American College of Emergency Physicians®

ADVANCING EMERGENCY CARE

Health Resource Document for Emergency Physicians

an Information Paper

Developed by Members of the

Well-being Committee

September 2010

This document, developed by members of the ACEP Well-being Committee, contains the following sections:

Career Issues
Technology in the Emergency Department
Maintaining Meaningful Relationships
Developing a Healthy Lifestyle

Career Issues

Scott M. Davis, MD, FACEP

Maintaining one's health for the duration of a career in emergency medicine is essential for career longevity. To be able to achieve this goal, one needs to be proactive in establishing career objectives. That means making things happen rather than letting life happen to you. This section will discuss the importance of *goals* and *balance*, as key concepts of a health-centered career pathway.

Goals

One cannot stress the importance of *goals*. Goal-setting is essential to creating a career path that meets an individual's needs and expectations. Writing down goals on paper can be instrumental in allowing an individual to focus and analyze their unique career goals. One may even wish to develop a *"Personal Mission Statement"* for both career and personal goals, as a blueprint for life.

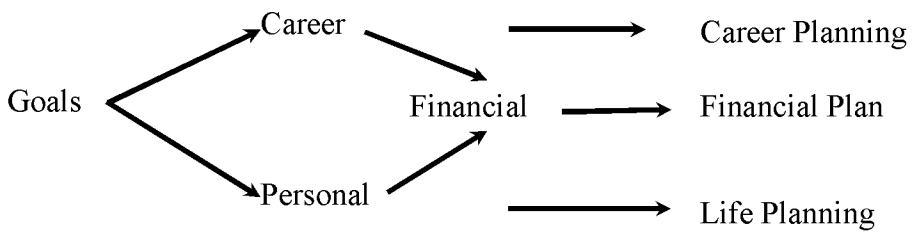
Starting a career without defined goals is like walking in a strange city without a map. You may reach your destination, but chances are more likely that you will wander around aimlessly. Those that have seen the movie "The Bucket List" which refers to a list of life goals that individuals wish to experience before they "kick the bucket" can use this same analogy for career planning in emergency medicine. If you have no goals, you certainly won't meet them. Although there are many forces in medicine at the present time that are out of our direct control, there is no doubt that being proactive as opposed to passive in career goals, will more likely lead to greater career satisfaction. Make your career happen, as opposed to it happening to you.

Balance

One cannot overstate the importance of *balance* in achieving a healthy professional and personal life. Work to the exclusion of one's personal life and vice versa will never be a successful situation. Physicians by their nature are high achievers and tend to be perfectionistic. These tendencies can easily lead to work taking precedence over everything else, crowding out one's personal and family life. In contrast, if one's personal life and struggles overwhelm one's career responsibilities, one's career may be in jeopardy as well.

Thus, achieving *balance* between one's work life and their personal life is essential to success at both. Some will have more difficulty at this than others, but the struggle to maintain this balance is essential to long-term success and satisfaction.

Goals important to the emergency physician can be summed up by the following diagram:



In the broadest sense, goals can be divided into *career* goals and *personal* goals. A third category is *financial* goals, which represent somewhat of a hybrid of both one's career and personal goals. Financial goals depend upon and are derived from one's career choices as well as personal goals.

In general, adults will spend approximately 1/3 of their life at work, 1/3 engaging in personal/family time, and the remainder 1/3 spent sleeping. Assuming an average 30 year career post residency, one can expect to spend 9.8 years at work, 10.2 years personal time, and 10 years sleeping! Unless a pill is developed that eliminates the biological need for sleep, the prudent emergency physician will try to optimize both personal and career goals, while trying to maintain the proper balance between them.

Career Goals

Setting career goals is highly individualized. You need to have an open and honest personal discussion with yourself to determine what type of career goals to strive for. Ask yourself, what is my ideal emergency medicine career and where do I see myself in 10 years, 20 years, and 30 years?

No two individual's goals, abilities, or expectations will ever be the same. You will need some soul-searching to determine your optimal career path. You may aspire to an academic career, a clinical career, or a career that combines both. Perhaps you have a special interest in EMS. You will, therefore, want to get the necessary experience to serve such a role. You may have an interest in the business aspects of emergency medicine or perhaps an administrative position. To accomplish this goal, you may decide that obtaining an MBA degree is the best preparation, for example, and plan for this accordingly.

As many differences as there are amongst physicians, there is a career track and work environment out there that will be best suited for you. Finding your optimal work situation will require a great deal of work and research, but finding a work environment that fits you best will be well worth the alternative of spending years working in a career that is uninspiring and gives you little reward or satisfaction.

