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► **To cite this version:**

Andrew Hardy, Melody Shum, Vũ Ngọc Quyên. The ‘F-System’ of Targeted Isolation: A Key Method In Vietnam’s Suppression of Covid-19. 2020. halshs-03151062

**HAL Id: halshs-03151062**

**<https://shs.hal.science/halshs-03151062>**

Submitted on 2 Mar 2021

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# EUROPEAN POLICY BRIEF

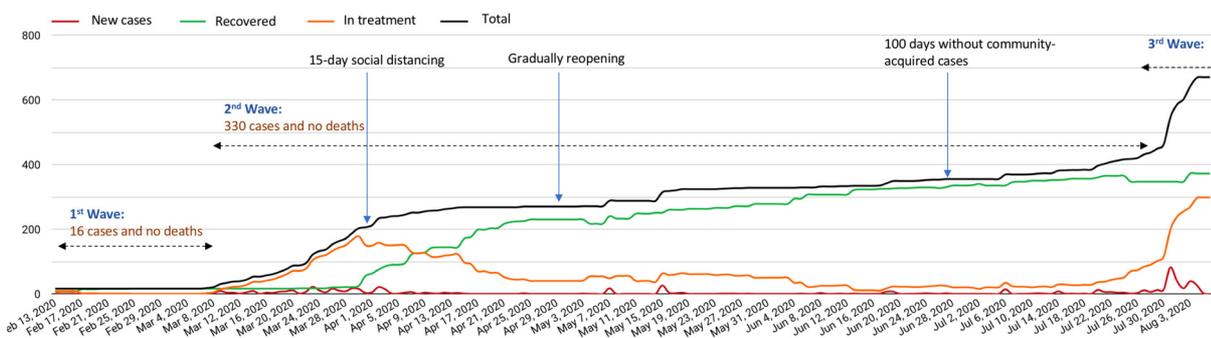


## THE ‘F-SYSTEM’ OF TARGETED ISOLATION: A KEY METHOD IN VIETNAM’S SUPPRESSION OF COVID-19

Andrew Hardy, Melody Shum, Vũ Ngọc Quyên<sup>1</sup>,  
December 2020

### INTRODUCTION

Figure 1. Vietnam Covid-19 statistics (3 August 2020). Data source: Vietnam Ministry of Health (MOH)



### Introduction: Targeted isolation

Vietnam’s suppression of Covid-19 owes much to the use of a containment method based on targeted isolation. Targeting was done based on contact-tracing – isolating people exposed to infected persons – and on geography – isolating places where infections clustered. Both forms of targeting were relevant to the outcome, but here we examine the first, lesser-known form, the test, trace and isolate system for individuals, for which Vietnam developed an original approach.

This was the ‘F-system’, developed by the Ministry of Health as part of its epidemic prevention planning, which is a multi-tier epidemiological classification to isolate confirmed and suspected cases of Covid-19. Part 1 explains how the ‘F-system’ functions. Part 2 discusses its implementation in the second wave (March-April 2020). Part 3 explores how this tool hierarchized risk and facilitated implementation of epidemiologically appropriate quarantine and monitoring regimes.

