

Esteemed Chair and Members of the Committee,

I am writing to voice my support for SB 584. My fellow Oregonians and neighbors depend on language access services when they are seeking health care. They deserve access to interpreters who have met state requirements whenever possible in accordance with state law.

Language minority patients experience health disparities in **access to health care** (Clark et al 2022, Gallagher et al 2013, Flores 2005, Karliner et al 2007, Lau et al 2012, Njeru et al 2015, Njeru et al 2017, Coker et al 2009, Ohtani et al 2015, Ponce et al 2006, Ramirez et al 2008, Roy et al 2021), **quality of health care** (Yeo 2004, Divi et al 2007, Gandhi et al 2000, AHRQ 2012, Lindholm et al 2012, Clark et al 2022, Divi et al 2007, Flores 2005, Kravitz et al 2000, Ramirez et al 2008, Yeheskel and Rawal 2019, Youdelman 2007), and **cost of care** (Gallagher et al 2013, Hampers and McNulty 2002, Graham et al 2008, Ramirez et al 2008, Karliner et al 2007, Njeru et al 2015, Office of Minority Health 2005), contributing to **disparate health outcomes** (Njeru et al 2017, Kim et al 2017, Njeru et al 2015, Carvajal Bedoya et al 2020, Clark et al 2022, Divi et al 2007, Gandhi et al 2000, Feinberg et al 2020, Kim et al 2017, Flores 2005, Lau et al 2012, Levas et al 2012). Access to professional interpreters mitigates these disparities, resulting in better access, quality and cost outcomes when compared to untrained interpreters or communication without an interpreter. Studies also suggest that interpreter training and professional credentials are associated with fewer interpreting errors of clinical consequence.

Access to trained interpreters with demonstrated language proficiency and interpreting skills is associated with **better access to care** (Office of Minority Health 2005, Kravitz et al 2000, Jacobs et al 2001, Jacobs et al 2004, Karliner et al 2007, Kravitz et al 2000, Ramirez et al 2008), **improved quality of care** (Flores et al 2012, Boylen et al 2020) and reduced cost of care (Jacobs et al 2004, Jacobs et al 2007, Diamond et al 2008, Green and Nze 2017, Lindholm et al 2012, Ramirez et al 2008) in this population, **reducing or even eliminating disparities** (Ryan et al 2017, Karliner et al 2007, Yeo 2004, Flores 2005, Plocienniczak et al 2021). Conversely, failure to provide access to such services exacerbates health disparities. When such services are unavailable or ineffective, it can result in inappropriate access to care and utilization (Njeru et al 2015, Lindholm et al 2012), decreased quality of care (Yeo 2004, Gandhi et al 2000), and worse health outcomes (Njeru et al 2017, Kim et al 2017, Flores 2005, Njeru et al 2015).

Quality as well as access matters: two systematic reviews of the literature found that access to untrained interpreters was associated with lower levels of satisfaction, more interpreter errors, including clinically significant interpreter errors, and worse comprehension compared to access to trained interpreters (Boylen et al 2020, Karliner et al 2007). Access to interpreters with unspecified levels of training, language proficiency, and interpreting skills failed to alleviate disparities in access to informed consent in one study (Lee et al 2017).

Federal law requires health systems to provide access to qualified interpreters, defined as those who have been trained in ethics and skills of interpreting, have demonstrated language proficiency, and have demonstrated interpreting skills, at all points of contact during all hours of operation. Accordingly, states set criteria for how much training interpreters must go through, how they must demonstrate language proficiency and interpreting skills, and how their services will be made available to patients in order to meet those federal standards. As of 2019, every US state had at least two state-level language access laws (Youdelman 2019).

In our state, the Oregon Health Authority (OHA) sets standards for minimum levels of training and language proficiency. Access to interpreters who have met state requirements is **crucial** to ensuring the health of language minority patients who depend on effective interpreter services to communicate with health care personnel in their preferred language. Since 2001, state law has required health systems to provide access to interpreters who have met OHA standards, and OR HB 2359 (2021) added additional enforcement mechanisms to ensure compliance with the existing language access requirements. Still, CCO language access reports show that the majority of appointments are not being covered by credentialed interpreters.