Emergency medicine is by its very nature a field where you do not typically work independently and group practices are the most common model. You should aspire to find a group that aligns with your personal ideals and values. You will be spending a great deal of time with your work colleagues, so it would make sense to align with a group that shares your values and philosophy, as well as simply enjoying being around them.

Personal Goals

Personal goals are as important to long-term career satisfaction as are career goals. Again the element of personal goals are highly individualized and will include not only the physicians, but their families, as well.

Specifics on personal goals are addressed in another section of this paper.

Financial Goals

Financial goals are also essential to a healthy career in emergency medicine. The unique demands of emergency medicine are well-known: shift work, unscheduled visits, night shifts and holidays, emergency department crowding, government regulation, uncompensated care - the list goes on and on.

No one can practice emergency medicine forever. For this reality, the emergency physician must set financial goals as well. He/she needs to know not only where they want to go, but also needs to set out a plan on how to get there. One does not want to reach the waning years of their career and find out that they should have started saving for retirement 10 years earlier and now will need to work an extra 10 years longer than they had planned. One simply needs to look at what happened to physicians' retirement

plans after the economic meltdown of 2008-2009 to realize the importance of becoming more conservative as one gets closer to retirement.

Again, each individual's goals are unique and there are many ways to achieve one's financial goals. Financial planning is a complex topic unto itself and the purpose of this paper is not to explain the intricacies of financial planning, but to address broad life goals. Physicians have a reputation of being financially naive and are seen as potentially vulnerable to exploitation by some in the financial industry. There are some physicians that have the necessary skills and are knowledgeable enough to manage their own financial affairs independently. Others would be best served by consulting with a professional financial advisor. If one feels they need assistance in this area, then remember "caveat emptor" or "buyer beware." No one else will ever be as careful with your money as you are.

Today there is a wealth of information regarding investing and financial planning available in print and on the internet. Physicians should take charge of their own financial life and be the ultimate decision-maker. Be wary of any financial advisor that sells commission-based products. They have an inherent conflict of interest - they are incentivized to sell you products that earn them the highest commissions, but not necessarily investments that are in *your* best interests. And never forget the truism "If it seems too good to be true, it probably is."

Conclusion

In conclusion, having a healthy career pathway in emergency medicine requires active planning, focus, strategy, and reassessment based on inevitable change. Emergency physicians clearly have the skills needed to adapt to change. They need to take these skills and apply them to their career planning not only as they start their careers, but throughout their career span.

One needs to define goals, both career-oriented and personal. Ideally these goals should be put to paper. Both personal and career goals will help to determine financial goals. Remember, balance between career and personal goals are essential and requires active work to maintain. It will not happen on its own.

Remembering these principles on one's life journey will optimize the likelihood that the emergency physician has the highest chance of success in achieving satisfaction, both in one's career and personal life, and to have the financial foundation that allow the realization of both.

Resources

Building your Career in Emergency Medicine, "Life After Residency," ACEP.org. http://www.acep.org/ACEPmembership.aspx?id=34088

Blair GR. What are your goals – Powerful questions to discover what you want out of life. Las Vegas: Blair Publishing House; 1999.

Covey S. The 7 Habits of Highly Effective People. revised ed. New York, NY: Free Press; 2004.

Ramsey D. The total money makeover: A proven plan for financial success. Nashville, TN: Thomas Nelson Publishers; 2007.

Stanly T, Danko W. The millionaire next door. Atlanta, GA: Longstreet Press; 1996.

Cramer JJ, Mason C. Jim Cramer's Getting Back to Even. New York, NY: Simon and Schuster; 2009.

Technology in the Emergency Department

Mark Meredith, MD, FACEP
Amy Meredith, RN, NP

I must confess I love my automatic espresso machine. Every morning when my alarm goes off, the first thought that comes to my mind is usually, "I can't wait to have that cup of coffee." With a push of a button, I have a beautiful, strong, cup of coffee with the perfect amount of crema on top. Okay, I confess, I am a techno geek. (My wife has other not so savory names for my technology passion, but that is an article for another time). Anything that makes life more pleasant, efficient and consistently works well seems like an idea worth exploring. For the practice of emergency medicine there has been a recent explosion of technology to do just that.

