Increases of Hepatitis C in Suburban and Rural Youth: What is the appropriate public health response?

January 29, 2014

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Overview

1. Hepatitis C virus (HCV) transmission and epidemiology (Rachel McLean, CA DPH)
2. HCV Infection in adolescents and young adults: The second wave epidemic (Dan Church, MA DPH)
3. Effective HCV prevention messages for the field (Caycee Cullen, UCSF VIP Study)
4. Discussion/Q&A (All)
5. Resources (Rachel McLean, CA DPH)
Hepatitis C Transmission and Epidemiology– A Quick Review

Rachel McLean, MPH
Viral Hepatitis Prevention Coordinator/
STD Health Care Policy Analyst
CA Department of Public Health
Hepatitis C Virus: What Is It?

- Bloodborne virus that enters the body and replicates in the liver
- Can live outside the body
- No vaccine (yet)
Transmission routes

Primarily:
-- receiving a blood transfusion before 1992 or
-- EVER sharing injection drug use equipment

Other, less common routes:
-- health care-related exposures (accidental needlesticks, dialysis, etc.)
-- household contact (sharing razors, tattoo equipment in prisons)
-- very limited sexual transmission; risk increased by HIV coinfection
HCV Transmission Risk – It’s All About the Blood
Incidence of Acute HCV in the United States, 1982-2008

- Surrogate testing of blood donors
- Anti-HCV test (1st generation) licensed
- Anti-HCV test (2nd generation) licensed
- Decline among transfusion recipients
- Decline among injection drug users
Chronic HCV Prevalence, Costs, and Consequences

• 3-4 million people with HCV infection in U.S.
  – 3 out of 4 were born during 1945-1965
  – Most are unaware of their infection
  – CDC recommends HCV testing for baby boomers and for persons who have ever injected drugs*

• HCV causes liver disease, liver cancer, death
  – Leading cause of liver transplants
  – Annual HCV deaths now outnumber HIV deaths
  – $2.3 B in HCV hospitalization charges, CA, 2010

* For more information on HCV testing recommendations, see www.cdc.gov/hepatitis
Chronic Hepatitis C – Rates of Newly Reported Cases, California, 1994-2011

- CA Laboratory Reporting Implemented (July 2007)
- CA Provider Reporting Implemented (1994)
- Received Data Files from Foundation Laboratory (2008–2009)
- Received Data Files from Quest Laboratory (2007 – ongoing)
Chronic Hepatitis C – Percent of Newly Reported Cases for Which Race/Ethnicity is Known, by Race/Ethnicity compared with the General Population, California, 2011

Newly Reported Cases of Chronic Hepatitis C

General Population of California

Note: The percentages shown are among the cases with known race/ethnicity. Race/ethnicity information was missing for more than two-thirds (67.9 to 81.8 percent) of cases from 2007-2011.
Chronic Hepatitis C – Cases and Rates of Newly Reported Cases (per 100,000) by Age and Gender, California, 2011
Chronic Hepatitis C – Rates of Newly Reported Cases by Age, California, 2007-2011

Rate per 100,000 population

<18
18–24
25–34
35–44
45–54
55–64
≥65

Year
2007 2008 2009 2010 2011

STD Control Branch
Chronic Hepatitis C – Rates of Newly Reported Cases in State Prisons by Age*, California, 2007-2011

* State prison census data use different age group categories than the California Department of Finance categories used in this slide set.
Chronic Hepatitis C, Rates of Newly Reported Cases (per 100,000) by County, Excluding Cases in State Prisons, California, 2011

Notes: • Rates were not calculated for the following local health jurisdictions, which reported 5 or fewer cases in 2011: Alpine (0), Colusa (2), Inyo (2), Mono (1), and Sierra (1) counties.
• State prison cases were removed from local health jurisdiction totals and attributed to the state prison system as a whole.
HIV, STDs, and HCV – Do the high risk groups overlap?

- MSM
- People of color
- Young women; teens
- IDUs

HCV

SYphilis

HIV

CHLAMYDIA

GONORRHEA
HIV, STDs, and HCV – Do the high risk groups overlap?

