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The role of community health workers in the COVID-19 pandemic: the case of Peruíbe, São Paulo, Brazil

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Abstract *This study examined the role of community health workers in implementation of primary care actions during the COVID-19 pandemic in the municipality of Peruíbe, São Paulo, Brazil. This is a qualitative case study, guided by the theoretical perspective proposed by Lipsky, according to which street-level bureaucrats play a central role in policy implementation. The research tool was semi-structured interviews of two community health agents, a doctor, a nurse and four local health managers. Analysis of the transcripts identified municipal action in three dimensions to address the health crisis: health system organisation; community health workers' activities; and restoration of primary health care routines. Community health workers were found to play active roles in the various local measures to combat COVID-19.*

Key words *Community Health Workers, Primary Health Care, COVID-19, Health Human Resources, Pandemics*

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Introduction

The uncertainties posed by the onset of the COVID-19 pandemic in March 2020 led Brazilian municipalities to take different orders of action at different times. At first, new care flows had to be organised for those infected with the SARS-CoV-2 virus, for extended social distancing measures (or lockdown) to be applied and for case tracking methodologies, prevention measures and campaigns and rapid testing, implemented. Over the course of two years, health managers and personnel also had to reorganise the components of Primary Health Care (PHC) without neglecting care for mild COVID-19, while taking on vaccination and care for people with long COVID-19.

This was no easy task, particularly as Brazil's municipalities are very diverse in every respect. Also, major differences between the state and federal governments resulted in chaotic health management[1]. In this context, studies of public administrations' local level health actions during the health crisis are important.

Primary care is the main gateway to Brazil's Unified Health System (*Sistema Único de Saúde*, SUS), in which care is framed by the Family Health Strategy (*Estrategia de Saúde da Família*, ESF). Primary health care was considered fundamental in coping with COVID-19, because most cases were mild and could be followed up at this level of care[2].

In São Paulo, implementation of the ESF, still known as the Family Health Programme, began in 1996 in some areas of the capital and state. In 1999, guided by socioeconomic indicators, the State Health Secretary extended the model to the Vale do Paraíba and Litoral Norte, Vale do Ribeira and Itapeva/Itararé, Oeste Paulista and Pontal do Paranapanema, as well as to rural settlements and *quilombola* communities. By 2002, despite its receiving technical and financial support, only 5.6 million people (at the time, around 20% of the population of São Paulo State) were covered by family health teams[3]. Twenty years later, coverage had reached 21.9 million (about 47.8% of the population)[4]. That performance reflects not only the difficulties inherent to processes of organisational change, but also the different models of primary care coexisting in the state.

Community health workers, whose role is promoting and preventing, building mutual receptiveness based on approachable, affectionate words and actions and forging bonds of trust, commitment and friendship with the public, are fundamental to the ESF. Health and family problems are identified by active listening and dialogue, affective values and respect for others' lives, based on the collective interest and logic of territories where they work and often live[5]. Home visits, one tool of the CHW's work, are made as a matter of routine and organised to meet the demands of public and territory[4]. The CHWs' work was particularly jeopardised impacted during the pandemic by social distancing, a control measure that interfered with home visits. These were thus suspended and later resumed in the format of visits near the home. During this period, health teams had to reinvent and extrapolate their activities, adapting them to the various different stages of the pandemic.

This article based on a case study of Peruíbe (São Paulo state) presents and discusses the CHWs' role in primary health care offered during the COVID-19 pandemic.

Methodology notes

In this study, the service site and bureaucrats play central roles in public policy implementation processes. In that regard, the day-to-day realities of government action are frame by the interaction between frontline service agents and the public, as well as the characteristics of the location, the distances between services and residences and/or workplaces, and the local population's health needs, as well as other factors. Spink and Burgos[6] write "governments can run programmes on a wide range of issues to improve overall conditions, but the outcomes always occur in places; *the ideas and measures will always be applied by someone, somewhere*"[6](p.108, emphasis added).

The study also drew on the theories of Lipsky[7], who calls frontline public service personnel "street-level bureaucrats" (SLBs). To Lipsky, when these agents interpret guidelines, they also make assessments and use discretionary freedom to shape the services provided to the public. Lotta and Costa[8] note that on, a day-to-day basis, SLBs act as connecting links between users and the State.