Certainly I will date myself when I tell you there was a time in my career that if I was uncertain if two medications were compatible I went to the trusty, albeit heavy and cumbersome book, the PDR. No emergency department reference shelf was complete without one! For those of you out there who now have PDR on your PDA's, it used to weigh 5 pounds and have several thousand pages. Imagine the hours wasted simply flipping through those pages! Few of us today can imagine not having information on medications, diseases, calculations, and numerous other things handily available to us with a mere stroke of a mini computer key. PDAs have enhanced the practice of medicine so much, that most medical schools now require them for incoming students. Whichever your favorite brand or style, this tiny device just keeps getting better and is at the very top of my list for a must have for every emergency physician.

Remember the hand written charts and the difficult task of finding old medical records? I can recall many stressful hours in a very busy department trying to quickly write my findings, order testing, and move on to the next patient. It was amazing that anyone could ever read my handwriting! It was not just the time it took to document on charts, but the time it took for the staff to decipher hand writing, hand order tests, receive those tests back in hand written form, and finally to make certain that the paper copy from the emergency department made it on to the patient's permanent medical record. It is a wonder we didn't make more mistakes. I shudder to recall the days when at 2 AM I would need to review past admissions on a patient. It required nothing less than calling security to unlock the door to the vaulted medical record department and waiting for the night supervisor or ED staff to have the time to actually go and find the record. Often these records were difficult to read. Sometimes they simply were never found. The electronic medical record eased this process significantly. With the integration of nursing notes, physician notes, in-patient records and the ability to quickly cross-reference older laboratory and radiology studies, patient care has become safer and far more efficient. Not to mention that now no one has to try and read our notoriously bad handwriting! While some would argue that the quick access to every notation made on an electronic record has exposed us to more liability, it has been my experience that few things are more damaging to a defendant than a missing piece of pertinent information.

One of the most stressful things to the emergency physician is a complicated and difficult airway. The patient is rapidly crashing, the nursing staff is calling out the pertinent deteriorating numbers, the respiratory technician is whispering, "Hey Doc, would you like me to try for you" or worse the secretary is calling out, "Should I call anesthesia?" It makes me a bit anxious just thinking about the difficult airway management cases I have experienced. Whether intubation is difficult because of trauma or simply the patient's particular anatomy, trying to visualize the vocal cords while placing an endotracheal tube is stressful even in the best of circumstances. Fiber optic intubation has changed this significantly. With the tiny camera embedded at its end, being able to actually see the airway anatomy as I move the tube forward has made even the most complicated of airways far easier and less stressful.

Recently a woman came in to our emergency department with irregular periods and left lower quadrant abdominal pain. With the use of bedside ultrasound, a quick diagnosis of ectopic pregnancy was made. She was in the OR in less than an hour. This diagnosis historically required performing a culdocentesis. I cannot remember the last time I preformed a culdocentesis for the diagnosis of ectopic pregnancy. When a very large patient arrived in dire need of central venous access, again the use of ultrasound made that procedure much easier allowing me to move on quickly to the next patient. In the early 1980's ultrasound was just becoming routinely available. It often required the approval of the radiologist, and generally meant calling in the technician. Today not only is this test readily available, but many emergency departments have bedside ultrasound. Bedside ultrasound speeds the process of diagnosis and assists in moving patients to treatment efficiently and cost effectively.

One of my favorite advances in medical technology has been the tiny hand held device for evaluating eye pressures, the Tonopen. I did a quick Google search recently using the following words "Schoitz tonometry." My search yielded two results. One was a scholarly article about tonometry in the emergency department written in 1959. The other gave the following description, "Downward movement is multiplied 20 times so each division on the scale corresponds to 1/20mm in the cornea." Say what? Remember the days we searched frantically for the tiny weights and you briefly wondered when the last time anyone had bothered to actually sterilize them. Not to mention how your hand shook as you tried not to transfer any of your own finger pressure on to the cornea. The Tonopen, while occasionally sensitive to calibration technique, quickly and accurately measures intra ocular eye pressure.

The list of technology options could go on. Likely each of you also has a favorite technology that eased the stress and complication of your work life. We often think of technology as costing the health care system too much money. I would submit that in a day when the holy grail of emergency medicine is the catch phrase "through put," if one actually did a cost analysis we would find that in the long run, technology that speeds our ability to evaluate, diagnose and treat patients quickly and efficiently, ultimately saves the health care system money.

I am not suggesting that technology can replace the human touch, or personal critical analysis. Certainly, we must never forget the human patient in the electronic medical record or under the new techy device we are using. However, thoughtful integration of medical technology with our expertise in history taking and physical examination can only enhance our ability to care for our patients and ease the stress of the important work we do.