**This bill would take two important steps forward in ensuring language access.**

**First, SB 584 would allow patients to seek recourse when they don't have access to interpreters.**

Section 7 of this bill would also allow damages to be sought for noncompliance with laws regarding interpreting services. No government agency is currently tasked with enforcing statutory requirements for language service companies, and though HB 2359 tasked OHA and DHS with enforcing language access requirements for health care providers, these agencies have not created a complaint process or specified penalties for noncompliance. A clear complaint process and proactive monitoring approach with clearly specified penalties for noncompliance would be more appropriate, especially given low levels of access to interpreters among Medicaid patients reported by Oregon's CCOs, but this is an important first step.

**Second, SB 584 would allow credentialed interpreters to be paid directly by the state, rather than through intermediaries. This would support interpreters who invest in obtaining and maintaining their state credentials, and providers in knowing that the interpreters they are booking have met state standards.** It would allow credentialed interpreters in Oregon the option to take appointments directly through the state rather than being forced to go through intermediaries, giving interpreters the ability to earn more while saving the state money on administrative costs. While appointments could still go to uncredentialed interpreters when an interpreter on the OHA registry is not available or upon patient request under ORS 413.559, having a system through which providers could book credentialed interpreters directly would make it easier for providers to be sure that their patients have access to an interpreter who has met state requirements. It would also give interpreters an incentive to get and maintain state credentials as they would be first in line for appointments and would be able to earn higher rates.

Currently, health care interpreter turnover is incredibly high. Only about 8% of interpreters renew their credentials with the Oregon Health Authority. It is clear that a change is needed for interpreters to be able to stay in the profession long-term so that patients can have access to skilled, experienced interpreters who have met state requirements. **I urge your support of SB 584 to support improved patient outcomes and work towards the state's goal of health equity by 2030.**

Respectfully,

Noah Harvey Vaughan

## Sources

1. Anderson, L. M., Scrimshaw, S. C., Fullilove, M. T., Fielding, J. E., & Normand, J. (2003). Culturally competent healthcare systems. *American Journal of Preventive Medicine*, 24(3), 68–79. [https://doi.org/10.1016/s0749-3797\(02\)00657-8](https://doi.org/10.1016/s0749-3797(02)00657-8)
2. Boylen, S., Cherian, S., Gill, F. J., Leslie, G. D., & Wilson, S. (2020). Impact of professional interpreters on outcomes for hospitalized children from migrant and refugee families with limited English proficiency: A systematic review. *JBI Evidence Synthesis*, 18(7), 1360–1388. <https://doi.org/10.11124/jbisrir-d-19-00300>
3. Carvajal Bedoya, G., Davis, L. A., & Hirsh, J. M. (2020). Patient-reported outcomes in rheumatology patients with limited English proficiency and limited health literacy. *Arthritis Care & Research*, 72(S10), 738–749. <https://doi.org/10.1002/acr.24243>
4. Chen, A. H., Youdelman, M. K., & Brooks, J. (2007). The legal framework for language access in healthcare settings: Title VI and beyond. *Journal of General Internal Medicine*, 22(S2), 362–367. <https://doi.org/10.1007/s11606-007-0366-2>
5. Clark, J. R., Shlobin, N. A., Batra, A., & Liotta, E. M. (2022). The relationship between limited English proficiency and outcomes in stroke prevention, management, and Rehabilitation: A systematic review. *Frontiers in Neurology*, 13. <https://doi.org/10.3389/fneur.2022.790553>
6. Coker, T. R., Elliott, M. N., Kataoka, S., Schwebel, D. C., Mrug, S., Grunbaum, J. A., Cuccaro, P., Peskin, M. F., & Schuster, M. A. (2009). Racial/ethnic disparities in the mental health care utilization of fifth grade children. *Academic Pediatrics*, 9(2), 89–96. <https://doi.org/10.1016/j.acap.2008.11.007>
7. DeCamp, L. R., Kuo, D. Z., Flores, G., O'Connor, K., & Minkovitz, C. S. (2013). Changes in language services use by US pediatricians. *Pediatrics*, 132(2). <https://doi.org/10.1542/peds.2012-2909>
8. Denson, V. L., & Graves, J. M. (2022). Language Assistance Services in Nonfederally funded safety-net medical clinics in the United States. *Health Equity*, 6(1), 32–39. <https://doi.org/10.1089/heq.2021.0103>
9. Diamond, L. C., Schenker, Y., Curry, L., Bradley, E. H., & Fernandez, A. (2008). Getting by: Underuse of interpreters by resident physicians. *Journal of General Internal Medicine*, 24(2), 256–262. <https://doi.org/10.1007/s11606-008-0875-7>
10. Diamond, L., Izquierdo, K., Canfield, D., Matsoukas, K., & Gany, F. (2019). A systematic review of the impact of patient–physician Non-English language concordance on quality of care and outcomes. *Journal of General Internal Medicine*, 34(8), 1591–1606. <https://doi.org/10.1007/s11606-019-04847-5>
11. Divi, C., Koss, R. G., Schmaltz, S. P., & Loeb, J. M. (2007). Language proficiency and adverse events in US hospitals: A pilot study. *International Journal for Quality in Health Care*, 19(2), 60–67. <https://doi.org/10.1093/intqhc/mzl069>
12. Feinberg, I., O'Connor, M. H., Owen-Smith, A., Ogradnick, M. M., & Rothenberg, R. (2020). The relationship between Refugee Health Status and language, literacy, and time spent in the United States. *HLRP: Health Literacy Research and Practice*, 4(4). <https://doi.org/10.3928/24748307-20201109-01>
13. Flores, G. (2005). The impact of medical interpreter services on the quality of Health Care: A Systematic Review. *Medical Care Research and Review*, 62(3), 255–299. <https://doi.org/10.1177/1077558705275416>