During the public health crisis, SLBs were acknowledged to be essential. Lotta *et al.*[9] note that CHWs heightened the possibility of meeting the challenges of the pandemic, given that they worked to monitor symptoms, collect epidemiological data and refer cases to specialised services. Ballard *et al.*[10] corroborate this in their discussion of the role of community health workers in

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COVID-19, pointing out that they have played a fundamental role for years in preventing, detecting and responding to epidemics in many countries' health systems and have been fundamental to local responses to those events. Peretz *et al.*[11], for example, report how, at the New York Presbyterian Hospital and the Grossman School of Medicine, CHWs acted during the pandemic as cultural intermediaries between the community and health systems, mitigating fear, correcting misinformation among the most vulnerable, identifying and addressing social determinant-related issues that affected COVID-19 prevention and treatment. It is thus evident that CHWs were part of countries' public health response to the pandemic.

The assumption that public measures are not implemented by some mechanised process and that SLBs are central figures does not mean that public policies, laws and programmes are unimportant. On the contrary, as Lima and D'Ascenzi[12] emphasise, such documents also affect how action is implemented, because they give the legal and institutional framework that specifies the arenas of action, the tools, the roles of the various actors and how resources are allocated and distributed. That is why this study referred to certain documents to understand the guidelines that framed CHWs' actions in Peruíbe.

This study used data from the qualitative stage of the survey "Primary Health Care Policy in the pandemic context in municipalities of São Paulo", by the *Instituto de Saúde* (IS), an agency of the São Paulo state department of health (Opinion No. 4.842.154 of the IS research ethics committee). In the second half of 2022, 37 people from six municipalities, selected from the survey produced in the quantitative stage, were interviewed face-to-face. The semi-structured interviews followed a guiding script about local PHC organisation during the public health crisis. Participation was voluntary, after signing a declaration of free and informed consent, and participants were free to answer questions or not and to introduce other topics. The interviews were recorded, transcribed and read in full.

The methodological strategy used was the Peruíbe case study, which made it possible to discuss the role of CHWs in combating COVID-19. That approach afforded an in-depth understanding of the complexity of certain situations by detailing and contextualising the phenomenon[13]. The municipality of Peruíbe was chosen, because analysis of the interviews identified this theme in the discourse of several staff members. Also, as it is a tourist destination, local management deals daily with the challenges of a seasonal population and, since the onset of the pandemic, had absorbed a large number of people from other cities working remotely, which entailed complexities for the work of PHC and new SUS user registrations.

Eight interviews were conducted in the town, of four street-level bureaucrats, two community health workers (CHW1 and CHW2), a doctor (P1) and a nurse (P2), as well as four managers at different levels (G1, G2, G3, G4). It was thus possible to describe the main actions taken during the pandemic and to identify the CHWs' role, which emerged transversely in the interviewees' discourse. That is, although the original script did not contain any specific question on the topic, it permeated the interviews, allowing us, on a discursive practice approach, to circumscribe the interpretative repertoires associated with the CHW's work as an object of analysis[14].

This article focuses on information on the way Peruíbe organised primary health care during the pandemic, as well as on the repertoires that participants deployed to describe the CHWs' function. Interpretive repertoires are linguistic devices comprising terms, descriptions, commonplaces and figures of speech that demarcate the list of possibilities in the production of meaning, according to the dynamics, variability and polysemy of social relations[14]. As the focus of analysis, they also help to identify how we position ourselves and our interlocutors, and to perceive the versions of reality produced by people, groups or society[15]. This was complemented by using the interviewer's field diary and texts from documents in the public domain (municipal laws and decrees and press reports).

The main limitations are, first, that the research script was prepared to study the organization of primary health care in the municipality and not with regard to CHWs' role in the pandemic and, second, the number of participants. It is thus important that further research investigate community health workers' role in COVID-19, which this study demonstrated to be fundamental in PHC. It is also important to invest in qualitative research on PHC in the public health crisis.

Social and political context

Peruíbe is in the Baixada Santista metropolitan region, 140 km from the state capital, São Paulo. Covering 326.216 km² and with a population of 68,344, it has a population density of 209.51/km² and a municipal human development index of 0.749, which is considered high[16].

