By Bryan Walsh Thursday, Aug. 20, 2009 &#65533;
Influenza vaccinations are usually an afterthought for most people. Despite the easy availability of the shots, fewer than 40% of Americans get them in any one year &#65533; never mind that flu kills some 36,000 of us annually. But this flu season is likely to be different. Thanks to the new H1N1/09 virus, to which almost none of us are immune, flu anxiety is high &#65533; and demand for the new vaccine should be too. Washington is now gearing up to respond, hoping to inoculate millions of Americans and blunt the severity of the first pandemic in four decades.   The problem is, there won't be enough vaccine to inoculate all 300 million of us right away, and that means health officials have to prioritize. Last month, the Centers for Disease Control and Prevention (CDC) identified the groups that should get the very first doses, and the list did not contain many surprises: pregnant women, children between 6 months and 4 years of age, anyone in a household who has contact with kids younger than 6 months old, health-care workers who have direct patient contact and all kids ages 5 to 18 who have underlying medical problems. "[Prioritization] is a very important step for planning vaccinations in the fall," says Anne Schuchat, director for the National Center for Immunization and Respiratory Diseases. The elderly, who usually get first dibs on seasonal flu shots, are conspicuously missing from this list because they have so far been much more resistant to the H1N1/09 strain than young children.
(See pictures of thermal scanners searching for swine flu.) On its face, this plan makes sense, especially since it conforms to the usual epidemiological practice of protecting the most vulnerable first. But a new study in the Aug. 20 issue of Science suggests that in this case, the usual practice might not be the best. Rather than inoculating the people likeliest to die from H1N1/09, we may want instead to inoculate the people likeliest to spread it. After all, even the most at-risk among us can't get sick with a virus we never come in contact with. "If you can stop transmission, you can protect the people who are vulnerable," says Jan Medlock, a mathematician at Clemson University and one of the authors of the Science paper. Medlock and co-author Alison Galvani of Yale University School of Medicine studied mortality data and data of infectious contacts from the influenza pandemics of 1918 and 1957. They then built a mathematical model to determine the best distribution by age for vaccinations, in order to contain the spread of a theoretical pandemic. In their calculations, the most effective policy was to aim first for inoculating children ages 5 to 19 and adults ages 30 to 39. That's because school-age children are such a powerful nexus of flu infection: they get sick, infect one another in the close and less-than-hygienic hothouse of school and then bring the virus back home to their parents. The parents, in turn, can then infect others in the community. Knock these links out of the transmission chain, and the spread of the virus slows down considerably &#65533; an assertion backed up by studies from Japan, where vaccinations of young children against regular seasonal flu reduced infections and deaths among the most vulnerable elderly. "There's really a disproportionate amount of transmission going in schools," says Medlock.
(See pictures of soccer in the time of swine flu.) The new strategy is a variation on what's called herd immunity &#65533; the idea that even if you can't vaccinate an entire population, you can achieve nearly complete disease control by vaccinating at least the overwhelming portion of it. That's because every inoculated person serves as a sort of firebreak against the virus; surround the disease with enough people who are immune to its spread, and it simply winks out, never reaching the few people who still aren't immune. The Science study offers a chance to get a kind of herd immunity on the cheap by inoculating the super-spreaders first. "As long as there

are more than 40 million doses of vaccine, this looks like the best way to go," says Medlock. The CDC's vaccine recommendations track with the Science study more than they seem to, since the government does recognize that the elderly are less vulnerable to H1N1/09 than they are to regular flu and that super spreader school children are more vulnerable. Vaccinating the kids, as well as people in their parents' age group, could go a long way toward protecting all of us. Source: http://www.time.com/time/health/article/0,8599,1917707,00.html?artId=1917707?contType=article?chn=sciHealth