14. Flores, G., Abreu, M., Barone, C. P., Bachur, R., & Lin, H. (2012). Errors of medical interpretation and their potential clinical consequences: A comparison of professional versus ad hoc versus no interpreters. *Annals of Emergency Medicine*, 60(5), 545–553. <https://doi.org/10.1016/j.annemergmed.2012.01.025>
15. Gallagher, R. A., Porter, S., Monuteaux, M. C., & Stack, A. M. (2013). Unscheduled return visits to the Emergency Department. *Pediatric Emergency Care*, 29(5), 579–583. <https://doi.org/10.1097/pec.0b013e31828e62f4>
16. Gandhi, T. K., Burstin, H. R., Cook, E. F., Puopolo, A. L., Haas, J. S., Brennan, T. A., & Bates, D. W. (2000). Drug complications in outpatients. *Journal of General Internal Medicine*, 15(3), 149–154. <https://doi.org/10.1046/j.1525-1497.2000.04199.x>
17. Gany, F., Leng, J., Shapiro, E., Abramson, D., Motola, I., Shield, D. C., & Changrani, J. (2007). Patient satisfaction with different interpreting methods: A randomized controlled trial. *Journal of General Internal Medicine*, 22(S2), 312–318. <https://doi.org/10.1007/s11606-007-0360-8>
18. Gershon, R., Morris, L., & Ferguson, W. (2016). Including language access into Medicaid Aco Design. *Journal of Law, Medicine & Ethics*, 44(3), 492–502. <https://doi.org/10.1177/1073110516667945>
19. Ginde, A. A., Sullivan, A. F., Corel, B., Caceres, J. A., & Camargo, C. A. (2010). Reevaluation of the effect of mandatory interpreter legislation on use of professional interpreters for ED patients with language barriers. *Patient Education and Counseling*, 81(2), 204–206. <https://doi.org/10.1016/j.pec.2010.01.023>
20. Graham, E. A., Jacobs, T. A., Kwan-Gett, T. S., & Cover, J. (2008). Health services utilization by low-income limited English proficient adults. *Journal of Immigrant and Minority Health*, 10(3), 207–217. <https://doi.org/10.1007/s10903-007-9069-3>
21. Hampers, L. C., & McNulty, J. E. (2002). Professional interpreters and bilingual physicians in a pediatric emergency department. *Archives of Pediatrics & Adolescent Medicine*, 156(11), 1108. <https://doi.org/10.1001/archpedi.156.11.1108>
22. Hunt, L. M., & de Voogd, K. B. (2007). Are good intentions good enough?: Informed consent without trained interpreters. *Journal of General Internal Medicine*, 22(5), 598–605. <https://doi.org/10.1007/s11606-007-0136-1>
23. Jacobs, E. A., Lauderdale, D. S., Meltzer, D., Shorey, J. M., Levinson, W., & Thisted, R. A. (2001). Impact of interpreter services on delivery of health care to limited-English-proficient patients. *Journal of General Internal Medicine*, 16(7), 468–474. <https://doi.org/10.1046/j.1525-1497.2001.016007468.x>
24. Jacobs, E. A., Shepard, D. S., Suaya, J. A., & Stone, E.-L. (2004). Overcoming language barriers in health care: Costs and benefits of Interpreter Services. *American Journal of Public Health*, 94(5), 866–869. <https://doi.org/10.2105/ajph.94.5.866>
25. Jacobs, E. A., Sadowski, L. S., & Rathouz, P. J. (2007). The impact of an Enhanced Interpreter Service Intervention on hospital costs and patient satisfaction. *Journal of General Internal Medicine*, 22(S2), 306–311. <https://doi.org/10.1007/s11606-007-0357-3>
26. Jacobs, B., Ryan, A. M., Henrichs, K. S., & Weiss, B. D. (2018). Medical interpreters in outpatient practice. *The Annals of Family Medicine*, 16(1), 70–76. <https://doi.org/10.1370/afm.2154>
27. Karliner, L. S., Jacobs, E. A., Chen, A. H., & Mutha, S. (2007). Do professional interpreters improve clinical care for patients with limited English proficiency? A systematic review of the literature. *Health Services Research*, 42(2), 727–754. <https://doi.org/10.1111/j.1475-6773.2006.00629.x>

