



University of California
San Francisco

UCSF School
of Nursing

Center for
Tobacco Control
Research and
Education

UCSF Helen Diller Family
Comprehensive
Cancer Center

Lung Cancer and Tobacco: What's New?

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Objectives

- To review the evidence on benefits of cessation after a diagnosis of cancer
- To demonstrate strategies to implement smoking cessation within cancer care context
- To discuss educational and research opportunities for nurses

TOBACCO
free
NURSES

Changing Oncology Clinical Practice: What a “Good Nurse” Does to Treat Tobacco Dependence for Patients in Cancer Settings

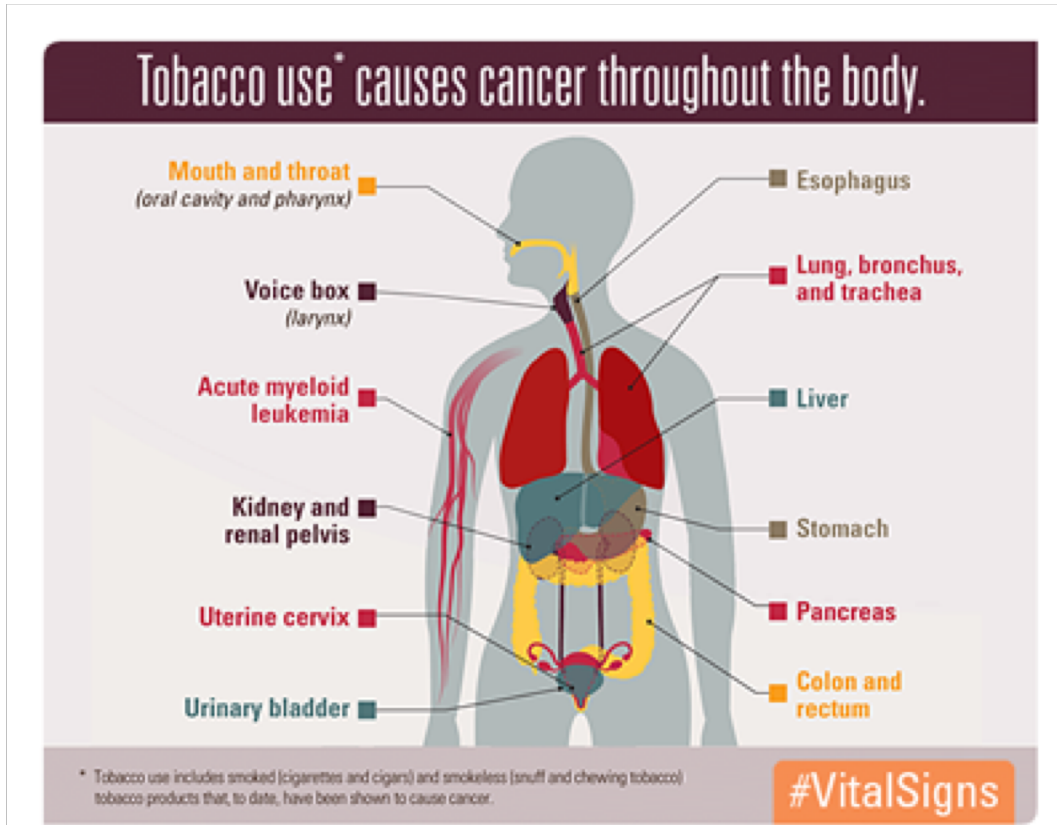


Tobacco Use Causes Cancer

- Over 70 carcinogenic chemicals
 - Damage DNA
- Tissue injury and changes that lead to transformation of the cell and cancer growth
- Special genetic mutations lead to carcinogenesis
- Increased risk of precancerous lesions
- Increased the risk of metastasis

Source: Institute of Medicine, 2012

Global tobacco-related cancer burden



- 22% of all cancer deaths, or 1.94 million deaths from cancer/year
- 80% of all lung cancers