The local health system includes 12 family health facilities and a "health academy", as well as a general hospital, which also has a maternity unit, a medical speciality outpatient clinic and two psychosocial care centres, one of them for children. A survey in September 2022 found the town had 73 CHWs[17] and PHC population coverage of 92.38%[18].

Since the SUS was instituted, health policies have been induced by the federal government, which formulates and coordinates intergovernmental action at the subnational and local levels[19]. With the health crisis, however, many states and municipalities diverged from federal proposals for combating COVID-19 and, breaking with that model, applied specific policies. Friction between the national and subnational entities emerged at several points regarding how to tackle the pandemic, notably around the former president's resistance to social distancing measures and his incessant discrediting of scientific evidence in favour of denialism and political and economic interests. These divergences can be explained by reference to his address to the nation, on March 26, 2020:

Families' livelihoods must be preserved. Yes, we must return to normality. A few state and local authorities must abandon the scorched earth concept, including transport bans, business closures and mass confinement. *The [...] world has shown that the risk group is people over 60 years old. So why close schools? Fatal cases are rare among healthy people under 40 years of age. 90% of us will not have any symptoms if we are infected. We must, yes, be extremely concerned about not transmitting the virus to others, especially to our dear parents and grandparents, respecting the guidelines of the Ministry of Health*[20](p.39; emphasis added).

In that context, the Executive published Provisional Order No. 923/2020, of Law No. 13,979/2020, which concentrated the identification and regulation of essential activities in the person of the president. That order was then challenged, on April 15, by a Direct Action of Unconstitutionality, ADI No. 6,341, leading the Federal Supreme Court, on constitutional principles, to establish the concurrent competence of the federal district, states and municipalities in combating the pandemic and to acknowledge the power of local managers to apply specific policies for the crisis[21].

In the early months of the pandemic, the São Paulo government published decrees imposing quarantine, and, on May 28, 2020, it introduced the São Paulo Plan (Decree No. 64,994)[22], which provided for phased easing of social distancing.

Peruíbe and nine other municipalities make up the Baixada Santista Metropolitan Region Development Council (Condesb), where mayors make collective decisions on COVID-19 control in the local regional. On December 23, 2020, the Condesb decided that the region would remain on yellow alert, at odds with the São Paulo State Coronavirus Contingency Centre, which had placed the entire territory of São Paulo on red alert, from 25 to 27 December 2020, and 1 to 3 January 2021[23]. The mayors' argument was that there was not enough time to take such a measure and that it was more important to block the beaches during New Year's Eve. They also requested the state government place health barriers on the Baixada access roads, so as to prevent the influx of tourists. On 25 January, 2021, following a consensus decision by the Condesb due to the mounting numbers of COVID-19 cases, hospitalisations and deaths, Peruíbe decided to follow the São Paulo Plan completely: at the time, the recommendation was for "orange alert, with red alert restricted on weekdays, after 8 p.m., and full at weekends"[24]. That is, the municipalities did not adhere automatically to the state plan, but rather made a joint assessment of the local situation, the multiple dimensions entailed by the measures and autonomous decisions at different times during the pandemic.

The organization of the local health system during the pandemic

To guarantee health care and control the number of those infected with SARS-CoV-2, Peruíbe set up a new flow of care and referral for suspected and confirmed cases, using a new monitoring and tracking methodology. In the early months of the pandemic, the main gateway for direct care for symptomatic flu-like illness was the medical speciality outpatient clinic, which screened cases and referred them to the emergency unit, as necessary.

In an effort to improve communication and assist the public in preventing and combating the spread of the disease, the municipal health department set up a COVID-19 care centre, comprising an epidemiological surveillance function and workers from the PHC system. Open from Monday to Friday, 8:00 a.m. to 5:00 p.m., it provided guidance to the public on the main doubts relating to the disease: how and when to access the PHC facility, the emergency unit or stay at home and watch the symptoms:

[...] follow up suspected cases or answer patients' questions. We passed on information by telephone [...] they called this centre and cleared up doubts. Or those cases of COVID, we kept monitoring them by phone [...] to find out how the patient was progressing. If they were still not doing well, they were told to go to the emergency unit. (CHW1).