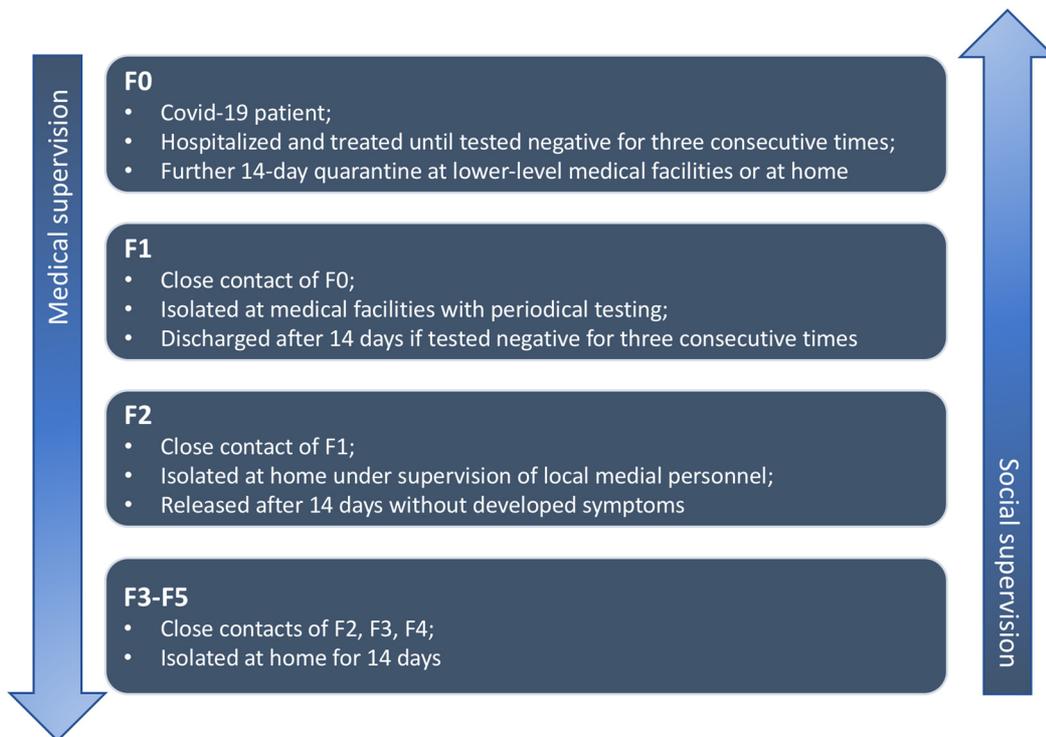
<sup>1</sup> Andrew Hardy, École française d’Extrême-Orient; Melody Shum, Department of History, Northwestern University; Vũ Ngọc Quyên, Institute of Economics, Vietnam Academy of Social Sciences.

### 1. The ‘F-system’ in theory

The ‘F-system’ does two things: 1) it uses contact-tracing to categorise people by proximity to a case of Covid-19, and 2) it uses those categories to apply appropriate quarantine regime to suspected cases. Under the ‘F-system’, individuals are categorised by proximity of exposure to an infected person. People testing positive for Covid-19 are classified as F0. People having direct contact with an F0 are F1. Four more risk levels—F2 to F5—are identified in the same way.

Establishing degrees of distance from an infected person enables officials to apply quarantine and testing regimes that correspond to individuals’ level of exposure. Tracing, isolating and monitoring can start immediately, even for people at low risk (up to five degrees of distance from a confirmed case).

Figure 2. Vietnam’s multi-tier ‘F-system’ for contact-tracing and isolation



#### F0

F0s are people who have contracted Covid-19. Once identified, F0s are isolated at a designated Covid-19 hospital. They are assigned a ‘patient number’ to protect their identity when the Ministry of Health publishes information about them, including age, gender, nationality, symptoms, travel details, and contacts. An F0 is declared healthy after three negative tests and a period of quarantine.

#### F1

Contacts of an F0 are considered F1. F1s are quarantined at medical facilities for testing and monitoring, or sometimes at home. Those without symptoms who test negative three times are discharged 14 days after their last contact with an F0, and issued a health certificate.

#### F2

Contacts of an F1 are considered F2. Once an F1 is identified, a list of their F2s is issued to local (ward/commune) authorities. Officially notified of their quarantine dates, F2s self-isolate at home for 14 days under official supervision. Local medical officials monitor their symptoms and provide grocery shopping and trash disposal to those living alone, assisted by police. Community vigilance facilitates the supervision of social distancing without the need for a constant official presence, as neighbours often report quarantine violations.

## **F3, F4 and F5**

F3s stay at home for 14 days without official supervision. They learn about their status from their F2: they are not officially notified or monitored (with regional exceptions). F4s and F5s learn of their status from their respective F3/F4, but their lives do not change. At this level of risk, the government relies on people's self-discipline and public health awareness, as well as Vietnam's traditional culture of mutual supervision.

## **2. The 'F-system' in action**

This part is based on data collected during the quarantine of the two of the authors (one was suspected F0, the other F3 then suspected F0).