Source: WHO; <http://www.who.int/mediacentre/factsheets/fs297/en/>

Image source: US CDC; <https://www.cdc.gov/cancer/tobacco/index.htm>

Beyond causation

- Smoking negatively impacts cancer treatment
 - Surgery
 - Radiation Therapy
 - Chemotherapy

Smoking and Radiation Therapy

- Increased pulmonary infections
- Increased incidence of pulmonary fibrosis and pneumonitis
- Increased risk of weight loss
- Less effective
- Decreased survival
- Increase in second primary lung cancers

Source: Institute of Medicine, 2012

Smoking and Cancer Surgery

- Increased peri-operative and post-operative cardiac and pulmonary complications
- Decreased wound healing
- Longer hospitalization
- Decreased survival

Source: Institute of Medicine, 2012

Smoking and Chemotherapy

- May increase side effects and reduce effectiveness
- Nicotine interferes with metabolism of some chemotherapy agents
- Nicotine inhibits cell death and promotes cell growth in vitro
- Targeted therapies work better in never smokers

Source: Institute of Medicine, 2012

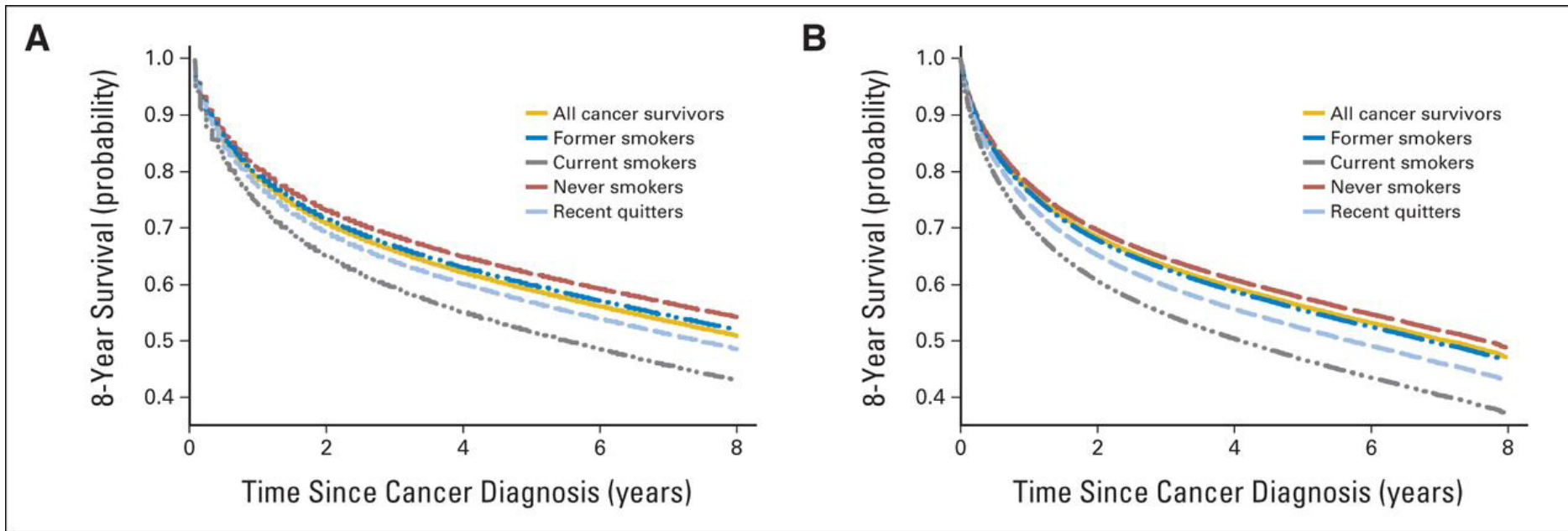
Smoking Also Impacts Patients with Non-Tobacco Related Cancers