Together with the epidemiological surveillance, it also monitored reported cases and their families. Notification triggered the work process at the centre:

[...] it was the duty of surveillance to make the first telephone contact with that person and then send these notifications to the corresponding health workers. So, from the third to the fourth day of symptoms [...] we received the person's records. We contacted them [...] and monitored – daily, if the case was any more serious. And if we discovered that the person was fine, we contacted them every two days, except at weekends. (CHW2).

At the start of the crisis, the municipal government suspended many routine PHC activities. But on 18 June 2020, the municipal executive published Decree No. 4,956[25], with rules for the return of PHC services and new flow arrangements for COVID-19 cases:

At this stage, PHC facilities had to reorganise their work process and patient care in their coverage area, provide care for suspected COVID-19 cases with mild symptoms and not meeting severity criteria, as well as for patients from priority groups and by vulnerability criteria[23].

That is, two flows were set up for access to PHC units, one for COVID-19 symptomatic cases and another for other demands:

[...] at a second point, when these patients increased and there was an enormous volume of care at the emergency unit, there were action plans for us to care for patients with mild symptoms within the PHC facility itself and then refer them, depending on the urgency, to the emergency unit (CHW1).

This strategy aligns with what has been observed by a number of authors who, from the outset, understanding primary health care to be the proper place to address COVID-19, argued that it was fundamental to use its resources and knowledge of the territory, as well as the bonds already forged with the local population. In that way, it would be possible to monitor all cases and treat people with mild symptoms[26-28]. In that light, for managers, PHC took the leading role in the pandemic, with CHWs playing a fundamental role in the actions:

I understand that it was a leading player, *because it was in our hands: active detection of patients with tuberculosis [...] childcare follow-up, of pregnant women, too; monitoring families for [...] COVID, when you had a suspected case. So,* that health worker *also kept up with guidance for families, in [...] isolation at home, what to do in case of suspected [COVID], [...] what to do if it got worse; or if it would have to be referred, directed. The visits too; contact also with the families that have the patients at home, [...] the care that was no longer as frequent, but keeping some channel open, in case we couldn't respond as soon as expected. So, if there was any kind of intercurrence along the way,* he [the CHW] was alerted, *the team would go at a shorter interval than what the pandemic allowed to make those visits* (G2; emphasis added).

Note that Lipsky[7] points out: "Finally, goal conflicts and ambiguity arise from the contradictory expectations that shape the street-level bureaucracy role"[7](p.113). Thus, despite the accounts of managers and other personnel indicating that there were no conflicts with the team over CHWs' functions during the pandemic, it has to be said that it was not always a smooth relationship. At the onset of the crisis, some resisted working at the front line:

[...] people who were afraid to give care. We went through situations of health agents' refusing to do active detection of patients, not wanting to provide care, not understanding that that was their job [...] [that] in a way, they had chosen to be there, right? But I can't judge either, because [...] the fear of death exists, right? Fear of losing loved ones is natural, too (CHW2).

In Peruíbe, despite the health teams' efforts, many users regularly monitored by the PHC were lost, because COVID-19 cases had to be prioritised and people often avoided health services for fear of contagion. Also, the physical premises of the primary health care service could not accommodate a large number of people, because of social distancing guidelines. Another difficulty pointed to was the increase in the population to be served in the municipality, as already mentioned, due to the seasonal population working remotely, with no increase in funding, as reported by G1:

[...] residents of São Paulo, São Bernardo, and so on, came here during the pandemic. But their medical record, [...] their bond is back there in the other municipality. And who gets paid for that record? [...] That's where they've been registered for longest. So Peruíbe may be providing greater assistance in meeting various needs that they have

expressed here in the municipality, but their registration is going to São Bernardo, São Paulo, where they are not even going any longer.

Accordingly, the CHWs' workload increased during the pandemic, because they were the ones who had to make the entries.

The interviewees reported internal routine that included constant training and meetings to align all procedures and give teams access to new evidence-based COVID-19 care protocols. Channels were also created to spread updated information, such as new guidelines, new clinical care protocols and memoranda to optimise communication within the teams:

[...] hold a team meeting once a week or every two weeks [...] as demand from [routine] patients was lower, despite all the stress [...] we ended up talking [a lot] during the week anyway (P1).