- MSM
- People of color
- Young women; teens
- IDUs

- HCV
- Syphilis
- HIV
- Chlamydia
- Gonorrhea
Police: When prescription pill abuse becomes too expensive, users switch to cheaper heroin

Heroin replacing pain pills as drug of choice in some parts of Kentucky

Heroin and pill abuse stir a battle cry in Vermont
Hepatitis C Virus Infection in Adolescents and Young Adults: The Second Wave Epidemic

Dan Church, MPH
Massachusetts Department of Public Health
Bureau of Infectious Disease
Goals of presentation

• Discuss what we know about HCV infection among young IDU
  – What is the scope of the problem?
  – What are the challenges?
• Discuss what needs to be done to address the issue
U.S. Response to HIV and Viral Hepatitis Epidemics

Edlin, 2011
HCV and injection drug users

• Up to 10 million HCV+ IDU globally\(^1\)
• IDU accounts for 68% of all new HCV infections in the US\(^2\)
• \(\leq 32\%\) IDUs infected with HCV within 1 year of first injecting; 53% within 5 years
  – Has this changed?

1. Nelson et al., 2011; 2. CDC; 3. Hagan et al., 2008
How reliable are current estimates of HCV incidence?

- CDC estimates only 17,000 new HCV infections annually

<table>
<thead>
<tr>
<th>Number of New HCV Infections</th>
<th>Population</th>
<th>Number of Cases reported to public health</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>IDUs</td>
<td>0</td>
<td>Hagan et al. 2002</td>
</tr>
<tr>
<td>188</td>
<td>Hospital</td>
<td>1</td>
<td>Kim et al. 2013</td>
</tr>
</tbody>
</table>
HCV surveillance at the state and local levels

• Limited capacity to monitor cases of HCV infection at local and state level
  – High volume
  – Wide range of available infrastructure
  – Most jurisdictions have no funding to support efforts

• Even so…. 
Notes from the Field: Risk Factors for Hepatitis C Virus Infections Among Young Adults --- Massachusetts, 2010

Weekly
October 28, 2011 / 60(42):1457-1458

During 2002--2009, rates of newly diagnosed hepatitis C virus (HCV) infection increased from 65 to 113 cases per 100,000 population among persons aged 15--24 years in Massachusetts (1). Accordingly, the Massachusetts Department of Public Health (MDPH) and CDC interviewed persons aged 18--24 years with HCV infection reported to MDPH during July 1--December 31, 2010, to elicit detailed information regarding demographic, clinical, and risk characteristics.

Of the 394 patients indentified, 193 (49%) had a valid telephone number; of those 193 patients, 101 (52%) did not answer after three call attempts, 19 (10%) were either in a drug treatment facility or incarcerated, 19 (10%) refused to participate, 31 (16%) agreed to participate but did not come on the scheduled interview day, and 23 (12%) completed the interview. An additional five persons aged 18--24 years with diagnosed HCV infection during July 1--December 31, 2010, but not reported to MDPH, were interviewed in a correctional facility, where they were incarcerated.

Mean age of the 28 respondents was 21.9 years (range: 19--24 years); 15 (54%) patients were female, 23 (82%) were white, nine (32%) did not finish high school, nine (32%) were unemployed, and 25 (89%) had health insurance. Twenty-six (93%) had used drugs; of these, 100% reported marijuana use, with a median age of initiation of 13 years (range: 9--17 years); 92% reported opioid analgesic abuse (oxycodeone and/or Oxycotin), with a median age of initiation of 17 years (range: 12--23 years); and 89% reported heroin use, with a median age of initiation of 18 years (range: 14--21 years). Nearly all respondents (95%) used opioid analgesics before switching to heroin. During the preceding 6 months, the most frequently injected drugs among respondents were heroin (50%) and opioid analgesics (30%).

Medical record reviews showed that five respondents had visited emergency departments on multiple occasions complaining of pain and were prescribed opioid analgesics. Most respondents (70%) reported sharing syringes and drug paraphernalia within networks of injection drug users that included persons with known HCV infection (43%). One in four respondents reported never being informed of their HCV infection by their health-care provider, and 11 (39%) were tested for HCV in a drug treatment program or during incarceration.

The findings in this report are subject to at least three limitations. First, only a small number of persons agreed to be interviewed, which limits the ability to generalize these findings. The low response rate might be attributed, in part, to the characteristics of the targeted population (young injection drug users) coupled with lack of provision of incentives. Second, comparison of the demographic and clinical characteristics of persons who were interviewed with those who could not be interviewed was not possible because information was lacking for nearly 60% of the 394 hepatitis C cases reported during July 1--December 31, 2010. However, of those cases with available information, 229 (58%) occurred among females and approximately 80% occurred among whites, which is consistent with the demographic characteristics of interviewed respondents. Finally, persons with HCV infection who were in drug rehabilitation centers could not be interviewed because of federal confidentiality regulations specific to these centers.