Finally, I am certain that even our patients would love the perfect cup of coffee! If only I had a high tech espresso machine in my emergency department, life would be perfect!

Maintaining Meaningful Relationships

Gabe Rodriguez, MD

Emergency medicine is one of the most rewarding careers in the field of medicine. We see a diverse patient population from the young to the old, healthy to the critically ill, funded to the unfunded, and we do it 24/7. An attractive feature of the specialty is the excitement factor and not knowing what will come through the door next. On the other hand, continuous excitement can lead to stress, and thus, we must maintain the right balance for our wellbeing. Maintaining meaningful relationships in our lives with our spouses, family, and community can improve the longevity of our career preventing us from becoming one of the 10-12% of emergency physicians that leave the field prematurely. A hectic schedule and fragile

home life can lead to depression, poor work performance, conflict with others, and ultimately a feeling of burnout.

As healthy human beings, we prosper by developing close personal relationships with others. Maintaining a close personal relationship with your spouse or significant other should be a top priority. Clinical/work hours drop significantly post residency, however being home more often does not equate to a happy marriage. It is imperative to spend time everyday sharing feelings and emotions with your significant other in order for your relationship to grow. Marriage success can be stressful, but maintaining that bond with your loved one is vital. First, focus on building a positive relationship with your spouse/loved one. Marital research has shown that couples have at least 5 positive interactions for every 1 negative. When the ratio falls below 5:1 marital relationships begin to struggle. At this point, anger and resentment tend to take over other sentiments. Take the time to repair after arguments or disagreements and do not allow prolonged periods of resentment towards one another. Second, keep up with each other's lives on a daily basis. Take the time to understand each other's goals, wants, needs, or frustrations. This bonding activity is one that we tend to forget when our lives become too busy. Third, make it a point to keep your sex life active. Do not neglect the needs of your relationship because of outside pressures such as work or children. Scheduling a regular date night for just the two of you is critical to renewing your bond and satisfying each other's intimate needs. Finally, celebrate your relationship. It is a gift to be cherished. Commemorate your anniversaries and other special milestones. In the end, your spouse/loved one is the one person who knows you best; accepts your flaws and shortcomings, yet still accepts you for who you are and brings the best out of you.

Balancing family with work is a complex issue that has no easy solution. It involves financial values, career paths, gender roles, and time management. We must decide how much time we want to dedicate to our career and learn to balance that with our loved ones. This can be challenging at times when you are being pulled 3 different ways by hospital staff or administration boards that are requesting medical lectures, committee involvement, or protocol development. Set limits or boundaries to protect time with your family. It is OK to say no to things that are not important to your career goals and may interfere with your familial relationships.

Family-work balance is a process. It takes place on a weekly and daily basis. Preparation and joint decision-making are a couple of keys to maintaining the right family-work balance. Balancing this process means you must adjust as required. If your plan or approach is not working for you and your family; make changes and reconsider alternative approaches. Flexibility is another key quality to achieving family-work balance. Life happens and having enough quality time for both family and work without expanding great effort, while maintaining the right personal and professional path for your future requires flexibility. Employing the following adaptive strategies may offer some assistance in achieving the right balance: 1) Value family as the highest priority over professional responsibilities/advancement 2) Set limits on work hours by separating family and work 3) Live simply, in order to reduce financial pressures and work hours 4) Define success as having a happy family and being happy at work, instead of just your success at work 5) Make a list of essential activities/involvements that you want to maintain 6) Make a list of non-essential tasks that waste your time/energy and hire help when necessary 7) Finally, take care of yourself mentally and physically. Not only is family important to us, but we are important to ourselves. Take the time to enjoy life's great pleasures and your accomplishments. It is important not to lose yourself in becoming a spouse, parent, or successful emergency physician.

As emergency physicians, we have much to be thankful for on a daily basis. We are very fortunate in terms of income, job satisfaction, and intelligence. Thus, giving back to others and the community is an important life enhancement that should we should actively partake in. As successful members of the community, we have a responsibility to assist those that are less fortunate. This can be through financial donations, community service, religious activities, or medical mission trips. A common practice of many

is to donate approximately 10 percent of their income to charitable organizations. Understandably, this amount can vary according to financial hardships and unexpected life changes, but every bit helps when giving back to the communities that we all are a part of.

We truly have a unique set of skills that are valuable to our community. Our ability to multitask, handle stressful situations, and abundance of medical knowledge can allow us to share our time with the community by volunteering as a physician for local sporting event coverage or low income clinics. Giving back in this way can give a real feeling of connectedness to the community and the satisfaction of knowing you are trying to make the world a better place. In addition, volunteering for medical mission trips in remote locations is a great way to put our skills to the test and really put things into perspective. We tend to take for granted the conveniences of running water and electricity.