[...]information on alterations that we had, [...] some municipal protocols, not only on COVID, but even [...] on care for pregnant women, for children [...] 0on-line meetings [...] [of] this new flow (P2).

[...] this training, [...] scientific planning – and this is very important to say – I thank God that we participated in a work team, from right up there to down at the bottom, very scientific and not very political. Because we know that politics, from one side and the other, that fanaticism, isn't healthy, right? Always looking for the ripple effect, right? Hierarchical (CHW2).

Because it is a new disease, COVID-19 generated a lot of disinformation and denialism. The SLBs from Peruíbe, such as P1, P2 and CHW2, recognised the importance of scientific support for management's proposals and the effort to ensure communication within the teams, as well as their providing training, capacity-building and guidelines for action. In that respect, Lipsky[7] notes: "Administrators and occupational and community norms also structure policy choices of street-level bureaucrats"(p.56). To him, this does not prevent SLBs from exercising discretion in their area of activity: "even public employees who do not have claims to professional status exercise considerable discretion"[7](p.56).

The next section will discuss how the CHW's, with their discretionary power and guided by the knowledge built up in their close relationships with their public, were important in addressing the public health crisis in Peruíbe.

The CHWs' activities in the pandemic

Social distancing recommendations led to the introduction of other functions for CHWs and involved them in the work to contain the spread of the virus[29]. Despite protocols and guidelines, CHWs establish a complex relationship with the population that requires them to make discretionary decisions and interventions in the day-to-day work of health promotion. Lipsky[7] writes:

[…] street-level bureaucrats work in situations that often require responses to the human dimensions of situations. They have discretion because the accepted definitions of their tasks call for sensitive observation and judgment, which are not reducible to programmed formats[7](p.59).

In Peruíbe, it could be seen that, during the pandemic, CHWs maintained some routine activities, such as registration of new residents. However, a number of changes in routine led these workers to work in providing guidance to reduce contamination, monitoring cases of COVID-19 and observing for signs of other diseases worsening, because they dealt routinely with chronically ill people, such as diabetics and hypertensives, as well as pregnant women and older adults. This enabled them to learn of problems connected with these diseases. CHWs also used active listening in telephone calls and peridomiciliary visits in order to take therapeutic action.

Telephone monitoring was very important to ensure that people diagnosed with COVID-19 could dispel their doubts and be instructed to seek health services if symptoms worsened. In that regard, it is difficult to measure CHWs' actions, because SLBs' activities depend on many variables, often preventing effective evaluation. As Lipsky[7] put it: "It is not only that human beings are complex and that a metric of correct responses is inappropriate. Equally important, there is rarely any way to determine on a regular basis what would have happened to clients in the absence of intervention"[7](p.118). One interview excerpt expressed this complexity:

[...] sometimes it's difficult to talk about COVID monitoring, because there's no way to measure how far it prevented deaths, *right? Sometimes that person who had symptoms and we told them to go to the emergency unit, they may be alive because of that, or sometimes they wouldn't [actually] die* (CHW2; emphasis added).

What is certain is that the bonds of trust forged in regular monitoring of the public before the pandemic did favour screening and monitoring of COVID-19 cases:

[...] I particularly remember a pregnant woman that I had been seeing before [...]. During the pandemic period, we called her every day. She had

COVID and she was someone for whom telephone contact, for example, was necessary and [...] beneficial. Because, once when I called this patient, she said she was feeling a certain tiredness at rest – right? – a symptom of some difficulty breathing, even without doing any physical exercise, lying down. And we warned her to go to the emergency unit, and part of her lung was already compromised, see? She was treated (CHW2).

In the CHWs' daily routine, attentive listening, participant observation and bonding are work tools that make therapeutic care actions possible whenever there is interaction:

We called the next day and the relative said: "He was intubated." In the same way, some weeks we'd be seeing about twenty patients a day, that was divided up well. So, [...] we could handle that amount, which was good for giving people attention. And we lost five patients in one day, finding out, calling. Another kind of work that we also don't know about was consolation by telephone, knowing that someone had been accompanying the person they'd lost, right? It was a very important job that we did during this pandemic, and it left its mark (CHW1; emphasis added).