- For example, patients with breast cancer who smoke and are treated with radiation are more likely to develop another cancer compared to those who do not smoke
- Others at increased risk for cardiovascular and respiratory diseases, among other health risks

Source: Institute of Medicine, 2012

**SMOKING CESSATION AT ANY STAGE OF
THE CANCER CARE CONTINUUM IS
BENEFICIAL TO THE PATIENT**

Improvement in overall survival



USA

NSW

Smoking Cessation After Cancer Sitas et al. Journal of Clinical Oncology 2014

<http://ascopubs.org/doi/full/10.1200/JCO.2014.55.9666>

Improvement in overall survival (cont'd)

- Early stage non-small cell lung cancer: continued smoking associated with a significantly increased risk of
 - all cause mortality (hazard ratio 2.94, 95% CI 1.15 to 7.54)
 - recurrence (1.86, 1.01 to 3.41)
- Limited stage small cell lung cancer
 - all cause mortality (1.86, 1.33 to 2.59)
 - development of a second primary tumour (4.31, 1.09 to 16.98)
 - recurrence (1.26, 1.06 to 1.50)
- non-small cell lung cancer
 - Life table modelling 33% five year survival in 65 year old patients with early stage non-small cell lung cancer who continued to smoke compared with 70% in those who quit smoking.

■ **Amato et al. Tobacco Cessation May Improve Lung Cancer Patient Survival.** [J Thorac Oncol.](#) 2015 Jul;10(7):1014-9. doi: 10.1097/JTO.0000000000000578.

US initiative

- National Cancer Institute Survey NCI-Designated Cancer Centers (n =28) (Goldstein et al, 2012)
 - Only 50% include tobacco use as a vital sign in the medical record
 - 20% had no tobacco treatment
 - Low rate of assessment in clinical trials: Only 22% of NCI-funded cooperative group trials recorded smoking status at enrollment, 4% at follow-up
- Cancer Center Cessation Initiative (C3I) launched in 2017

Is smoking a problem after a diagnosis of cancer?

- Over 50% do quit (Gritz et al, 2011)
- Many smokers continue to smoke, even after a tobacco-related diagnosis
 - 40-60% of patients with Head & Neck cancer (Gritz et al, 2011)
 - 37% of those with early stage lung cancer were smoking one year after diagnosis (Gritz et al., 2011)
- Relapse is common
 - 30-50% relapse after quitting (Cooley et al., 2009)

Benefits of Cessation after Cancer Diagnosis

- Decreased recurrence
- Decreased treatment complications
- Decreased number of second cancers
- Improved quality of life
- Decreased symptom burden
- Increased survival

Morgan et al, NCI conference on treating tobacco dependence At cancer centers. *Journal of Oncology Practice*, 2011;
Peppone et al, The effect of Cigarette smoking on cancer treatment-related side effects. *The Oncologist*, 2011.

Benefits of Cessation after Cancer Diagnosis (cont'ed)

- Decrease risk
 - Heart disease
 - Respiratory disease
 - Gastrointestinal ulcers
 - Osteoporosis
 - Cataracts, macular degeneration

Source: Institute of Medicine, 2012

Tobacco Dependence Treatments that are not supported by evidence to date

- Electronic cigarettes
- Nicotine fading
- Hypnosis
- Biofeedback
- Herbs
- Acupuncture

Symptoms of Nicotine Withdrawal

- Depression
- Insomnia
- Irritability/frustration/anger
- Anxiety
- Difficulty concentrating
- Restlessness
- Increased appetite/weight gain
- Cravings*

Most symptoms subside
within 2–4 weeks.

*Not considered a withdrawal symptom

Source: Hughes. (2007). *Nicotine Tob Res* 9:315–327.