Consistent with other studies, most respondents reported opioid analgesics abuse before switching to heroin (which is less expensive) (2,3). Health-care providers should routinely ask about prescription and illicit drug use and screen all persons with risk factors for HCV infection, regardless of age (4). They also need to be aware of warning signs of prescription opioid and drug abuse, such as frequent complaints of pain and request for opioids. Drug treatment programs should be aware of the potential for treatment only to increase the number of persons at risk for hepatitis C of young injection drug users and be prepared to address some of these issues.
Increasing reports of injection-related HCV infections among persons under 30

Massachusetts
MMWR, Hepatitis C Virus Infection Among Adolescents and Young Adults – Massachusetts, 2002—2009, May 6, 2011 / 60(17);537-541

Upstate New York

Wisconsin
MMWR, Notes from the Field: Hepatitis C Virus Infections among young adults – rural Wisconsin, 2010, May 18, 2012 / 61(19);358-358

Additional states reporting increases in HCV cases: Alabama, Colorado, Connecticut, Georgia, Indiana, Kentucky, Maine, Maryland, Montana, New Mexico, North Carolina, Oregon, Tennessee, Washington and West Virginia
Why is this happening now?

- Oral prescription opioid sales quadrupled between 2000 and 2010\(^1\)
- Increased access appears to be impacting increase in heroin injection\(^2\)
  - Variability in drug use patterns between jurisdictions, urban v. suburban v. rural
- Reduced focus on prevention of bloodborne diseases among IDU nationally, due in part to decreased HIV rates

Hepatitis Case Counts by Age
Pennsylvania, 2010

Courtesy of Jon Zibbell, CDC, 2013
Reports of increasing HCV infections related to IDU among persons under 30 in New York State

2. Rise in reported cases in town of Corinth, located in Saratoga county in Upstate NY
3. Most recently, reports in Cortland county, rural county outside of Syracuse, sparked initial investigation (n=11) and follow-up targeted survey

Courtesy of Jon Zibbell, CDC, 2013
HCV among youth in Massachusetts 2007-2012

- Increase of newly diagnosed HCV infection noted among people 15-29 years of age
- Between 2002 and 2012, an increase of 68 to 156 cases per 100,000 population was reported in this age group
- Surveillance data suggest increase is due to youth injecting drugs (mostly heroin)
MMWR: Age distribution of newly reported confirmed cases of hepatitis C virus infection --- Massachusetts, 2002 and 2009

* N = 6,281; excludes 35 cases with missing age or sex information.
† N = 3,904; excludes 346 cases with missing age or sex information.

Source: Onofrey et al MMWR: May 6, 2011 / 60(17);537-541
Confirmed and probable reported HCV cases in Massachusetts, 2012

Data as of 13AUG2013 and subject to change.
Confirmed and probable reported female HCV cases in Massachusetts, 2012

Data as of 13AUG2013 and subject to change
Confirmed and probable reported male HCV cases in Massachusetts, 2012

Data as of 13AUG2013 and subject to change
Injection equipment sharing practices, MDPH enhanced surveillance, 2012

Of 41 interviewed cases who reported ever IDU:

<table>
<thead>
<tr>
<th>Activity</th>
<th>n</th>
<th>%</th>
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<tbody>
<tr>
<td>Ever used syringe previously used by another injector</td>
<td>29</td>
<td>71</td>
</tr>
<tr>
<td>Ever divided up drugs using a needle (back loading)</td>
<td>24</td>
<td>59</td>
</tr>
<tr>
<td>Ever used cooker, bottle cap, or spoon after someone else used it</td>
<td>29</td>
<td>71</td>
</tr>
<tr>
<td>Ever used cotton after someone else used it</td>
<td>28</td>
<td>68</td>
</tr>
<tr>
<td>Ever used rinse water after someone else used it</td>
<td>25</td>
<td>61</td>
</tr>
<tr>
<td>Knew where they could access clean needles</td>
<td>31</td>
<td>76</td>
</tr>
</tbody>
</table>
What has MDPH done in response?