28. Kenison, T. C., Madu, A., Krupat, E., Ticona, L., Vargas, I. M., & Green, A. R. (2017). Through the veil of language. *Academic Medicine*, x0-00005
29. Lau, M., Lin, H., & Flores, G. (2012). Primary language spoken at home and disparities in the health and healthcare of US adolescents. *Diversity & Equality in Health and Care*, 9(4).
30. Lee, J. S., Pérez-Stable, E. J., Gregorich, S. E., Crawford, M. H., Green, A., Livaudais-Toman, J., & Karliner, L. S. (2017). Increased access to professional interpreters in the hospital improves informed consent for patients with limited English proficiency. *Journal of General Internal Medicine*, 32(8), 863–870. <https://doi.org/10.1007/s11606-017-3983-4>
31. Levas, M. N., Dayan, P. S., Mittal, M. K., Stevenson, M. D., Bachur, R. G., Dudley, N. C., Bajaj, L., Macias, C. G., Bennett, J., Dowd, M. D., Thomas, A. J., & Kharbanda, A. B. (2014). Effect of Hispanic ethnicity and language barriers on appendiceal perforation rates and imaging in children. *The Journal of Pediatrics*, 164(6). <https://doi.org/10.1016/j.jpeds.2014.01.006>
32. Lindholm, M., Hargraves, J. L., Ferguson, W. J., & Reed, G. (2012). Professional language interpretation and inpatient length of stay and readmission rates. *Journal of General Internal Medicine*, 27(10), 1294–1299. <https://doi.org/10.1007/s11606-012-2041-5>
33. McGowan, A. K., Lee, M. M., Meneses, C. M., Perkins, J., & Youdelman, M. (2016). Civil rights laws as tools to advance health in the twenty-first century. *Annual Review of Public Health*, 37(1), 185–204. <https://doi.org/10.1146/annurev-publhealth-032315-021926>
34. Meyers, K., Tang, G., & Fernandez, A. (2009). Responding to the Language Challenge: Kaiser Permanente's approach. *The Permanente Journal*, 13(3), 77–83. <https://doi.org/10.7812/tpp/08-103>
35. Michalec, B., Maiden, K. M., Ortiz, J., Bell, A. V., & Ehrenthal, D. B. (2014). Providers' perceptions of Medical Interpreter Services and limited English proficiency (LEP) patients. *Journal of Applied Social Science*, 9(2), 156–169. <https://doi.org/10.1177/1936724414550247>
36. Mirza, M., Harrison, E. A., Roman, M., Miller, K. A., & Jacobs, E. A. (2020). Walking the talk: Understanding how language barriers affect the delivery of rehabilitation services. *Disability and Rehabilitation*, 44(2), 301–314. <https://doi.org/10.1080/09638288.2020.1767219>
37. Mussallem, A., Panko, T. L., Contreras, J. M., Plegue, M. A., Dannels, W. A., Roman, G., Hauser, P. C., & McKee, M. M. (2022). Making virtual health care accessible to the Deaf Community: Findings from the Telehealth survey. *Journal of Telemedicine and Telecare*. <https://doi.org/10.1177/1357633x221074863>
38. Njeru, J. W., St. Sauver, J. L., Jacobson, D. J., Ebbert, J. O., Takahashi, P. Y., Fan, C., & Wieland, M. L. (2015). Emergency department and inpatient health care utilization among patients who require Interpreter Services. *BMC Health Services Research*, 15(1). <https://doi.org/10.1186/s12913-015-0874-4>
39. Njeru, J. W., Damodaran, S., North, F., Jacobson, D. J., Wilson, P. M., St Sauver, J. L., Radecki Breitkopf, C., & Wieland, M. L. (2017). Telephone triage utilization among patients with limited English proficiency. *BMC Health Services Research*, 17(1). <https://doi.org/10.1186/s12913-017-2651-z>
40. Njeru, J. W., Wieland, M. L., Kwete, G., Tan, E. M., Breitkopf, C. R., Agunwamba, A. A., Prokop, L. J., & Murad, M. H. (2017). Diabetes Mellitus Management Among Patients with Limited English Proficiency: A Systematic Review and Meta-Analysis. *Journal of General Internal Medicine*, 33(4), 524–532. <https://doi.org/10.1007/s11606-017-4237-1>