Relapse to Smoking after Cancer Treatment Ends

- Be sure to monitor smoking status after treatment has ended
- Relapsed to smoking is not uncommon among patients with cancer
- Be sure to include assessment of smoking among family members
 - It is more difficult to quit in an environment where others are smoking
 - This might be an opportunity for family members to quit too

Treating Tobacco Dependence at End of Life

- Nicotine addiction is very powerful and even patients at end of life may continue to smoke
 - Nicotine withdrawal can manifest as restlessness, agitation
 - Smoking associated with worsened respiratory symptoms
 - Continued smoking may pose safety concerns, especially if oxygen is being used



American Society of Clinical Oncology
Making a world of difference in cancer care

Tobacco Cessation Guide

For Oncology Providers

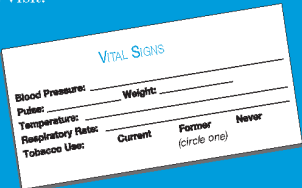
<https://www.asco.org/practice-guidelines/cancer-care-initiatives/prevention-survivorship/tobacco-cessation-control>

Nurses Can Make a Difference!

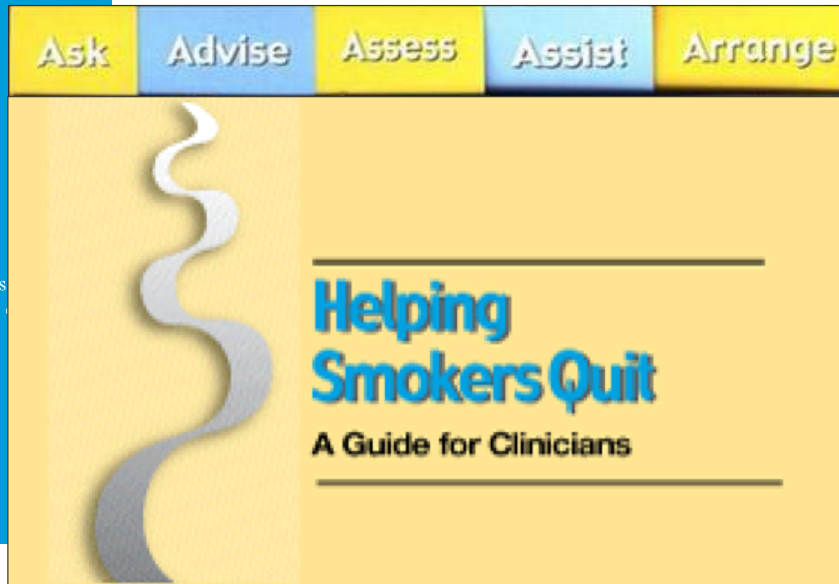
Ask

Ask about tobacco use at every visit.

Implement a system in your clinic that ensures tobacco-use status is obtained and recorded at every patient visit.



A small image of a 'VITAL SIGNS' form with fields for Blood Pressure, Pulse, Weight, Temperature, Respiratory Rate, and Tobacco Use (Current, Former, Never). The Tobacco Use section has a note '(circle one)'.



The 5 A's

- Ask
- Advice
- Assess
- Assist
- Arrange

Based upon: Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update*. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008.

Myth: It's too stressful to quit smoking after the diagnosis of cancer.

Fact: The vast majority of smokers attempt to quit smoking after the diagnosis of lung cancer.