In the end, give what you can when you can… you'll be surprised at the benefits you reap!

Emergency medicine is a fascinating field of medicine that offers many rewards. However, with it come the many stressors that are associated with the practice of medicine. Taking the time to plan for your own personal well-being and your loved ones can help bring greater joy to your practice of emergency medicine.

Resources

Andrew LB and Pollack ML (eds). Wellness for Emergency Physicians. American College of Emergency Physicians, Dallas; 1995.

Berry E. Achieving Work-Life Balance: More than Just a Juggling Act." *AMA News*, 4 January 2010.

Hall K, Wakeman N, Levy R. Factors associated with career longevity in residency-trained emergency physicians. Ann Emerg Med. 1992;21:291-297.

Little J. How do you maintain a work-life balance?" TEXAS The McCombs School of Business Magazine. Fall/Winter 2009, 17.

Marriage Success Training. *Marriage Facts*. Available from http://www.stayhitched.com.

Pollack M and Scaletta T. Wellness In: *Rules of the Road for Young Emergency Physicians.* AAEM, 2009; 79-84.

Developing a Healthy Lifestyle

James Cao, MD

Sleep Patterns

Erratic scheduling and sleep deprivation are two of the most influential contributors to the high burnout rates seen in the profession of emergency medicine.[1,2] With the necessity for 24 hour coverage to treat critically ill patients, emergency physicians are obligated to work both day and night shifts. Studies have documented the negative consequences of shift work, many of which are akin to those detrimental effects of jet-lag syndrome including fatigue, sleepiness, lethargy, insomnia, gastrointestinal tract disorders, and poorer mental agility and performance. A study done by Smith-Coggins et al regarding emergency

physicians in 1994 confirmed the negative effects of shift work on sleep patterns, performance tasks, mood, and longevity.[3]

Human physiology is highly adaptable to its surrounding environment. Intrinsic cycles anticipate diurnal changes via control of body temperature, heart rate, blood pressure, and innumerable cellular modulations of hormones, enzymes, neurotransmitters, electrolytes, and metabolic substrates.[4] Those oscillations that operate close to 24-hours are termed circadian ('about a day'). The major characteristics of the human internal clock or circadian rhythm are 1) entrainability (clocks are synchronized by external cues), 2) sustainability (oscillations continue without external cues), and 3) compensation (rhythms are inert to ambient or spurious environmental changes such as temperature or even light).[5] The external modulators that guide the Circadian rhythm are called "zeitgebers" with the light-dark cycle being the most important. Ambient light traverses from the retina via a direct neuronal pathway to the suprachiasmatic nucleus (SCN), the central circadian clock. Ancillary pacemaker work with the SCN to regulate circadian rhythms. One such ancillary pacemaker is the pineal gland that is responsible for the secretion of melatonin. Melatonin acts almost antagonistically to the light-dark cycle - levels are low during the day and high at night with a peak around midnight. The coupled activity of melatonin and the light-dark cycle provides the circadian timing system the sustainability or inertia. Little variation in melatonin secretion pattern occurs with an acute disruption in sleep pattern. However, it has been noted that melatonin secretion decreases with age and is implicated in daytime sleeping difficulty of older emergency physicians.[6]

Desynchronosis is a term to describe the offset between the sleep-wake cycles with the rest of the environment and is responsible for the symptoms of jet-lag. Traditional jet-lag occurs from rapid change in time zones and consequently a shift in the light-dark cycle. Travelers are able to entrain to a new schedule aided by family and social cues. For shift workers, the social cues are absent and are a source of constant distraction even for those who work night shifts permanently. As a result desynchronosis leads to persistent problems such as sleep disturbance, cardiovascular disease, peptic ulcer disease, chronic fatigue, excessive sleepiness, substance abuse, depression, preterm birth, pregnancy loss, weakened immune system, elevated blood pressure and cancer. Sleep deprivation is the most common and significant adverse effect.[6] On average, morning sleep lasts 4.5 hours as opposed to the 8 hours during the night.[7] Sleep becomes more truncated the later the time of sleep initiation. There is no consensus as to the molecular explanation, but one possibility is the dissociation of melatonin with light-dark cycle.[8] Cardiovascular health in night time shift workers has been associated with a relative risk between 0.6 to 1.4 by review of literature through 2008. However, studies involving both fatal and non-fatal events show positive correlation.[9] Possible behavioral and social disruptions may lead to adverse cardiovascular health. Studies have shown elevated serum triglycerides independent of social factors such as obesity, smoking, or alcohol.[10]

