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3 **Hepatitis C elimination in Pakistan is a distant dream unless**  
4 **government controls the health sector**

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9  
10 **Abstract**

11 The World Health Organisation (WHO) has set an ambitious target to eliminate  
12 hepatitis C virus (HCV) by 2030. Pakistan is one of the focused countries  
13 because of the high prevalence of HCV. The prices of direct-acting antiviral  
14 drugs(DAA)have significantly reduced to between 11-25 dollars for a month's  
15 treatment. To achieve the 2030 elimination target, Pakistan has to provide  
16 treatment to one million HCV-infected patients every year, beginning from  
17 2018. This short report highlights a key barrier to achieve this target,i.e. the  
18 unsafe practices by regulated and unregulated healthcare delivery system  
19 comprising trained and untrained healthcare providers who can continue to  
20 churn out new patients with their unsafe healthcare practices and increase the  
21 possibility of re-infection in those who have been treated. Only the government  
22 has the power and authority to regulate and control the healthcare delivery  
23 system. Elimination of Hepatitis in Pakistan will remain a distant dream unless  
24 the healthcare delivery system is tamed.

25 **Keywords:** Hepatitis C, Pakistan, health sector, risk factors.

26 **Hepatitis C risk factors in Pakistan**

27 Globally, Pakistan has the second largest burden of hepatitis C virus (HCV).<sup>(1)</sup>

28 The national survey of 2008 reported 4.8% HCV prevalence,<sup>(2)</sup>while revised

29 estimates of 2013 suggested that there were 7.0 million persons infected with  
30 HCV.<sup>(1)</sup> These are astounding numbers for a country where healthcare services  
31 are fragmented and patients are often not aware of the risks of disease  
32 transmission. One infected person has the potential to pass the virus to not only  
33 his/her immediate family but even beyond. Multiple studies have identified risk  
34 factors for hepatitis C in Pakistan. These risk factors include unsafe injection  
35 practices by both trained and untrained healthcare providers which include  
36 injections given with syringes used on multiple patients as well as injections  
37 prepared on unclean surface, medical and dental procedures carried out without  
38 adhering to infection prevention and control (IPC) practices, barbers using the  
39 same blade on multiple customers and unsafe/unscreened blood transfusion.<sup>(2-8)</sup>  
40 Unsafe injections have also been the cause of hepatitis and human  
41 immunodeficiency virus (HIV) outbreaks in South Asia.<sup>(9)</sup> A case control study  
42 of healthcare workers (HCW) in 2014 found that compared to controls HCV  
43 positive HCWs who reported a needle stick injury were prone to contracting  
44 infection (OR 4.39, CI 95) and those HCWs assisting in surgeries were at 1.7  
45 times increased risk of getting HCV.<sup>(10)</sup> When a healthcare delivery system is  
46 plagued with so many risk factors the chances of acquiring an infection such as  
47 hepatitis C automatically increase several folds. A study in 2017 projected  
48 future burden of HCV in Pakistan and investigated conditions for HCV  
49 elimination. It concluded that HCV burden would remain high and majority of  
50 deaths from HCV in Pakistan would occur in people aged less than 50 years.<sup>(11)</sup>

51

## 52 **The health care delivery system**

53 The healthcare delivery system of Pakistan has three levels-- tertiary care  
54 hospitals in urban centres, secondary level health facilities in rural and peri  
55 urban settings, and basic health units (BHUs) that provide primary healthcare  
56 (PHC) in rural areas. Primary healthcare is often considered the back bone of a  
57 healthcare system and good quality PHC not only improves the health of

58 patients but it also eases the pressure on other levels, especially tertiary level  
59 facilities. Pakistan has a relatively large primary healthcare infrastructure. This  
60 includes 5,000 basic health units, 600 rural health centres, 7,500 other first-level  
61 care facilities and over 100,000 lady health workers providing services across  
62 Pakistan. These primary healthcare services are supported by a network of 989  
63 secondary care hospitals, at tehsil and district levels, for referrals.<sup>(12)</sup> Some of  
64 the barriers related to utilising government PHC services include location of  
65 health facility, availability of staff, quality of services, gender-related issues and  
66 service hours.<sup>(13, 14)</sup> These factors have led to a mushroom growth of a private  
67 and unregulated health sector in Pakistan. This unregulated health sector  
68 consists of untrained healthcare providers often posing as doctors and writing  
69 prescription as well as performing surgical procedures. These untrained  
70 providers often establish their health facility within the community and have  
71 flexible hours. As a result, the community prefers to go to them instead of  
72 government facilities. Although unsafe healthcare practices are not just limited  
73 to untrained health providers and even the trained ones indulge in unsafe  
74 practices, field experiences suggest that the practices of untrained providers are  
75 worse, which is understandable. If someone has no knowledge of infection  
76 control or disease transmission she/he will not give attention to infection control  
77 practices and only focus on seeing as many patients as possible and making  
78 money. There are no correct figures available for the number of untrained  
79 healthcare providers in Pakistan. Anecdotal report estimates around 600,000  
80 untrained health providers in primary and urban settings.<sup>(15)</sup>