- Patients expect to receive advice to quit



Nurses Helping Smokers Quit

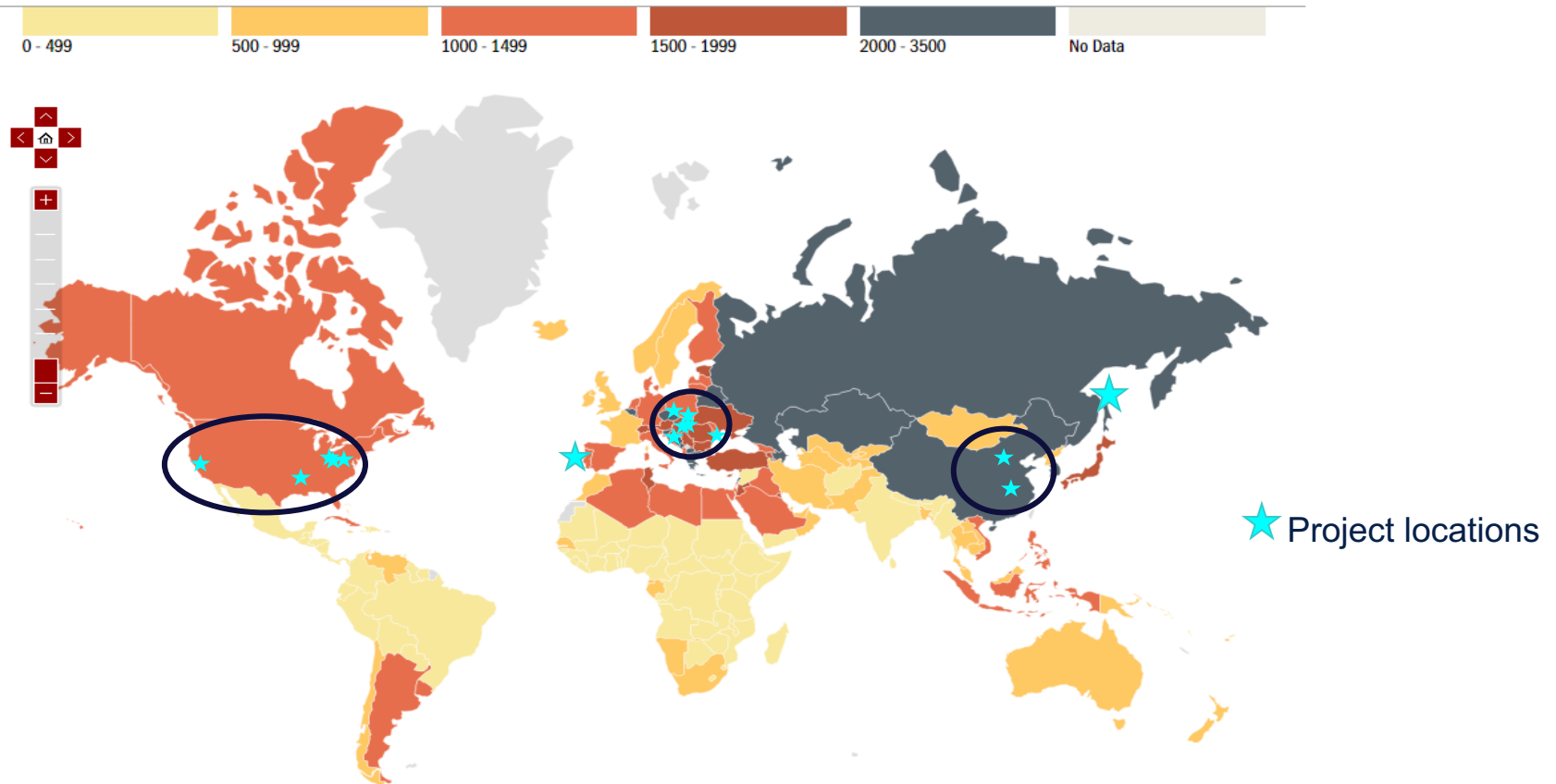
- Partnership between ISNCC, University of California and National Oncology Nursing Societies