- Fully integrated HCV education, screening, testing services with all 34 HIV prevention/screening programs
  - Testing programs now required to complete HCV case report form (including for rapid test)
- 5 needle exchange programs, pilot Narcan distribution, pharmacy access to sterile syringes
- Integration of HCV medical management into 5 HIV case management programs
- Education by MDPH staff and community partners
- Ongoing data collection and dissemination of findings
Service delivery outcomes at prevention and screening programs: CY2012

- In FY2013, 69,114 HIV tests conducted (0.4%+)
  - 9,152 HCV tests conducted (7% antibody positive)
- Of HIV testing clients, 9,692 (14%) reported IDU
  - 1,356 (14% of all IDU seen) were tested for HCV
- Of clients tested for HCV:
  - 28% were between 13 – 24 years of age
  - 24% were Black, 30% Hispanic, and 42% White
Other service delivery outcomes

- In FY2013, 1,744 (26%) of enrolled needle exchange program clients were ages 18-29
  - A total of 12,719 syringes were distributed
- More than 2,000 overdoses reversed with the Narcan pilot program
- Between 2010-2013, 3,055 clients received some HCV case management services, 7% reported as having started HCV treatment
Challenges to HCV prevention among IDU

• Low awareness by public and providers (IOM, 2010)
• Stigma regarding drug use and addiction
• Variability in the epidemiology of addiction
  – Injection of prescription opioids v. heroin
• Limited distribution of sterile drug injection equipment
  – Currently, no federal funds can be spent on distribution of sterile syringes
  – Engagement of young people by syringe exchange programs?
• Public health response is greatly underfunded
  – Testing availability limited
  – Inconsistent national surveillance
What is needed: multi-component prevention programs

- Distribution of sterile drug injection equipment*
- Education (including peer-based)*
  - Focus on harm-reduction principles
- Opioid replacement therapy*
- Provider education: reduce stigma, increase access to IDU services in primary care
- Overdose prevention
- Testing, treatment
  - Impact of new HCV medications on prevention?

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Effective HCV Prevention Messages for the Field – Lessons from the UFO Model

Caycee Cullen
Recruitment and Retention Coordinator
Vaccination is Prevention (VIP) Study
University of California San Francisco
About the UFO Model

A series of community-based research studies of HIV, HBV and HCV, health consequences of drug use, vaccine feasibility and adherence in young adult injectors in San Francisco

Source: University of California San Francisco, Center for AIDS Prevention Studies
http://caps.ucsf.edu/ufo-study/
Are you seeing this among young adults in your community?

* Addiction to prescription opiates (like oxycontin) that turns into injecting
* Hepatitis C (HCV) infections
* Drug overdoses

If so, the UFO Model could be helpful
UFO Model Approach

Cultural competency/non-judgment
Youth-centered focus
Outreach and consistency
Collaboration and referrals
Core Components

Outreach and education
Youth-centered referrals
Drop in center
Syringe access
HCV testing and HAV/HBV vaccination
Education and support groups
HCV Transmission Risk –
It’s All About the Blood
The Drug Injection Process

Add drug to cooker/spoon

Add water

Heat

Add cotton filter

Draw up liquid into syringe

Tie on a tourniquet to make vein more prominent

Clean injection site with alcohol wipe

Inject drug

Put pressure on injection site to stop bleeding

Dispose of equipment in sharps container

Source: Images courtesy of Chicago Recovery Alliance
Sample Safer Injection Kit

1. Empty bottle
2. Bleach *(optional)*
3. Band-Aid
4. Sterile water and saline solution
5. Tourniquet
6. Bottle cap or “cooker”
7. Cotton pellets
8. Syringe
9. Safer injection instructions
10. Alcohol wipes

*Many SEPs no longer distribute bleach as it is not necessarily effective in killing HCV*
Core HCV Prevention Message

Do not share needles or injecting equipment (e.g. cookers, cottons, water, tourniquets)!
Always use your own stuff and use it ONCE
Use “a new kit for every hit”
WHERE to get new equipment

Authorized Syringe Exchange Programs (SEPs) in California

As of October 2010

Source: http://www.cdph.ca.gov/programs/aids/Pages/OASyringeAccess.aspx
WHERE to get new equipment

All pharmacies in California may sell up to 30 syringes to adults without a prescription