As common as these adverse effects of shift work are, they are not an absolute in every individual. Some individuals are better able to tolerate the chaotic desynchronosis than others. The unpredictability of individual tolerance to shift disturbance in addition to the behavioral and social variability has yielded little usable evidence towards solutions to deal with desynchronosis. However, articles have described coping mechanisms for shift work. One solution hires permanent night shift workers where no phase shifts are required for either day or night workers. However, as mentioned previously, even in these permanent night shift workers, day time social cues and obligations will induce a certain amount of desynchronosis. Alternatively, short strings of night shifts as part of a clockwise shift rotation allows physicians to minimize sleep debt accumulation while never actually adapting to new phase. Physician autonomy to schedule their own shifts and shortening the night shifts to allow for ample recovery sleep will both aid in avoiding desychronosis.[11,12]

Sleep management is important for the recovery after a string of night shifts. The typical sleep during the day is shorter than sleep at night. Consequently, sleep debt accumulates and must be paid with additional sleep at the conclusion of night shifts. To reduce the accumulation during night shifts, sleep environment should be optimized by emulating that of night sleep – darken room with black out blinds, ear-plugs to block ambient day time noise, and avoid day time obligations. Medications like benzodiazepines, non-benzodiazepine-receptor agonists, and melatonin have been studied as potential sleep aids. Per expert consensus published in the Journal of Clinical Sleep Medicine in 2009, benzodiazepine and non-benzodiazepine-receptor agonists are first line pharmacotherapy for primary insomnia. These medications include zolpidem, eszopiclone, zaleplon, and temazepam.13 Melatonin has shown efficacy for travelers with jet-lag. However for emergency physicians, melatonin has not shown similar benefit. Although studies involving emergency physicians are limited by the small sample size, the lack of benefit might also be attributed to the absence of social cues for entrainment.6

Further research in the area of shift work and health consequences may aid in the development of more individualized coping strategies.

Dietary Guidelines

Dietary habits are integral in the maintenance of health. What we eat is an important part of how our bodies are maintained as well as how we feel. As the saying goes, "you are what you eat" a notion that the food one consumes reflects upon the person's fitness and health. In our society, the perception of being fit has become overwhelming with the influence of the media showing slim, curvy figures. Yet equally prevalent are the overweight and obese as a product of the vast quantities of unhealthy meals at affordable prices. Although many products and books advertise the ideal diet such as low fat or low carbohydrates, the bottom line for weight loss is a negative caloric balance – more caloric usage through activity and less caloric intake. As a corollary in order to maintain body weight, the caloric output should be equivalent to the intake.

The U.S. Department of Health and Human Services publishes the "Dietary Guidelines for Americans" which aims to provide evidence-based advice on the maintenance of health. The guideline is revised every 5 years with the current edition from 2005. The new update is slated for this year but has not been published yet. In this guideline, the Dietary Guidelines Advisory Committee makes recommendations for patterns of eating and summarizes knowledge regarding nutrients and food components.[14,15]

The standard reference for caloric intake by the Dietary Guideline is 2000 calories per day. The guideline acknowledges the variation of caloric requirements by a person's age, gender, and activity level, and such variations are taken into account by the USDA Food Guide (http://www.mypyramid.gov/mypyramid/index.aspx) to give a personalized recommendation. In addition to the caloric intake, the foods consumed must be diverse and nutrient dense such that the food supplies high amounts of micronutrients such as vitamins and minerals for the amount of calories. The USDA Mypyramid will output the daily recommended amounts of grains, vegetables, fruits, milk, meat and beans. For those consuming nutrient-dense foods, the nutritional recommendations may be met without reaching caloric limits. The remainder of calories includes oils and discretionary calories (extra fats, sugars, and alcohol). For alcohol intake, the dietary guideline recommends less than 1 drink per day for women and less than 2 drinks per day for men.[15]

The 2005 Dietary Guideline suggests the following proportion of macronutrients (fat,proteins, and carbohydrates).Total fat intake should be less than 20-35% of total calories with less than 10% of calories from saturated fat. Cholesterol intake to be less than 300 mg/day based on a 2000-calorie diet. Keep trans fats to a minimum. Carbohydrate intake should be 45-65% of total calories, and protein intake should be 10-35% of total calories. The guideline makes no specific recommendation for a weight loss regimen so

long as minimum recommendations of fat, carbohydrates, and proteins are met in order to avoid micronutrient deficiencies.[15]