41. Ohtani, A., Suzuki, T., Takeuchi, H., & Uchida, H. (2015). Language barriers and access to psychiatric care: A systematic review. *Psychiatric Services*, 66(8), 798–805. <https://doi.org/10.1176/appi.ps.201400351>
42. Oregon Health Authority. (2022, January). 2022 CCO Quality Incentive Program: Measure Summaries. <https://www.oregon.gov/oha/HPA/ANALYTICS/CCOMetrics/PlainLanguageIncentiveMeasures.pdf>
43. Plocienniczak, M., Rubin, B. R., Kolli, A., Levi, J., & Tracy, L. (2021). Outcome disparities and resource utilization among limited English proficient patients after tonsillectomy. *Annals of Otolaryngology, Rhinology & Laryngology*, 000348942110619. <https://doi.org/10.1177/00034894211061996>
44. Ponce, N. A., Ku, L., Cunningham, W. E., & Brown, E. R. (2006). Language barriers to health care access among Medicare beneficiaries. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 43(1), 66–76. [https://doi.org/10.5034/inquiryjrnl\\_43.1.66](https://doi.org/10.5034/inquiryjrnl_43.1.66)
45. Ramirez, D., Engel, K. G., & Tang, T. S. (2008). Language interpreter utilization in the emergency department setting: A clinical review. *Journal of Health Care for the Poor and Underserved*, 19(2), 352–362. <https://doi.org/10.1353/hpu.0.0019>
46. Regenstein, M., Mead, H., Muessig, K. E., & Huang, J. (2008). Challenges in language services: Identifying and responding to patients' needs. *Journal of Immigrant and Minority Health*, 11(6), 476–481. <https://doi.org/10.1007/s10903-008-9157-z>
47. Roy, M., Purington, N., Liu, M., Blayney, D. W., Kurian, A. W., & Schapira, L. (2021). Limited English proficiency and disparities in health care engagement among patients with breast cancer. *JCO Oncology Practice*, 17(12). <https://doi.org/10.1200/op.20.01093>
48. Ryan, J., Abbato, S., Greer, R., Vayne-Bossert, P., & Good, P. (2017). Rates and Predictors of Professional Interpreting Provision for Patients With Limited English Proficiency in the Emergency Department and Inpatient Ward. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 54, 004695801773998. <https://doi.org/10.1177/0046958017739981>
49. Schenker, Y., Pérez-Stable, E. J., Nickleach, D., & Karliner, L. S. (2011). Patterns of interpreter use for hospitalized patients with limited English proficiency. *Journal of General Internal Medicine*, 26(7), 712–717. <https://doi.org/10.1007/s11606-010-1619-z>
50. Schlange, S. A., Palmer-Wackerly, A. L., & Chaidez, V. (2022). A narrative review of medical interpretation services and their effect on the quality of Health Care. *Southern Medical Journal*, 115(5), 317–321. <https://doi.org/10.14423/smj.0000000000001392>
51. Showstack, R. E., Guzman, K., Chesser, A. K., & Woods, N. K. (2018). Improving latino health equity through spanish language interpreter advocacy in Kansas. *Hispanic Health Care International*, 17(1), 18–22. <https://doi.org/10.1177/1540415318818706>
52. Silva, M. D., Genoff, M., Zaballa, A., Jewell, S., Stabler, S., Gany, F. M., & Diamond, L. C. (2016). Interpreting at the end of life: A systematic review of the impact of interpreters on the delivery of palliative care services to cancer patients with limited English proficiency. *Journal of Pain and Symptom Management*, 51(3), 569–580. <https://doi.org/10.1016/j.jpainsymman.2015.10.011>
53. Sleptsova, M., Hofer, G., Morina, N., & Langewitz, W. (2014). The role of the health care interpreter in a clinical setting—A narrative review. *Journal of Community Health Nursing*, 31(3), 167–184. <https://doi.org/10.1080/07370016.2014.926682>

