation; 2014.

Box 1: Do we need a practice-based research in rural family medicine in Europe – a SWOT analysis

Strengths

- High research capacities of rural family physicians
- Unique research topics possible to study only in rural settings
- Real life patients
- Large demand for research activities and career opportunities by undergraduates, postgraduates and young researchers
- Growing number of PhD students in rural settings
- Structured network (EURIPA)

Weaknesses

- Rural family physicians are less prone to research
- Rural family physicians underestimate their research capacities
- Lack of time, high workload
- Isolation (lack of network between GPs in rural settings)
- Lack of specific academic recognition
- Poor self-esteem

Opportunities

- Establishing an European practice-based research network
- Participate in international proposal calls
- Collaboration between EURIPA and EGPRN
- Setting up a specific research agenda linked with EGPRN
- Implementing a sentinel system for calls for European and WHO research projects

Threats

- Limited primary health care-oriented funding opportunities (lack of funds devoted to rural settings, lack of capacity in applying for funds)
- A need for leadership and cooperation with senior researchers

Box 2: To what extent a PBRN in family medicine is feasible in Europe and which is the role of EURIPA and EGPRN – a SWOT analysis

Strengths

- The support of both EURIPA and EGPRN
- Many rural family physicians with research interests and skills
- A successful example from Crete
- Enough research ideas and material

Weaknesses

- Research capacity unequally distributed among European countries
- Many countries have no experience with practice based research networks
- Lack of local rural networks

Opportunities

- The use of IT in networking
- Raising the quality of patients' care
- Leadership in rural research
- Influence on policy makers including funds distributions

Threats

- Lack of funding and ability as well as experience in applying for funding
- Quality control (based on research results) used by the authorities for penalties on health care providers
- Lack of enthusiasm