### 81 **Decreased price of HCV treatment**

82 The government of Pakistan (GOP) is cognizant of the problem of hepatitis B  
83 and C in the country. It is working hand in hand with WHO's Global Hepatitis  
84 Programme. WHO has set the target to eliminate hepatitis by 2030 and is urging  
85 member states to tackle hepatitis-related issues aggressively. Without  
86 intervention, many people living with HCV will go on to develop complications

87 such as chronic liver disease, cancer and cirrhosis. This puts an extra and  
88 unnecessary strain on the healthcare system – which could be solved through an  
89 initial investment in direct-acting antiviral drugs (DAAs) to cure HCV. The  
90 good news is that HCV can be cured in more than 90% of cases using  
91 DAAs.<sup>(16)</sup>As a result of the efforts of GOP and other stakeholders the price of  
92 generic Sofosbuvir and Daclatasvir combination required for treating HCV have  
93 significantly come down and the cost of one month's treatment is between 11-25  
94 dollars whereas only three years ago this combination used to cost 150 dollars  
95 which was out of the reach of many patients in Pakistan. In the absence of a  
96 registry there is a dearth of reliable treatment data but it is estimated that close  
97 to 250,000 hepatitis C infected patients have received treatment in Pakistan  
98 since 2016. Even though the cost of treatment has decreased, there is a huge gap  
99 to be filled. A modelling study has estimated that between 550,000 to 750,000  
100 HCV infected patients require annual treatment if Pakistan has to achieve the  
101 2030 elimination target.

102

### 103 **Increasing treatment coverage**

104 Increasing treatment coverage requires concerted efforts. A study cited earlier  
105 suggested that to achieve hepatitis elimination target by 2030 the diagnosis rate  
106 for HCV in Pakistan needs to be one million per year and treatment 800,000 per  
107 year from 2018 onwards.<sup>(11)</sup>HCV treatment can be expanded by providing  
108 treatment at lower level health facilities, or what we can call a decentralised  
109 HCV treatment; however, treatment protocols will have to be standardised along  
110 with expansion of testing services.

111

### 112 **Controlling health sectors**

113 Regulated and unregulated health sectors need to be controlled. Unsafe injection  
114 practices are common by trained as well as untrained healthcare providers.  
115 Regulatory bodies of the government have to take these issues seriously.

116 Private practitioners are scattered and it will not be easy to visit each health  
117 facility and check their practices. However, training of general practitioners  
118 through bodies such as the Pakistan Medical Association (PMA), etc may help  
119 in increasing sensitisation and education -in this regard. Realising the  
120 seriousness of the situation, infection prevention and control, and injection  
121 safety should be made part of the training during hospital internship/house job  
122 period; it should also be part of the training of nurses and paramedics.  
123 Exemplary disciplinary actions against those who indulge in unsafe practices  
124 such as reusing injection equipment (syringe, needles or the IV line drip set) and  
125 propagating disciplinary action and instilling fear among those who  
126 intentionally indulge in unsafe practices may help. For untrained healthcare  
127 providers, there is no solution except to make them close their business. If they  
128 reappear, they should be prosecuted so that an example is set for others.  
129 Unregistered blood banks also need to be closed. Refresher courses for  
130 authorised blood banks are important to keep them abreast on issues related to  
131 screening, infection prevention and control, storage and cross matching. Only  
132 the government has the authority to prosecute healthcare providers who  
133 intentionally carry out unsafe injection practices. If unnecessary injections can  
134 be eliminated a significant proportion of risk factor can come down. Without  
135 making concerted efforts and taking concrete steps the elimination of hepatitis C  
136 in Pakistan will remain a distant dream.

137

### 138 **Raising awareness among the masses**

139 Patients in Pakistan demand injections for illnesses that can be treated with oral  
140 medicines.<sup>(17)</sup> This idea is so deep-rooted that many patients believe that without  
141 an injection treatment is incomplete. It is one of the reasons that lead to unsafe  
142 injection practices by healthcare providers especially in settings where patients  
143 cannot afford to purchase a new syringe but insist on an injection when seeking  
144 treatment. Intense injection safety campaigns are required using different

145 methods. Social media is one such tool which can play a key role. However, this  
146 requires developing robust messages in national and regional languages and  
147 disseminating them for longer periods.

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