Micronutrients including vitamins and minerals are found in the various food groups in a daily diet. Supplements may be of benefit when specific nutrients are not met by an individual's regular diet. For nutrients, already fulfilled in food, supplements will not provide further benefit. Additionally, supplements are unable to provide the diversity of micronutrients found in natural foods such as "carotenoids, flavonoids and isoflavones, and protease inhibitors that may protect against cancer, heart disease, and other chronic health conditions."[15] For most US adults, nutrients are typically met with fulfillment of recommended allowances in the various food groups. The strongest predictor for adequate nutrient intake is energy intake, and consequently, the adequacy of nutrient intake may be aided by increasing daily physical activity which helps to increase energy intake.[16] However, certain nutrients may be low enough to raise concern including vitamins A, C, and E, calcium, magnesium, potassium, and fiber. Nutritional requirements may vary by age and gender groups. Adolescent females and women of child-bearing age will require increased iron and folic acid. Persons older than 50 years need to pay special attention to B_{12}. And vitamin D supplements are recommended for the elderly, persons with dark skin, or persons with insufficient UVB radiation exposure.[15]

As a part of the 2005 Dietary Guidelines, physical activity plays a large part in an individual's dietary habits. The maintenance of weight requires the balance of caloric intake and caloric output in the form of physical activity. In other words, the amount of physical activity is a crucial factor in the determination of caloric requirements. As mentioned previously, the extra caloric intake from increased physical activity will facilitate adequate intake of nutrients. Additionally, an active lifestyle reduces risk of chronic diseases such as hypertension, stroke, coronary artery disease, type 2 diabetes, colon cancer, and osteoporosis. In the elderly, physical activity reduces decline in functions associated with aging, aids weight management, helps relieve constipation, and prevents osteoporosis. Psychologically, exercise promotes mental well-being and reduces the risk of depression. Physical inactivity on the other hand is an independent risk factor for atherosclerotic disease, type 2 diabetes, colon cancer, and other chronic diseases. The 2005 Dietary Guideline provides the following recommendations for physical activity to the general American public. The goal is for 30 minutes of moderate physical activity on most days of the week. Examples of moderate physical activity includes walking briskly, mowing the lawn, dancing, swimming, or bicycling on level terrain during which a person feels some exertion but is still able to carry on a conversation. Additionally, more than 30 minutes of moderate to vigorous physical activity on most days of the week will provide additional benefits. For adults trying to prevent unhealthy weight gain, the guideline recommends up to 60 minutes of moderate to vigorous physical activity on most days. Vigorous physical activity includes jogging, high impact aerobic dancing, swimming continuous laps, or bicycling uphill.[15]

Substance Abuse

In the United States, the prevalence of substance abuse (including nicotine) amongst physicians is estimated to be 10-15% which is similar to that of the general public.[17] Addiction is a disorder that paradoxically hijack's the human brain's adaptive reward system, the limbic system. Supraphysiologic reward and impaired inhibitions of illicit substances reinforces maladaptive behavior. Through a mechanism of recruitment of neocortical function by the limbic system, addition protects continued access to the illicit substance, and for physicians, the higher functioning cortex allows for rationalization and sophisticated resistance.[18]

Recognition of impaired physicians as with substance abuse began in the 1970s. Since then physician health programs (PHPs) have been developed to assist physicians with early intervention in a non-punitive manner. Referral of an impaired physician is also non-punitive and strongly emphasized by the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) and the American Medical

Association. Reporting a physician as well as requesting anonymous guidance can be found via a regional PHP (http://www.fsphp.org).[18]

Mental Health

Mental health of physicians and especially emergency physicians is an important aspect of one's wellness. Depression is a leading cause of impairment among physicians. Although the prevalence of mental illness among physicians is similar to that of the general public, the risk of completed suicide is significantly higher especially amongst female physicians.[19] Studies in the past have shown that the stresses of long hours, demanding patients, and ready access to narcotics were not correlated with physician suicides.[20] Rather, physicians who contemplate suicide were unable to manage stressful events as a product of preexisting depression.[21] The culture of medicine to hide health vulnerabilities and the bureaucratic hurdles and discrimination are major barriers for physicians to seek medical attention. Although changes have been attempted to create a less punitive licensure process, physicians continue to shy away from the traditional means of treating mental illness.[22]

Resources and support are available for physicians. Regional PHPs (http://www.fsphp.org) provide anonymous guidance for impaired physicians including mental illness.