### **Testing**

Early in the pandemic, Vietnamese scientists identified the virus in their laboratories and developed testing kits. Two groups were tested: arrivals from abroad and people visiting hospitals with Covid-19-like symptoms.

Early in the second wave (March), arrivals were quarantined by risk level based on country of departure and symptoms. Visitors from hotspots (then South Korea and Japan) self-isolated at home while Vietnamese citizens entered dedicated facilities. All filled health declaration forms: those reporting/exhibiting symptoms were tested. People testing positive were classified F0; all passengers from their flight were quarantined.

Hospital cases observe procedures involving health declarations and RT-PCR tests. F0s are considered community-acquired Covid-19 patients: their living and working places are locked down, their contacts traced and their F1s and F2s listed.

### **Contact-tracing**

In March, F1s and F2s were identified: 1) on arrival, 2) after an F0 was confirmed on their incoming flight, 3) after tracing as a contact of a community-acquired F0. After the borders closed on 25 March, they were identified on arrival and through contact-tracing in the community.

Up to 22 October 2020, Vietnam recorded a total of 1,145 confirmed cases (F0s).<sup>2</sup> During the first and second waves (January-April), over 200,000 people were isolated, including international arrivals.<sup>3</sup> During the third wave in Da Nang (July-August), 386 F0s, 11,495 F1s and 15,161 F2s were identified.<sup>4</sup>

Contacts are traced 1) by officials and 2) by individuals.

1) Officials: After experiencing Covid-19-like symptoms, one author was admitted to hospital as suspected F0 and gave two written declarations of her movements and contacts to medical staff. They passed this information to local authorities and police, who called the contacts, checked the information and imposed appropriate quarantine.

2) Individuals. Self contact-tracing is also practiced. In Lang Son, a woman who returned from locked-down Da Nang attended a wedding. After she tested positive, all the wedding guests went to hospital without instruction from the authorities, considering themselves F1s. Up to now, contact tracing worked through normal social networks. Quarantined at hospital, the F1s declared their contacts (F2s), who were then reached by police and isolated at home.

### **Quarantine in dedicated facilities**

F0s and F1s are quarantined in hospitals. During the second wave, a Vietnamese construction worker with Covid-19 symptoms arriving from Japan was admitted as suspected F0 to the Hanoi Hospital for Tropical Diseases. Two tourists and a student were admitted as F1s as they were on the same flight as a crew member identified as Patient 45. A tour guide was admitted as F1 after contact with an F0 colleague (Patient 39), who had caught the virus from the tourist identified as Patient 24.

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<sup>2</sup> MOH Daily Updates of COVID-19, 22 October 2020. Retrieved on 25 October 2020 from <https://ncov.moh.gov.vn/web/guest/-/6847426-361>.

<sup>3</sup> 'Emerging Covid-19 success story: Vietnam's commitment to containment', (undated) retrieved on 27 October 2020 from <https://www.exemplars.health/emerging-topics/epidemic-preparedness-and-response/covid-19/vietnam>.

<sup>4</sup> 'Tiếp tục thực hiện cách ly xã hội ít nhất đến hết tháng 8', Da Nang portal (26 August 2020), retrieved on 25 October 2020 from [https://danang.gov.vn/web/guest/viruscorona/chi-tiet?id=40774&\\_c=100000155](https://danang.gov.vn/web/guest/viruscorona/chi-tiet?id=40774&_c=100000155).

In theory, the hospital assigned patients to wards with other patients of the same risk level, measured by number of negative tests. However, in April an influx of patients meant it took time before people could change ward in line with their testing history. In addition, Covid-19's incubation period means that the number of negative tests was not always a good measure. One of the author's roommates, the wife of Patient F0 (Patient 76), tested positive on her fourth test (becoming Patient 186). On this news, a doctor told the author to switch ward. By this time the author had three negative tests: she soon transferred to a university campus to complete her quarantine.

Before September 2020, quarantine in dedicated facilities was free for all while treatment was free for Vietnamese. Paid quarantine at hotels was available for foreigners. In a relief measure for Vietnam's hospitality industry, from September all arrivals pay for quarantine.<sup>5</sup>

### **Home isolation**

F2s and F3s self-isolate at home. When the tour guide was classified as F1, his family members (F2s) were instructed to isolate at home. For three days the police stood guard outside. Neighbours spread rumours that he was seriously ill and his sister infected. After quarantine in hospital, he had to self-isolate at home for another 7 days. No one was standing guard, but he believed neighbours would report him if he stepped out.