www.tobaccofreenurses.org

www.isncc.org

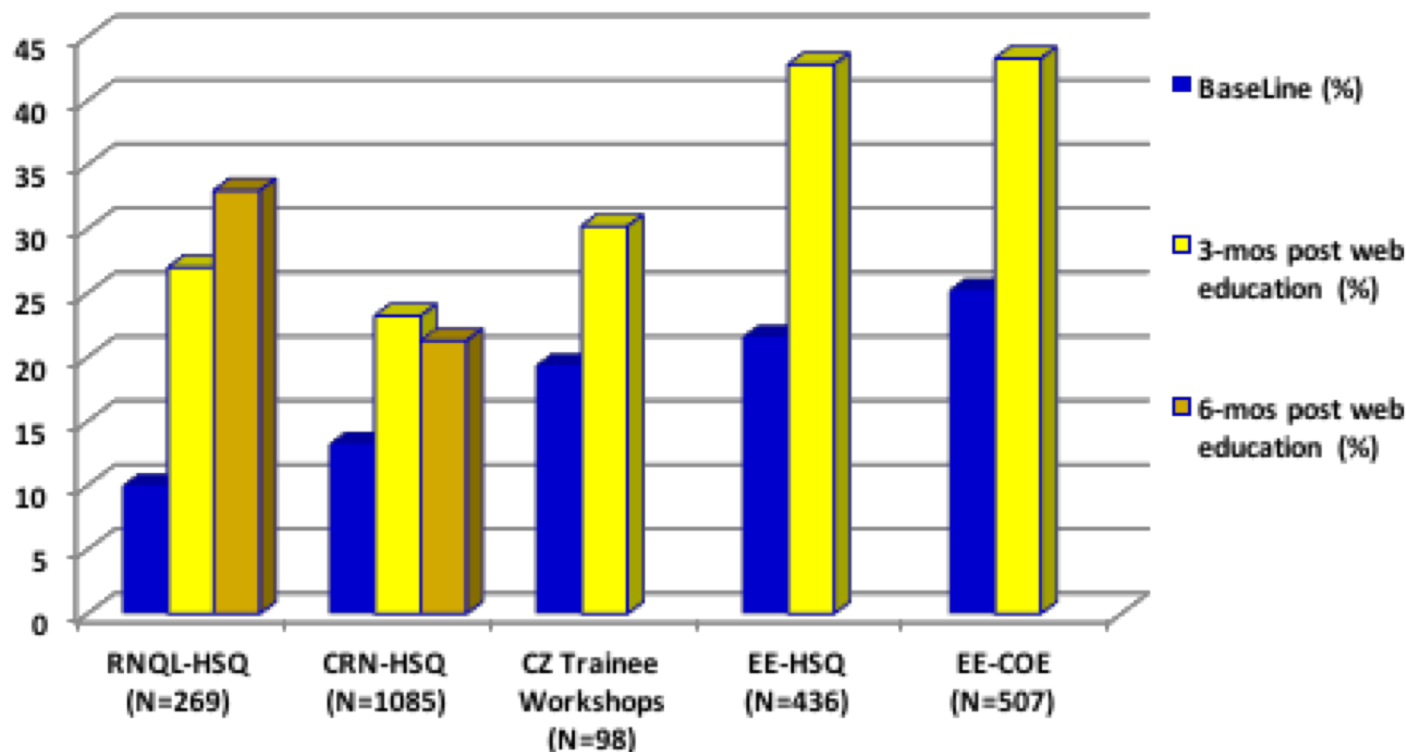
Nurses Helping Smokers Quit: Outreach



China and Eastern and Southern Europe consume the most cigarettes per person. This is not only because of the high smoking prevalence (see [Smoking Among Men](#) and [Smoking Among Women](#)) but also high smoking intensity – the large number of cigarettes smoked by average smoker per day.

The Tobacco Atlas. American Cancer Society. <https://acs.bookstore.ipgbook.com/the-tobacco-atlas-products-9781604432350.php>

Frequency distribution of nurses' consistently (usually/always) recommending a smoking cessation to patients who are smokers over five projects



All changes from baseline significant at $p < .05$ level



Next Steps in Nursing Research

- Research on professionals, patients and systems. For example:
 - Implementing tobacco free healthcare facilities
 - Assessing nursing knowledge, attitude and behavior (practice)
 - Implement educational program
 - Assess workflow to integrate tobacco cessation – electronic records if available
 - Document patients' tobacco use profile
 - Patients' outcome re: cessation
- Many other ideas!!!!