Dr. Louise B. Andrew of the ACEP Well-being Committee has written numerous articles relating to physician suicide and maintains websites dedicated to the topic. Please visit the websites below for further information:
http://www.black-bile.com/
http://www.mdmentor.com/
http://www.afsp.org/
http://www.doctorswithdepression.org/
http://www.suicidepreventionlifeline.org/GetHelp/Default.aspx

Other Resources

In addition to the above topics, the ACEP website provides useful information on health maintenance as listed below:

Health Screening
http://www.acep.org/ACEPmembership.aspx?id=32102

Resources for Emergency Physicians in Pre-Retirement Years
http://www.acep.org/ACEPmembership.aspx?id=32100

References

1. Hall K, Wakeman N, Levy R. Factors associated with career longevity in residency-trained emergency physicians. *Ann Emerg Med.* 1992;21:291-297.
2. Hall K, Wakeman J. Residency-trained emergency physicians: their demographics, practice evolution, and attrition from emergency medicine. *J Emerg Med.* 1999;17:7-15.
3. Smith-Coggins R, Rosckind M, Hurd S, et al. Relationship of day versus night sleep to physician performance and mood. *Ann Emerg Med.* 1994;24:928-934.
4. Waeckerle JF. Circadian rhythm, shift work, and emergency physicians. *Ann Emerg Med.* 1994;24:959-961.
5. Merrow M, Spoelstra K, Roenneberg T. The circadian cycle: daily rhythms from behaviour to genes. *EMBO Rep.* 2005;6:930–935.
6. Kuhn G. Circadian rhythm, shift work, and emergency medicine. *Ann Emerg Med.* 2001;37:88-98.
7. Åkerstedt T, Folkard S. The three-process model of alertness and its extension to performance, sleep latency, and sleep length. *Chronobiol Int.* 1997;14:115-123.

8. Weibel L, Spiegel C, Follenius G. Twenty-four-hour melatonin and core body temperature rhythms: their adaptation in night workers. *Am J Physiol.* 1997;272:R948-R954.
9. Frost P, Kolstad HA, Bonde JP. Shift work and the risk of ischemic heart disease - a systematic review of the epidemiologic evidence. *Scand J Work Environ Health*. 2009;35(3):163-79. Epub 2009 Apr 22.
10. Knutsson A. Shift work and coronary disease. *Scand J Soc Med Suppl*. 1989;44:1-36.
11. Monk T, Folkard S. Strategies for the employed. In: Monk T, Folkard S, eds. Making Shift Work Tolerable. London: Taylor and Francis; 1992:69-76.
12. Gillberg M. Subjective alertness and sleep quality in connection with permanent 12-hour day and night shifts. *Scand J Work Environ Health*. 1998;24:76-80.
13. Schutte-Rodin S, Broch L, Buysse D, et al. Clinical guideline for the evaluation and management of chronic insomnia in adults. *J Clin Sleep Med*. 2008;4(5):487-504.
14. 2005 US Dept of HHS and Dept of Agriculture. http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2005/2005DGPolicyDocument.pdf
15. 2005 Dietary Guideline Advisory Committee Report. http://www.health.gov/dietaryguidelines/dga2005/report/
16. Foote JA, Murphy SP, Wilkens LR, et al. Dietary variety increases the probability of nutrient adequacy among adults. *J Nutrition*. 2004;134:1779-1784.
17. Hughes PH, Brandenburg N, Baldwin DC, et al. Prevalence of substance use among US physicians. *JAMA*. 1992;267:2333-2339.
18. Gastfriend DR. Physician substance abuse and recovery: What does it mean for physicians—and everyone else? *JAMA*. 2005;293;12. 1513-1515.
19. Center C, Davis M, Detre T, et al. Confronting depression and suicide in physicians: a consensus statement. *JAMA*. 2003;289(23):3161-6.
20. Vaillant GE, Sobowale NC, McArthur C. Some psychologic vulnerabilities of physicians. *N Engl J Med*. 1972;287:372-375.
21. Hendin H, Hass AP, Maltsberger JT, et al. Determination of precipitating events in the suicide of psychiatric patients. *Suicide Life-Threatening Behav*. 2003;22:111-119.
22. Schwenk TL, Gorenflo DW, Leja LM. A survey on the impact of being depressed on the professional status and mental health care of physicians. *J Clin Psychiatry*. 2008;69(4):617-620.

Developed by members of the ACEP Well-being Committee
September 2010