One of the authors was classified F3. She received no official notification, but was told by her F2, her manager at work. She stayed home for two weeks and saw no one but her son (F3), except when shopping and disposing trash. Neither the local authorities nor the neighbours knew she was F3. She stopped seeing her brother, who lived in the same building. He and his girlfriend (technically F4 and F5) lived a normal life.

Local authorities and community members jointly supervised the quarantine of F2s, while lower risk groups (F3-F5) self-monitored.

### **Moving through the F-system**

An individual's F-status is not always static and might change over time.

If F1s become F0, they are considered a secondary infection case and the F-status of their contacts is upgraded. When an F1 becomes F0, their contacts (previously F2s) become F1s.

People leave the F-system when they are free from the virus, when their quarantine ends, or when their F1 or F2 tests negative.

### **Local variations**

The social distancing regime is left to the discretion of local authorities. Some applied stricter measures than others.

During the second wave, when Hanoi was a high risk locality, Haiphong banned arrivals from Hanoi. In Thanh Hóa arrivals from Hanoi had to be reported: one late evening arrival planned to report the next day, but was surprised by a dawn visit from officials informed of her presence by neighbours.

During the third wave, travellers from locked-down Đà Nẵng – identified from self-declarations and transport records – were tested and self-isolated at home. Đà Nẵng officials issued market-entry tickets to restrict shopping to one named household member every three days. At that time, Ho Chi Minh City set four risk levels for arrivals from different parts of the country.

The ranking principle underpins targeted isolation not only for individuals, but also for areas (ward, commune, district, etc.). It was used to reopen the country after the national lockdown, imposed on 1 April. Localities were ranked by risk level: high, medium, low. Classified 'high risk', on 15 April Hanoi and Ho Chi Minh City extended the lockdown by a week, while 'medium risk' cities like Haiphong allowed gatherings of 20 people. Local officials used several criteria – epidemiology, coping capacity, demography, traffic, number of incoming foreigners and infected cases – to adapt social distancing measures to local conditions.

The 'F-system' is not referenced in these local measures, but its key features – such as hierarchizing of risk levels, targeted testing and isolation – are apparent. The third wave was more serious than the second, but no national lockdown was necessary: only individuals and places at risk of exposure were quarantined. This highlights Vietnam's improved confidence and performance in targeting isolation.

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<sup>5</sup> Notice 313/TB-VPCP dated 29 August 2020 by the Office of Government.

### 3. Epidemiological risk as the basis for targeting isolation

The 'F-system' is based on a targeting principle that combines social and epidemiological features. It creates an interface allowing the implementation of social regimes (isolation at home/hospital) appropriate to the epidemiological status of individuals (established through testing and contact-tracing). The F-numbers measure the degree of proximity to an infected person, hierarchize the risk of contagion and signal increases in risk (by moving people up the F-scale). It is a precision 'whack-a-mole' tool.

The 'F-system' relies on existing administrative arrangements. Medical staff pass contact-tracing information to police, who trace contacts, while staff of residential quarters supervise F2 quarantine with community assistance.<sup>6</sup> These parallel networks cooperate to form a locally-based radar system for detecting Covid-19.

Technological innovations have been developed to support traditional contact-tracing. In the second wave, the Ministry of Information and Communications sent updated medical instructions via texts to all mobile phones. It recommended the NCOVI app for online medical declaration. In the third wave, it urged residents to download Bluezone, an app notifying proximity to an F0.<sup>7</sup> But Vietnam mainly relied on old-school methods and existing institutions like health declaration forms, police registration and community cooperation to trace contacts and ensure isolation. None of the methods required an expansion of Vietnam's state apparatus.

## POLICY IMPLICATIONS AND RECOMMENDATIONS

Not all the tools of governance possessed by the VN government are replicable in other contexts, but some lessons may apply elsewhere.