[...] there was a patient that I called every day and we talked for more than 40 minutes because he was depressed. And, when at the end [...] of his treatment, he was able to be discharged from COVID monitoring, when everything was fine, we came to meet on... on his initiative. Because three times – he had firearms at home, working in public security – he wanted to take his own life and what sustained him were [these] connections (CHW2).

In these excerpts the SLBs' discretionary freedom is evident[7,8]; it allows them to decide to prioritise certain patients and devote more time to those who need more attention. Another dimension brought out here is the CHWs' ability to connect with the community, which was also highlighted by Peretz *et al.*[11]:

CHWs leveraged their cultural connectedness and shared life experiences to offer practical advice, coaching, and support in navigating the health system to address each challenge. Their efforts included facilitating medication delivery, connecting socially isolated older adults over the phone, and providing a listening ear and reflective empathy[11](p.3).

Returning to the PHC routine

In the first three months of the pandemic, routine home visits were suspended, restricted to specific cases and active detection following COVID-19 notifications. As already said, Decree No. 4,956/2020[25] instructed visits to be resumed in settings near homes, in order to guarantee the safety of both the public and health personnel. This study found PHC being adapted in a gradual process in response to the successive stages of the pandemic. For example, health promotion groups, one of the regular collective activities that CHWs took part in and/or coordinated, had been suspended at the start of the crisis to avoid gatherings. In some territories, however, these were quickly restored, as soon as distancing measures were relaxed:

So, apart from the lockdown times, when people were really restricted from leaving their homes, when the requirements were reduced, the walking groups continued, right? (CHW1).

CHW1's words show that, although health promotion, which takes place during home visits, has historically been central to the work of community health workers, because it helps teams to provide comprehensive care, it is necessary to go beyond that dimension:

[...] I just remembered a patient who I registered a little while ago, [...] affected by the pandemic. She had lost two twin daughters, one day after another, she lost her husband. And we accompany, have accompanied her. Five months ago I registered her, I discovered this situation. She was in a depressive condition, diabetic – she had previously used oral medication: because of the depressive condition, she had a latent food compulsion symptom, her diabetes rose to a level where she needed insulin. Only she didn't know. It was through talking to her, learning this history [...] this compulsion she acquired during this period, that I took the case to the nurse (CHW1).

It is fundamental that managers at all levels recognise that these professionals' importance goes beyond health promotion. They must be recognised as allies in the fight against the dismantling of the Family Health Strategy, which is explicit in the 2017 National Primary Care Policy. That policy makes far-reaching changes to the CHWs' role, by removing the requirement of a minimum number of CHWs in family health teams and recommending that those who remain perform nursing duties, thus reinforcing a biomedical rationale and breaking with the health promotion model[30].

Final remarks

Administrative policy decisions were very important to controlling the pandemic in Brazil and framed guidelines at the various levels of management of the Unified Health System. However, it has to be recognised it was street-level bureaucrats who were responsible for giving material form to measures from day to day in health care services. The study showed that community agents were fundamental to PHC activities to address the public health crisis caused by COVID-19. In the municipality of Peruíbe, these personnel played an active part in prevention, tracking, monitoring and care offered to the local population.

In the frontline of health work, especially at the most acutely critical points, SLBs make decisions and choices that impact the population. That is why it is important to ensure capacity-building and training, so that those choices are guided by scientific evidence and help to extend the reach of multidisciplinary teams.

The CHWs' knowledge of the territory and their ability to connect with the community greatly facilitated the various health promotion activities they engaged during and after the pandemic. The study showed that there are CHWs who manage to play their role with reflective empathy and attentive listening to demands, which makes it possible to inform the health teams and provide the population with comprehensive care. In that regard, from the experience of Peruíbe, these personnel can be said to be fundamental to PHC, not only in day-to-day service activities and control of health crises. They are fundamental to restoring a national primary health care policy aligned with the fundamental and organisational principles of the SUS.

Collaborations

C Malinverni contributed to data analysis, methodology development, results, discussion of the article and approval of the version for publication. JIM Brigagão contributed to data analysis, methodology development, results, discussion of the article and approval of the version for publication. MDG Gervasio contributed to discussion of the article, critical review and approval of the version for publication. FS Lucena contributed to discussion of the model of health care.

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