HOW to avoid sharing equipment

Label your equipment so you know it’s yours
Keep it all in one place so it doesn’t get mixed up
Dispose of your equipment after use, ideally in a biohazard container
More HCV Prevention Messages

Get tested for hepatitis C
Know the status of your injecting partners
Teach your injection partners how to be safe
More HCV Prevention Messages

If someone else injects you, make sure they inject you first and themselves second
Avoid sharing tattoo eqpt., razors, nail clippers
Get vaccinated against hepatitis A and hepatitis B
WHERE to get tested for hep C

Hepatitis A vaccination
Hepatitis B vaccination
Hepatitis B testing
Hepatitis C testing

Linkages to care
Support groups
Syringe exchanges

Source: http://calhep.org/referralguide.asp
HCV Myths Debunked

You CANNOT get hepatitis C from yourself
Bleach does NOT kill hepatitis C
Hepatitis C CAN be treated and cured
HCV prevention materials

About Hepatitis C Exposure

Imagine your body is a castle, and Hep C is a dragon.

Any time you share needles or equipment you put yourself at risk for Hep C, and the Hep C dragon can storm your castle.

Your body fights back by creating antibodies.

If you receive a positive Hep C antibody test result, it means you have been exposed to the virus. The next step is to get another blood test to look for the virus. About 30% of people who are exposed to the Hep C virus will clear it and kick it out of their body.

You may have Hep C and not even know it.

If you do have the virus, you might not feel sick. The dragon can sleep inside the castle walls for years before waking up to affect your liver.

PROTECT YOURSELF & OTHERS FROM THE HEP C DRAGON

Use a clean needle and new equipment every time.

Source: www.harmreduction.org

Source: www.ufomodel.org
WHAT you can do to prevent HCV

Find out what drugs youth in your community are using and how
Find out where to refer young IDUs for injection equipment and HCV testing
Integrate HCV testing into your services

Source: www.ufomodel.org
Contact Information

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www.ufomodel.org
Questions?
Questions for Discussion

• How do these findings compare with what you are seeing in the field (e.g., HIV/STD partners services and disease investigations)?

• What kinds of questions (if any) do you get during trainings or in the field about hep C?

• What resources can local health departments and community-based organizations leverage to increase HCV awareness among youth who may be using prescription drugs or injecting?
Possible roles for local health departments, educators, providers

• Integrate education on misuse of prescription opiates and HCV risk into sex and drug education curricula for youth

• Provide referrals to local syringe exchange programs, pharmacies that sell syringes and to local opiate replacement therapy programs

• Integrate HCV testing into HIV testing services, HIV/STD partner services?

• What else?
Topline Strategies Identified

- Create community-led education and messaging strategies on hepatitis C risks, injection transmission risks (e.g., sharing ancillary injection equipment), and HCV testing resources.
- Improve and increase infrastructure for HCV surveillance and data collection.
- Create age-appropriate (e.g., young adult) substance use and hepatitis C interventions and prevention strategies that are evidence based and effective.
- Expand both community-based and basic science research activities to better understand how to effectively address the emerging crisis of hepatitis C infection among young IDUs.

Meeting Themes

- Understand the influence of family.
- Use adolescent- and youth-appropriate strategies.
- Include the voices of young people.
- Address social networks.
- Expand access to sterile preparation and injection equipment for drug users who cannot or will not stop injecting.
- Leverage opportunities related to advances in HCV treatment.
- Address HCV surveillance gaps.
- Use community-level interventions to address systems barriers to prevention, treatment and care services.
- Foster a coordinated federal and private sector response to this public health issue.
Additional Resources

• CDC, Division of Viral Hepatitis
  www.cdc.gov/hepatitis

• CalHEP viral hepatitis services referral guide
  http://calhep.org/referralguide.asp

• CDPH, Office of AIDS, Syringe Access Information for California, including informational materials for pharmacists
  www.cdph.ca.gov/programs/aids/Pages/OASyringeAccess.aspx

• CDPH, Office of AIDS, HCV Rapid Testing Guidelines
  www.cdph.ca.gov/hcvtest

• CDPH Office of Viral Hepatitis Prevention
  www.cdph.ca.gov/programs/pages/ovhp.aspx

• Harm Reduction Coalition
  http://harmreduction.org/issues/syringe-access/
Contact Information
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STD Healthcare Policy Analyst
STD Control Branch
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