Vietnam developed precision tools allowing measurement and hierarchizing of infection risk. This relied on the F-scale for individuals, and on the 'high, medium, low' tier scale for areas. In both cases, risk was assessed using epidemiological criteria, and the assessments were used to design appropriate social distancing regimes.

Thanks to its proactive leadership which planned effectively for the epidemic and engaged sensitively with society, and the positive response from a vigilant population culturally prepared for crisis, the government was able to make effective use of these tools.

## RESEARCH PARAMETERS

**Competing Regional Integrations in Southeast Asia** (CRISEA) is an interdisciplinary research project that studies multiple forces affecting regional integration in Southeast Asia and the challenges they present to the peoples of Southeast Asia and its regional institutional framework, ASEAN.

CRISEA innovates by encouraging 'macro-micro' dialogue between disciplines: global level analyses in international relations and political economy alongside socio-cultural insights from the grassroots methodologies of social sciences and the humanities.

Coordinated by the Ecole française d'Extrême-Orient (EFEO) with its unique network of ten field centres in Southeast Asia, the project brings together researchers from seven European and six Southeast Asian institutions, with three objectives:

### 1. Research on regional integration

Multiple internal and external forces drive regional integration in Southeast Asia and compete for resources and legitimacy. CRISEA has identified five 'arenas of competition' for the interplay of

<sup>6</sup> Inhabitants of wards/villages are grouped into 'residential quarters' headed by elected locals.

<sup>7</sup> From August 12 until 12 September, this app detected 1,920 F1s and F2s. Văn Anh, 2020. 'Vì sao Bluezone hỗ trợ Hải dương truy vết được nhiều F1, F2 hơn cả?' *ICTNews* (14 September 2020), retrieved on 25 September 2020 from <https://ictnews.vietnamnet.vn/cuoc-song-so/hai-duong-chiem-toi-hon-50-tong-so-truong-hop-f1-f2-truy-vet-qua-bluezone-264073.html>.

these forces, investigated in the project's five research Work Packages. It further aims to assess the extent to which they call into question the centrality of ASEAN's regional model.

## 2. Policy relevance

CRISEA reaches beyond academia to engage in public debate and impact on practitioners in government and non-government spheres. By establishing mechanisms for dialogue with targeted audiences of policymakers, stakeholders and the public, the project furthers European science diplomacy in Southeast Asia and promotes evidence-based policymaking.

## 3. Networking and capacity-building

CRISEA reinforces the European Research Area (ERA) in the field of Asian Studies through coordinated EU-ASEAN academic exchange and network development. It connects major research hubs with emerging expertise across Europe and Southeast Asia. CRISEA also promotes participation of younger generation academics in all its activities, notably policy dialogues.

### PROJECT IDENTITY

<b>PROJECT NAME</b>	Competing Integrations in Southeast Asia (CRISEA)
<b>COORDINATOR</b>	Andrew Hardy, EFEO, Paris, France, hardyvn25@yahoo.com.
<b>CONSORTIUM</b>	Ecole française d'Extrême-Orient – EFEO – Paris, France University of Hamburg – UHAM – Hamburg, Germany University of Naples l'Orientale – UNO – Naples, Italy Institute of Social and Political Sciences – ISCSP - Lisbon, Portugal University of Lodz - UL – Lodz, Poland University of Oslo – UiO – Oslo, Norway University of Cambridge – Cam – Cambridge, UK Chiang Mai University – CMU – Chiang Mai, Thailand The Centre for Strategic and International Studies - CSIS – Jakarta, Indonesia Ateneo de Manila University – ADMU – Quezon City, Philippines University of Malaya – UM – Kuala Lumpur, Malaysia Vietnamese Academy of Social Sciences – VASS – Hanoi, Vietnam The University of Mandalay – MU – Mandalay, Myanmar
<b>FUNDING SCHEME</b>	H2020 Framework Programme for Research and Innovation of the European Union – Research Innovation Action (RIA) – Europe in a changing world, Engaging together globally
<b>DURATION</b>	November 2017 – February 2021 (40 months).
<b>BUDGET</b>	EU contribution: €2,500,000.00
<b>WEBSITE</b>	<a href="http://www.crisea.eu">www.crisea.eu</a>
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