54. Squires, A., & Youdelman, M. (2019). Section 1557 of the Affordable Care Act: Strengthening language access rights for patients with limited English proficiency. *Journal of Nursing Regulation*, 10(1), 65–67. [https://doi.org/10.1016/s2155-8256\(19\)30085-7](https://doi.org/10.1016/s2155-8256(19)30085-7)
55. STARFIELD, B., SHI, L., & MACINKO, J. (2005). Contribution of primary care to health systems and health. *The Milbank Quarterly*, 83(3), 457–502. <https://doi.org/10.1111/j.1468-0009.2005.00409.x>
56. Van Kempen, A. (2007). Legal risks of ineffective communication. *AMA Journal of Ethics*, 9(8), 555–558. <https://doi.org/10.1001/virtualmentor.2007.9.8.hlaw1-0708>
57. Watts, D., Dowla, N., Hirway, P., Hajjar, M., & Kamath, S. (2018). Use of Language Services for Telephone Advice by Limited English Proficiency Families in a Pediatric Primary Care Setting. *Rhode Island Medical Journal*, 101(7).
58. Wilson, C. (2013). Patient safety and healthcare quality: The case for language access. *International Journal of Health Policy and Management*, 1(4), 251–253. <https://doi.org/10.15171/ijhpm.2013.53>
59. Wilson, K. (2021, December). *Meaningful Language Access to Culturally-Responsive Health Care Services: Updated Results*. Oregon Health Authority.
60. Yeheskel, A., & Rawal, S. (2018). Exploring the ‘patient experience’ of individuals with limited English proficiency: A scoping review. *Journal of Immigrant and Minority Health*, 21(4), 853–878. <https://doi.org/10.1007/s10903-018-0816-4>
61. Yeo, S. (2004). Language Barriers and Access to Care. *Annual Review of Nursing Research*, 22(1), 59-73. <https://doi.org/10.1891/0739-6686.22.1.59>
62. Youdelman, M. (2013). The development of certification for healthcare interpreters in the United States. *The International Journal of Translation and Interpreting Research*, 5(1). <https://doi.org/10.12807/ti.105201.2013.a06>
63. Youdelman, M. (2017). (rep.). *Medicaid and CHIP Reimbursement Models for Language Services* (pp. 1-31). Washington, DC: National Health Law Program.
64. Youdelman, M. (2019). (rep.). *Summary of State Law Requirements Addressing Language Needs in Health Care* (pp. 1–329). Washington, DC: National Health Law Program.
65. Youdelman, M. and Perkins, J. (2002). *PROVIDING LANGUAGE INTERPRETATION SERVICES IN HEALTH CARE SETTINGS: EXAMPLES FROM THE FIELD* (pp. 1-64). Washington, DC: National Health Law Program.
66. Youdelman, M. K. (2008). The medical tongue: U.S. laws and policies on Language Access. *Health Affairs*, 27(2), 424–433. <https://doi.org/10.1377/hlthaff.27.2.424>
67. Youdelman, M. (2007). Can the care be high quality if the communication is not? *AMA Journal of Ethics*, 9(8), 559–565. <https://doi.org/10.1001/virtualmentor.2007.9.8.pfor1-0708>